

Farm Structure Survey 2009/2010 Survey on agricultural production methods 2009/2010

National Methodological Report (NMR)

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Member State: **ROMANIA**

FARM STRUCTURE SURVEY 2009/2010

SURVEY ON AGRICULTURAL PRODUCTION METHODS 2009/2010

NATIONAL METHODOLOGICAL REPORT

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SUMMARY

In Romania, the first General Agriculture Census (GAC 2002) was carried out in the period 2nd of December 2002 – 31st of January 2003.

The main GAC 2002 objective was to get an exhaustive picture of the structural features of the national agricultural system. In the same time, GAC 2002 provided the data necessary for compiling the statistical farm register, used as sampling frame for the agricultural sample surveys in the inter-census periods.

The GAC 2002 results were processed at national/development region/county/commune level and transmitted to Eurostat, according to the manual for data providers, through „Eurofarm” file, having a number of 4,484,893 agricultural holdings.

The FSS 2005 was a sample survey which was carried out in Romania in accordance with the EU requirements as well as with the national ones, based on a national/development region/county (NUTS 3) representative sample of approximately 8 % of the population existing in the statistical farm register. Thus, of the total 4,484,893 holdings a sample of 361,169 holdings was drawn with an error margin of less than 5 %

The FSS 2005 data have been processed and aggregated at national, development region and county level. The FSS 2005 results were published in two volumes both on paper, and in electronic format, CD-ROM and NIS site (a selection of tables). Concerning the Eurofarm file, records for 342,588 agricultural holdings were sent to Eurostat in the standard form, in accordance with the 2005 Eurostat manual for data supplier.

FSS-2007 was conducted in accordance with EU requirements (Council Regulation no. 571/88 on the organisation of Community surveys amended by Council Regulation no. 2467/96, Commission Regulation no. 1444/2002, Commission Regulation no. 2139/2004, Commission Regulation no. 204/2006, adopting and implementing the Council Regulation no. 571/88 and amending the Commission Decision no. 115/2000 regarding the Community surveys on the structure of agricultural holdings in 2005 și 2007).

For FSS-2007, out of the statistical farm register (REXA), established after the 2002 General Agriculture Census (GAC) and updated with FSS 2005 data, a sample of about 8% of the total agricultural holdings was drawn. Thus, a sample of 354,742 agricultural holdings resulted, of which 336,299 individual agricultural holdings and 18,443 agricultural holdings with legal status (legal units), which have been exhaustively surveyed. The sample was representative at national, development region and county level, with an error margin less than 5%.

The survey data were processed at national level, development region and county and were presented both on paper in a 2-volume publication and in electronic format (CD-Rom and NIS website-selection).

The “Eurofarm” file containing records for 339,890 holdings was sent to Eurostat in the standard format, according to the Eurostat manual for data providers.

GAC 2010 preparatory activities started in 2009 by establishing the legal framework, the working bodies and the actions planning. The next step was to develop the statistical tools for the census. A particularly important activity, carried out during the first half of year 2010 was the territorial sectorisation of the localities, in order to draw up a list of farms to be surveyed. The sectorisation was done on the basis of the information contained in the agricultural administrative register from local councils (commune halls) level. Before starting this operation, each commune hall had to update the agricultural register. Other very important preparatory activities were the recruitment and training of the personnel hired at NIS headquarter and at territorial offices, personnel for carrying out the field operation, printing and sending out the statistical tools at territorial level (questionnaires, guides for enumerators, handbook for enumerators etc.), the data processing design and providing the adequate information on the infrastructure required, along

with measures for GAC advertising. In establishing the census lists with the agricultural holdings for GAC and SAPM 2010 there were not taken into account any thresholds.

The institutions involved in GAC 2010 activities were: the National Institute of Statistics (NIS), the Ministry of Agriculture and Rural Development (MARD) and the Ministry of Administration and Interior (MAI).

For collecting data at GAC and SAPM 2010 it was used a single questionnaire and were surveyed all the characteristics from Regulation (EC) No 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, excepting the non-existing (NE) characteristics.

In the Romanian case, no NS characteristics were considered. As regards the NE characteristics, their list was finalised and submitted to Eurostat at the requested moment, before the actual conduct of GAC 2010 in Romania. When drawing up the list, several factors were taken into account such as: pedo-climatic characteristics of Romania (e.g. in the case of the “subtropical area fruit species”), information received from MARD specialists, as well as from other current statistical surveys (e.g. Crop production survey).

For GAC and SAPM 2010 organisation, we started with the January 2008 version of the Handbook on implementing the GAC and SAPM 2010 definitions, and were taken into account all the subsequent changes until Rev.8 of June 2010.

As far as the RD measures, landscape features and average irrigated area, the reference period was 2008-2010.

The data collection activity for GAC 2010 was carried out between 2nd of December 2010 – 31st of January 2011 and a number of 29641 enumerators, 4965 chief enumerators and 3186 coordinators were hired.

1. CONTACTS

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2. SURVEY METHODOLOGY

2.1 National legislation

GAC 2010 was conducted in accordance with EU requirements: Regulation (EC) No 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No 571/88 and Commission Regulation (EC) No 1200/2009 of 30 November 2009 implementing Regulation (EC) No 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards livestock unit coefficients and definitions of the characteristics.

Besides the above-mentioned EU legislation on the agricultural structural surveys the national legal frame for GAC 2010 was assured by the following legal acts:

- Law no. 153 from 11th of July 2008, regarding carrying out the GAC in Romania – providing the legal framework needed and establishing the working structures at central level (Central Commission and Central Technical Secretariat, with their related responsibilities), and the number of additional staff (the number of employees, by year, at central and territorial level);
- Government Decision no. 1370 of 18 November 2009 on the organisation and carrying out the GAC 2010 in Romania – established the working structures at territorial level and their responsibilities, approved the GAC 2010 budget, broken down by institution involved (National Institute of Statistics, Ministry of Agriculture and Rural Development, Ministry of Administration and Interior) and by year (2009-2012);
- Law no. 226/2009 on the organisation and functioning of official statistics in Romania;
- Government Decision no. 957/2005 on the organisation and functioning of the National Institute of Statistics.

At national level, the census preparation, organisation and coordination was conducted by the GAC 2010 Central Commission, according to Law no. 153 of 11 July 2008. The GAC 2010 Central Technical Secretariat was responsible for census preparation, coordination and monitoring.

In accordance with Law no. 153 of 11 July 2008, the aim of national surveys on agriculture is to provide statistical data for national policy-making in agriculture, in accordance with the statistical *acquis communautaire*, internationally comparable, required for the process of Romanian participation in the Common Agricultural Policy (CAP).

According to the same law, the individual data registered into the GAC 2010 questionnaires are confidential and are only used for statistical purposes.

The registration of the data on the questionnaires, for the individual agricultural holdings, was done by the enumerators, using face-to-face interview method.

The data collection for the agricultural holdings with legal status was achieved through self registration by the manager or other person, under the guidance of the chief enumerator.

According to the Government Decision no. 1370 of 18 November 2009, after validation and publication of GAC results, the questionnaires are destroyed, in accordance with National Archives Law no. 16/1996, as amended and supplemented.

2.2 Characteristics and reference period

The General Agricultural Census 2010 had as main objective data collection and obtaining information on the main characteristics of agricultural holdings, such as identifying the area of agricultural holdings and their legal status, use of agricultural land by type of administration,

utilized agricultural area, irrigations, livestock, agricultural machinery and equipment, persons performing agricultural activities, agricultural production methods, rural development etc.

Other objectives of GAC 2010 were:

- Highlighting the structural changes occurring after Romania became an EU member state, as well as from GAC 2002, regarding the utilized agricultural area, livestock, irrigations, farm machinery and equipment, rural development, agricultural labour input etc.
- Updating the Farm Register, setting the sample frame for all agricultural statistical sample surveys;
- Obtaining additional statistics on the agricultural production methods, in order to improve the quality of the agri-environmental indicators and for setting up and monitoring the agricultural policy and rural development;
- Obtaining comparable statistics on the structure of agricultural holdings for CAP purposes through: use of standard classifications of agricultural holdings, use of appropriate characteristics in order to observe the trends in the domain of agriculture.

In order to respond to the objectives of the census and of SAPM, the data collection questionnaire was divided into the following chapters:

1. General Information on the Agricultural Holding
2. Land Use
3. Information on Irrigations
4. The Landscape Features and Soil Conservation
5. Livestock
6. Grazing, Animal Housing and Manure
7. Agricultural Machinery and Equipment
8. Organic Farming
9. Rural Development
10. Labour Force in Agriculture
11. Other Gainful Activities
12. Other Information on the Farm Work Undertaken on the Holding
13. Distribution of the Agricultural Area of the Agricultural Holding
14. Other Information

The GAC 2010 questionnaire mainly included the characteristics required by Eurostat, but there were also characteristics surveyed only for national purposes.

These characteristics were surveyed as a result of requests from NIS. Thus, the characteristics contained in the chapter on “Agricultural machinery and equipment”, were introduced into the questionnaire to be used as a sample frame for the Farm Structure Survey 2013 (FSS 2013).

The sub-chapter "Own production sales", from chapter 12 “Other Information on the Farm Work Undertaken on the Agricultural Holding” was introduced, following a request of the Direction of Prices Statistics from NIS. Data from the mentioned chapter are necessary for updating the weights used for the calculation of the price indices of agricultural products in 2010 base.

The list of the characteristics surveyed through GAC 2010 and their definitions are in line with the Eurostat requirements, excepting certain characteristics unspecific for Romania or having small economic significance.

In this context, the non-existing characteristics, which were not included in the Romanian GAC 2010 are listed in the table hereunder:

Eurofarm code	Eurofarm name
A_3_2_3_9	Organic farming - citrus fruit
A_3_2_3_10	Organic farming - olives
B_1_6_3	Cotton
B_1_6_11	Other textile crops
B_4_1_1_2	Fruit species of subtropical climate zone
B_4_2	Citrus plantations
B_4_3	Olive plantations - total
B_4_3_1	Olive plantations - table olives
B_4_3_2	Olive plantations - oil production
B_4_4_4	Vineyards - raisins
B_4_7	Permanent crops under glass
M_8_1_2_14	Area irrigated in the previous 12 months: citrus plantations
M_8_1_2_15	Area irrigated in the previous 12 months: olive plantations

The Romanian General Agricultural Census 2010 was carried out between the 2nd of December 2010 – 31st of January 2011.

The reference time was: the 1st of December 2010, at 0:00 for:

- Livestock
- Organic farming - livestock sector
- Animal shelters

The reference periods were:

1. Crop year 2010 (30 September 2009-1 October 2010), for:
 - Land use
 - Information on irrigations
 - Soil conservation
 - Organic farming - crop sector
 - Grazing, animal housing and manure
 - Agricultural machinery and equipment
 - Labour force in agriculture
 - Other gainful activities
 - Own production sales
2. The last 3 years period for:
 - Average area actually irrigated
 - Landscape features
 - Rural development measures

2.3 Survey organisation

The institutions responsible for organizing and carrying out the Romanian GAC in 2010 were the National Institute of Statistics (NIS), the Ministry of Agriculture and Rural Development (MARD) and the Ministry of Administration and Interior (MAI).

Within the National Statistics Institute, the following departments were involved in census organisation and conduct:

- At central level of NIS: General Direction of Agricultural and Environment Statistics, General Direction of IT and Infrastructure of Statistics, Department of Budget and Accounting, Direction of Policies and Management of Human Resources, Direction for European Affairs and International Cooperation;
- At territorial level: all the 42 county statistical offices.

The main tasks of the National Institute of Statistics were:

- Preparing the draft budget of the census;
- Developing the methodology for census conduct and for the control survey;
- Hiring the additional staff for census organization and conduct;
- Training the staff involved in the field activities of the census;
- Developing rules for the territorial breakdown of localities into census sectors and sections;
- Monitoring organisational actions preceding the census (drawing up the list of the census units, sectorisation of the localities, organizing training sessions etc.);
- Collaboration with MARD in recruiting enumerators;
- Processing data collected in the field, for which:
 - additional personnel (operators and specialists) were hired
 - computers, printers, servers and all necessary electronic equipment were purchased;
 - data processing requirements were established;
 - data dissemination and data presentations were made.
- Managing the expenditures for the phone, mail, transports and data communication
- Collaborating with MARD and MAI in drafting the operating rules for the territorial commissions of the census

Within the General Direction of Agricultural and Environment Statistics (GDAES) the following activities were performed: drafting the legal framework, designing the statistical tools, monitoring the printing and distribution of statistical tools at territorial level, establishing of data processing requirements at local and central level, data validation, development of the control tables, data integrity analysis, designing tables for presenting GAC 2010 results, preparing the publications. The IT application for survey data processing was achieved by a specialised IT firm through subcontracting.

The tasks of the Ministry of Agriculture and Rural Development were the following:

- Recruiting census staff (enumerators, chief enumerators and coordinators) for carrying out field registration and for the control survey;
- Managing of funds necessary for paying the additional staff recruited for carrying out the census;
- Designing printing and distribution of the auxiliary census materials and of the census advertising materials;
- Ensuring the printing and distribution of the materials for enumerators identification;
- Providing reimbursement for the travel expenses of the staff to the training sessions and other services necessary for the census;
- Cooperating with NIS in developing the statistical tools for the census and in conducting the training sessions of the census staff
- Final data validation together with NIS

The main tasks of the Ministry of Administration and Interior were the following:

- Collaborating in setting up the territorial structures for the census;
- Providing space for the storage of census materials and for staff training;
- Collaborating with NIS in setting up the operating rules for territorial commissions and in recruiting the census staff.

2.4 Calendar (overview of work progress)

The table below presents the General Programme for Organising and Conducting the General Agricultural Census 2010, with all component activities.

Activities	Deadline/ Period	Responsible	Collaborators
I. ESTABLISHING THE LEGAL FRAMEWORK, THE WORKING STRUCTURES AND THE REQUIRED ACTIONS FOR GAC 2010			
Elaboration of draft legislation (Law, Government Decision)	2009	NIS, MARD	MI, MFP
Establishing the Central Commission of the Census (CCC) and of the Central Technical Secretariat (CTS)	10 days from publication the Law in the Official Gazette	President of the Commission	NIS, MAI, MARD
Establishing the Territorial Commissions of the Census (TCC)	11 days from publication the Government Decision in the Official Monitor	Prefectures / Municipalities	NIS, MARD, MAI
Establishing the Territorial Technical Secretariats (TTS)	5 days from establishing the territorial commissions	TCC	NIS, MARD, MAI
Establishing the General Program for Organising and Conducting GAC 2010	2009	CTS	
Establishing the functioning rules of the territorial working structures of the census	2009	CTS	TTS
II. DEVELOPING THE STATISTICAL TOOLS FOR CARRYING OUT THE CENSUS			
Design and implementation of the data questionnaire and of the provisional data form	March 2010	CTS	
Elaboration of the enumerator handbook, of the methodological guide and of the survey control handbook	March 2010	CTS	
Elaboration of the auxiliary materials	March 2010	CTS	
Elaboration of the localities nomenclature - SIRUTA	March 2010	CTS	
III. TERRITORIAL SECTORISATION OF THE LOCALITIES FOR THE CENSUS			
Lists with agricultural holdings			
- Developing the tools needed for the lists of agricultural holdings	March 2010	CTS	
- Training staff from municipalities, in establishing the lists of agricultural holdings	April 2010	TTS	Municipalities
- Drawing up the lists and submission the centralized forms to TTS, consulting the Agricultural Register	May 2010	Municipalities	MUCCC
- Centralising lists at county level and submitting them to CTS	June 2010	TTS	
- Centralising data at country level, establishing the sector size and the number of sectors at county level	June 2010	CTS	TTS
Elaborating the cartographic materials needed for the territorial sectorisation of the localities and its transmission to TTS for approval	April 2010	Municipalities	Prefectures / TCC
Territorial sectorisation of the localities			
- Establishing the instructions for sectorisation and transmitting them to the counties	May 2010	CTS	
- Training sessions at county level with municipality delegates on the instructions received from TTS	May 2010	TTS	CTS
- Establishing the territorial sectorisation of the localities and its transmission to TCC	June 2010	Municipalities	MUCCC
- Centralising the sectorisation papers and their transmission to TTS	June 2010	TTS	Municipalities

Activities	Deadline/ Period	Responsible	Collaborators
- Checking the papers from TTS, approving the number of sectors of the Census, by county (allocation of the number of enumerators)	June 2010	CTS	TCC, TTS
IV. STAFF RECRUITMENT FOR SURVEYING THE AGRICULTURAL HOLDINGS			
Establishing and sending out the instructions for recruiting the census staff	September 2010	CTS	
Recruiting the census staff	October 2010	Municipalities	MUCCC
Analysing and confirmation of census staff, based on materials received from municipalities. Sending a report to the CTS	October 2010	TCC, BCC	MUCCC
Report on completion the census staff recruitment, based on information from the TTS. Presenting it to CCC	October 2010	CTS	TCC, BCC
V. PRINTING THE STATISTICAL TOOL AND DISTRIBUTING IT IN THE TERRITORY			
Establishing the necessary materials of the census by municipality, Bucharest sector, city and municipality (questionnaires, enumerator handbook, methodological guide, nomenclatures, auxiliary materials). Communicating the requirements to CTS.	June 2010	TTS	CTS
Establishing the necessary materials of the census for each county	June 2010	CTS	
Preparing specifications for printing the statistical tools and auxiliary materials	June 2010	GDAES, DAI	CTS
Organising the auction and contracting the printing of the statistical tools	June 2010	GDAES, DAI	CTS
Printing the census materials and distributing them in the territory	August - September 2010	Typography	CTS, GDAES
Monitoring the distribution of the printed materials in the counties	August - September 2010	CTS	GDAES
VI. ESTABLISHING THE DATA PROCESSING REQUIREMENTS. PROVIDING THE INFRASTRUCTURE OF THE INFORMATION REQUIRED FOR CENSUS DATA PROCESSING			
Establishing data processing requirements for: - Agricultural holdings data - Preliminary results - Control survey data	April 2010	GDAES	DGITSI
Drafting the specifications for purchasing the required IT applications for processing the provisional results, the census data and the control survey	May 2010	DGITSI	GDAES
Organising the auction to acquire the IT applications, necessary for processing provisional results, the census data and the control survey	June 2010	DGITSI, DAI	GDAES
Contracting, purchasing and testing the IT applications	October 2010	DGITSI, DAI	GDAES
Drafting the specifications for purchasing IT infrastructure components, required to use the IT applications	June 2010	DGITSI	GDAES
Organizing the auction to acquire the IT infrastructure components, required to use the IT applications	July 2010	DGITSI, DAI	GDAES
Purchasing the IT infrastructure components, required to use the IT applications	July 2010	DGITSI	GDAES
Recruitment of additional staff for data inputting in the databases of the county statistical offices, using the IT application	November 2010	DGITSI	GDAES
Training the additional staff recruited to use the IT applications and IT infrastructure components purchased, for data input	January 2011	DGITSI	GDAES
VII. GAC ADVERTISING ACTIONS			
Drafting the advertising program	September 2010	CTS	MARD

Activities	Deadline/ Period	Responsible	Collaborators
Designing posters, calendars and other advertising materials	September 2010	CTS	MARD
Developing of works on the importance of the census and dissemination of advertisements in the media	October 2010	CTS	MARD
VIII. PREPARING AND SURVEYING THE AGRICULTURAL HOLDINGS			
Training regarding the main issues GAC carrying out, at central level, with TCC delegates, which in their turn will deliver trainings organised at each county level	October 2010	CTS	
Training, at each county level, with the participation of the Chairmen of TCC, enumerators, coordinators and managers of the legal units (or their representatives)	October 2010	TTS	CTS
Drawing up the report on the conduct of trainings, the special problems encountered and sending it to the CTS	October 2010	TTS	
Drawing up the report on the completion of training sessions for the staff and informing CCC	November 2010	CTS	TTS
Agricultural holdings surveying (data collection on the main questionnaire and on preliminary results form)	December 2010 - January 2011	MUCCC	CTS ,TTS
Monitoring at local, county and central level the data collection rate for agricultural holdings, according to the clarification set out by CTS	December 2010 - January 2011	MUCCC/ TCC/ TTS/ CTS/ BCC	
Checking and delivery the census folders (with the completed and/or unused questionnaires) and forms for provisional results	February 2011	Enumerators	Chief Enumerators
Checking the main questionnaires data and those of provisional data forms	February 2011	Chief Enumerators	Coordinators
Receiving census folders, by the coordinators, from the chief enumerators, checking the provisional data forms, at locality level and submission for approval and validation of provisional results by MUCCC	February 2011	Coordinators	
Handing over census folders with completed provisional data forms and data validation minutes to TCC.	February 2011	MUCCC	TTS
IX. CONDUCTING THE CONTROL SURVEY			
Recruiting and training the staff for conducting the Control Survey	December 2010	TTS	
Carrying out the Control Survey at agricultural holdings in the sample selected sectors	February 2011	Enumerators	MUCCC,TTS
Processing the Control Survey data and sending files with the results	March 2011	TTS	
Verification, validation and processing of Control Survey and compiling the report on its results	May 2011	CTS	TTS
X. PROCESSING AND DISEMINATION OF THE PROVISIONAL RESULTS OF GAC			
At county level			
- Inputting and processing the provisional data forms, checking them and solving any errors or inconsistencies	April 2011	TTS	MUCCC
- Data validation, drawing up the minutes and the explanatory report. Submission to NIS along with the provisional data files for centralisation purposes	May 2011	TTS	
At central level			
- Centralization and analysis of provisional results, the minutes and the explanatory reports	May 2011	CTS	TTS
- Validation and approval of the provisional results	May 2011	CTS	TTS
- Generating the set of tables with provisional data, for publication	May 2011	CTS	
- Presentation of the provisional results and submitting them for approval by CCC	June 2011	CTS	
- Disseminating and publishing the provisional results	June 2011	CCR	

Activities	Deadline/ Period	Responsible	Collaborators
XI. PROCESSING AND VALIDATING DATA FROM THE GENERAL AGRICULTURAL CENSUS AND FROM SURVEY ON AGRICULTURAL PRODUCTION METHOD (SAPM)			
At county level			
- Inputting and processing data from main questionnaires, carrying out the logical control, errors solving, logical validation, according to the established processing requirements	November 2011	TSO	DGITSI, DARD
- Monitoring the logical validation process, according to processing requirements, at county level	Monthly during March to November 2011	TSO	DARD
- Developing control tables for checking and analysing the data processed	November 2011	TSO	DARD
- Analysing and validating data enumerated at district level	November 2011	TSO	DARD
- Submission to NIS of the validated data files	December 2011	TSO	DARD
At central level			
- Monitoring the processing and logical validation data, according to the processing requirements, at county level	Monthly during March to November 2011	GDAES	TSO/DARD
- Receiving and centralising data sent by each county	December 2011	GDAES	TSO
- Carrying out the logical control and solving the errors	February 2012	GDAES	TSO,DGITSI
- Developing control tables for checking and analysing data processed at national level	February 2012	GDAES	TSO
- Developing automatic corrections resulting from analysis of centralised data	April 2012	GDAES	TSO
- The validation of GAC final results	May 2012	GDAES	MARD
- Analysing and validating SAPM final results	May 2012	GDAES	MARD
XII. DISSEMINATION AND PUBLICATION THE FINAL RESULTS OF GAC AND SAPM			
Dissemination the results for Eurostat			
- Preparing the "Eurofarm" data file	May 2012	GDAES	
- Implementing of Eurostat classification procedures for setting up the typology of agricultural holdings	May 2012	GDAES	
- Transmitting the "Eurofarm" file to Eurostat with the required data	June 2012	GDAES	
Establishing the editorial plan for publishing the final results of GAC and SAPM	May 2012	GDAES	
a) Volume 1 - " General Agriculture Census 2010, results at national level"	December 2012	GDAES	MARD
b) Volumes 2-5 (one volume for each macro-region) - "General data, by macro regions, development regions and counties"			
Statistical data on SAPM (1 volume)	January 2013	GDAES	MARD

NIS = National Institute of Statistics

MARD = Ministry of Agriculture and Rural Development

DARD = Direction for Agriculture and Rural Development

CCC = Central Commission of the Census

CTS = Central Technical Secretariat

TCC = Territorial Commissions of the Census

TTS = Territorial Technical Secretariat

GDAES = General Direction of Agricultural and Environment Statistics

DAI = Direction of Acquisitions and Investments

DGITSI = General Direction of IT and Statistical Infrastructure

MUCCC = Municipal, Urban and Communal Commission for Census

BCC = Bucharest Commission for Census

TSO = Territorial Statistical Offices

2.5 Population and frame

To determine the target population of GAC 2010, we used the agricultural administrative register (AAR), existent at each commune hall level (locality), managed by an agricultural agent.

The AAR represents an official document for primary keeping of data and information on population households and companies/ agricultural associations, on natural persons and/ or legal units that own or use agricultural areas and/ or livestock. The content of AAR is approved by law, for a five years period of time.

The register is maintained on paper and electronic format by the person named by the mayor (agricultural agent for example) and updated based on owners declarations. According to the law in force (Government Decision 1632/2009 and the Law 98/2009), the owners have the obligation to declare the information on their households and companies/ agricultural associations, on natural persons and/ or legal units, contained in this register, at some very specific deadlines.

For each population household from AAR there were registered the members of the household having identification elements (Personal Identification Number for the holder) and the following information: agricultural area in ownership, utilised agricultural area, arable land, permanent crops, pasture and meadows, owned livestock by main species, agricultural machinery and equipments.

In the countryside, all the population households and companies/ agricultural associations located in the commune area are registered in the AAR, while in urban areas only the population households with agricultural area and/ or livestock. Into AAR there are also registered the persons and/ or companies/ agricultural associations which have agricultural area within the commune and the residence in other locality.

In establishing the census list for GAC 2010 there were taken all the recordings (population households and companies/ agricultural associations) registered in the AAR 2009, which owned utilised agricultural area and/ or livestock.

The AAR 2009 has been updated throughout the country, before establishing the census list, as a result of a commune action of NIS and MAI.

To cover at least 98% of UAA and total livestock units, no physical thresholds were used for setting up the list with all the agricultural units from rural and urban areas.

In order to ensure the control of completeness of the census lists for GAC 2010 and also for ensuring their quality, these were checked and approved by the Local Commissions of the Census. Further, there were centralized at county level and approved by County Commissions of the Census, after there have been compared with other data sources.

The statistical unit or the basic unit for which data were collected in the General Agricultural Census 2010 was the entity corresponding to a recording in the AAR, updated with the situation in the field, during the data collection stage.

The setting up of agricultural holdings, in case some of them were located into more units registered in the census (situated in different localities) was achieved through the Personal Identification Number (PIN) for individual agricultural holdings and through the Unique Identification Code (UIC) for authorized natural persons, individual and family enterprises and agricultural holdings with legal personality. The setting up of an agricultural holding required the summing up of quantitative indicators within GAC questionnaire, with the same PIN or UIC and its location according to production importance (largest UAA and/or livestock) of the component units.

After setting up the agricultural holdings and establishing their location, all registrations that had not met the criteria (definition) of an agricultural holding were excluded, as they had: only unutilised agricultural area, or the UAA was only composed of kitchen garden (less or equal to 15 ares) and owned a small livestock (less than 10 poultries).

The agricultural holdings resulted after the above mentioned setting up procedure, were in line with the EU definition of the agricultural holding, in accordance with articles 2 and 3 of Regulation (EC) No 1166 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods and consequently there were no reasons for the comparability with the previous structural surveys (censuses) to be affected.

The agricultural holding is a single unit, both technically and economically, which has a single management and which undertakes agricultural activities, either as a main or as a secondary activity.

Single unit, both technically and economically, means the commonly use of labour force and of the production means (fields, agricultural machinery etc.).

The single management of the agricultural holding means that there is a person or a group of persons with legal and economic responsibility.

The above mentioned agricultural activities are as follows:

- Growing of non-perennial crops
- Growing of perennial crops
- Plant propagation
- Animal production
- Mixed farming
- Keeping farmland in good agricultural and environmental conditions

Special cases:

a) If an agricultural area of an agricultural holding is transferred to the successor (heir), the former:

- is included in the successor's agricultural holding, if there is an agricultural holding and it is run by the successor, using own labour force and production means
- represents a new agricultural holding, if the successor hasn't got an agricultural holding and runs and uses the respective agricultural holding, regardless of the parent's agricultural holding
- stays with the parent's agricultural holding if it continues to have the same management and the respective farming area is worked with the same labour force and production means

b) Two or more agricultural holdings put their resources together for agricultural activities, but they have separate managements; in this case, the agricultural holdings remain independent units (orchards, herds, dairies etc.)

c) The following units are considered agricultural holdings only if they accomplish all the defining criteria of an agricultural holding:

- stock farms of bulls, boars, rams, goats, horse herds and incubators
- annexes of the research institutes, sanatoria, religious communities and schools
- agricultural sectors that are part of the industrial units
- common land consisting of a pasture, horticultural land or other used agricultural area, on the condition that the respective land is managed as an agricultural holding by the authorized local administration (e.g. commune halls). This category does not include the common land share-farmed or leased

- agricultural holdings that keep the land in good agricultural and environmental conditions, as their unique activity

d) The agricultural holding stays independent, regardless the location of the agricultural areas or of livestock, if it has a single management and uses the same labour force and farming machinery and equipment for the whole agricultural holding

e) The following categories of units are not considered agricultural holdings unless they have agriculture activities:

- stables for race, saddle and gallop horses (i.e. the land used for training the race horses), if it does not breed them

- markets, slaughter houses (animal breeding excluded)
- hunting, forestry and forestry exploitation
- fishery

f) The agricultural units that had only unutilised agricultural area have been surveyed in order to provide the unutilised agricultural area at national level, but they were not considered agricultural holdings.

g) The households that did not exceed a minimum threshold were not agricultural holdings and, consequently, they were not registered: they had as utilised agricultural area only the kitchen garden (an area equal or smaller than 15 ares) and grew only few poultry (less than 10) for own consumption.

h) If the household had only a big animal (cattle, swine, sheep or goat) or families of bees, it was considered agricultural holding.

Location of the agricultural holding

The agricultural holding was located where most of the farming activities or all the farming activities were performed.

The location of the agricultural holding was made with due observance of the hierarchical order mentioned below, according to:

a) Most important plot

In case the plots are located at a distance one from another or are dispersed in several regions (places), the most important plot (size) is taken into account. The same thing is true for the agricultural holdings that have land areas in several regions. Such an agricultural holding is considered as single unit, as long as it is an independent unit both technically and economically.

The most important agricultural plot is decided according the following criteria:

- the production yield on arable land
- permanent crops (orchards, vineyards)
- natural meadows and pastures

The size of the plot can be the simplest indicator of its importance since the economic value of the plot can change from one year to another, depending on the crop and the production.

b) The place where most of the farming activities of the agricultural holding take place

It can be an agricultural construction, that is the biggest construction used for the livestock / other buildings or constructions used for the agricultural production (e.g. greenhouses).

c) The residence of the head of the agricultural holding

The residence of the head of the agricultural holding can be considered a reference place only when it is located at less than 5 km, in a straight line, from the place where most of the farming activities take place.

2.6 Survey design

The agricultural holdings were exhaustively surveyed, both in the GAC 2010, and also in the SAPM 2010. In order to assure the territorial sectorisation of the localities, the administrative agricultural registry, kept and administrated by the commune halls at the locality level was used. In this registry are registered all agricultural land owners and/or animal holders in the locality area, both legal units and individual agricultural holdings.

In GAC 2010 were surveyed all the units registered in the agricultural register, within each locality. The total number of completed GAC 2010 questionnaires was 5,007,754. The agricultural holdings were constituted through joining the registrations from the questionnaires, based on PIN/ UIC, for the individual agricultural holdings and on UIC, for the legal units.

After this phase and after removing records which were not compliant with the census (for example: questionnaires completed only with unused agricultural area), a number of 3,859,043 agricultural holdings resulted.

2.7 Sampling, data collection and data entry

2.7.1 Drawing the sample –for SAPM and/or OGA, if applicable

The General Agricultural Census and the Survey on Agricultural Production Methods – 2010 were carried out exhaustively, so no sample drawing was necessary.

2.7.2 Data collection and data entry

The data collection method for GAC and SAPM 2010 was the face-to-face interview with the holding head or an adult member of it, for agricultural holdings without legal personality and by self registration, under the guidance of a chief enumerator, for the legal units.

Thus, the filling in of the questionnaires for the individual agricultural holdings was performed by trained enumerators, having received in advance a specification regarding the interviewing technique. All the matters related to filling in the questionnaires were specified in detail in the “Enumerator Handbook” and in the Methodological Guide.

All the information recorded into the GAC and SAPM 2010 questionnaires were obtained exclusively by using the methods described above, and no administrative sources were used for any characteristics.

For the benefit of the public at large and of the statistical community in the narrow sense, a Call Centre for GAC 2010 (CCGAC 2010) was established at NIS. This provided a fast, reliable and convenient access to the information about GAC 2010, both during the census and Control Survey data collection, and during the monitoring of data processing. For this purpose, a number of 25 employees (including a coordinator, 6 experts and 18 operators) were involved. They ensured the functioning of CCGAC 2010, 7 days of the week.

The main objectives of CCGAC 2010 were to facilitate the contact with the citizens and the staff involved in GAC 2010 activities (data collection and data processing) and reducing the time of response in solving the raised problems.

The data entry was done decentralised, at the level of the territorial statistical offices (42 offices). For this activity, a number of 450 computer operators were hired.

The GAC 2010 data for preliminary results, recorded on the first page of GAC 2010 questionnaire, have been scanned.

All the other data in the GAC 2010 questionnaire (both for census and SAPM) have been entered by the computer operator, through typing.

2.7.3 Use of administrative data sources

All the information recorded on the GAC and SAPM 2010 questionnaires was exclusively obtained by using the methods described at point 2.7.2, and no administrative sources were used for any characteristics.

2.8 Specific topics

2.8.1 Common Land

In the Commission Regulation (EC) No 1200/2009, of 30 November 2009, implementing Regulation (EC) No 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards livestock unit coefficients and definitions of the characteristics, the common land is defined as "the utilised agricultural area used by the agricultural holding but not belonging directly to it, i.e. on which common rights apply. The choice of implementation method to cover this common land is a matter for the Member State"(Annex II 1.03.01).

In Romania, the common land represents the area of pastures and meadows in the administration of local councils (commune halls) and used in different forms: rental, lease, or against a fee.

In the Farm Structure Survey 2007, the common land was registered as an agricultural holding having the utilised agricultural area, registered and administered by local councils, even if it was used by other agricultural holdings, in order to avoid double counting.

For the GAC 2010, the common land was recorded using the same principles as for FSS 2007. Thus, special agricultural holdings for the local councils were set up and the whole area with pasture and meadows used in common by different agricultural holdings within the locality was registered for these holdings. For the common land we used the same questionnaire as for all the GAC and SAPM 2010 variables.

Taking into account these aspects, the total number of agricultural holdings with common land was of **2651** and the total area with pasture and meadows recorded on the GAC 2010 questionnaires, for the local councils and indentified as common land was of **1,497,763.92 ha**.

Statistics regarding the common land by type of land are presented in the table hereunder:

Variable	Agricultural holdings (number)	Area (ha)
Pastures and meadows (excluding rough grazing)	2253	1,178,103.62
Rough grazing	449	135,490.37
Pastures and meadows no longer used for production purposes and eligible for the payment of subsidies	439	184,169.93
COMMON LAND (TOTAL PASTURES AND MEADOWS)	2651	1,497,763.92

No peculiar problems were encountered when were collecting data on common land, its registration being made according to the Rev.8 version of the Handbook on implementing the FSS and SAPM 2010 definitions. For the future farm structure surveys we envisage to use the same method.

2.8.2 Geographical reference of the holding

The location of the agricultural holding is defined in Article 2 (e) of Regulation (EC) No 1166/2008 of the European Parliament and of the Council: *“Location of the holding means the latitude and longitude coordinates within an arc of 5 minutes that avoid the direct identification of an individual holding. If a latitude and longitude location contains only one agricultural holding, then this holding shall be attributed to a neighbouring location, which contains at least one other agricultural holding.”*

The methodology for geographical referencing of the agricultural holding was developed in Romania through the Multi-Beneficiary Statistical Cooperation Programme: *“Grant agreement between European Community and NIS Romania”*, under contract ESTAT N°: 19100.2007.001-2007.609.

NIS has a nomenclature of localities, included at NUTS 5 level (called SIRUTA). This nomenclature was used by each enumerator along the data collection stage to put in the locality code on the questionnaire. Later on, the NUTS 5 nomenclature was used in the registration and checking process by the chief enumerators and the coordinators, as well as a validation rule within the data entry process. Then, to each locality in the NUTS5 nomenclature were added geo-coordinates (latitude and longitude).

The IT application for the geo-referencing the agricultural holding was conceived in order to set up the linkage between the database of Territorial Administrative Units (TAU) centroids and the GAC 2010 database, using SIRUTA code (code of locality on NUTS 5 level).

In order to set up this linkage, an “operational” database was considered.

The operational database for the geo-reference was drawn up for two purposes:

- Allocating a pair of geographical coordinates to each agricultural holding included in the GAC 2010 database;
- Data queries and spatial analyses for national statistical purposes.

The operational database has an identical structure with the database of the digital plan of TAU and the census database, containing at least the tables for geo-referencing.

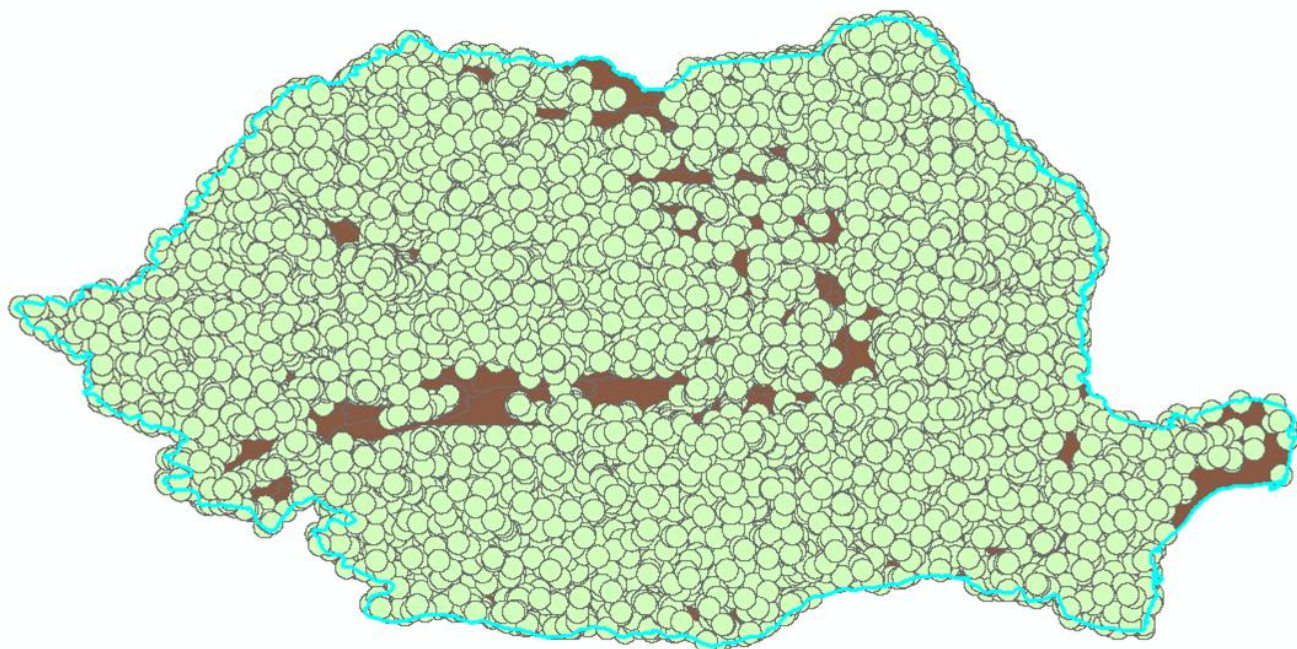
The master database contains, in an identical structure with the operational database, at least the tables where are described the fields for recording the Eurostat required micro data, regarding agricultural holdings, including geo-referencing data. The fields for expressing the latitude and longitude of the location of the agricultural holding were included in degrees and minutes.

The method was developed around the vector digital plan. By this proceeding, all the agricultural holdings enumerated, situated on the territory of a village (NUTS 5), got the same geographical reference. This fact could not be considered as an impediment as long as the precision of the localization is assured and the confidentiality of the statistical data is strengthened.

Taking into account all the above, there resulted the following conclusions:

- The data are exhaustive and compatible with all the geographical information management systems;
- Through the single registration codes of the locality (territorial codes), one can query the database resulted from the GAC 2010 and could automatically locate the agricultural holding, as well as its geo-referencing at locality level (NUTS 5);
- Romania's total surface land area is of 238,391 km². There were 13,587 localities (centroids). Therefore, the average area of a centroid is 17.43 km², i.e. 1743 ha.
- The maximum permissible error is 5x5', which in Romania's case means approx. 9.25km x 6.66km = 61,60 km, i.e. 6160 ha. In this case, a complete coverage of Romania's territory would require 3870 points (centroids), which leads to an accuracy 3.5 times more in the 5' interval;
- Our approximation is higher because the maximum deviation in our case is smaller than the maximum accepted and mentioned in Regulation 1166/2008.
- The geographic co-ordinates can be easily converted into any other system of reference required;
- The coordinates of the localities centroid are all inside the polygons, essentially for GIS data processing;
- The reviewing of the agricultural holding coordinates becomes very simple, actually no additional activity has to be done in the field. After loading the GAC 2010 data, the agricultural holdings can be automatically assigned the geo-referencing (latitude and longitude) of the concerned localities through the territorial codes (SIRUTA).

Approximately 1/3 of Romania's surface is represented by mountainous area covered with forests or with protected natural areas (parks, natural reservations, e.g. Danube Delta). This is emphasised by the Romanian uncovered land in the picture bellow, after applying the 5' threshold.



2.8.3 Volume of water used for irrigation

The volume of water for irrigation was expressed in cubic metres, and it refers to the amount of water used by the agriculture holding in the crop year 2009 - 2010, regardless of the source of water and / or method of irrigation used.

The methodology of estimating the volume of water for irrigation was developed in Romania through the Grant: "The Volume of Water Used in Irrigation" and was carried out for each crop by:

- Weather conditions of the crop year;
- Agricultural and soil conditions of farm (heavy textured soils, medium or mild);
- Water requirements of the crop;
- Source of water;
- Number of waterings

The general formula for estimating of the irrigation water volume, by crop and by agricultural holding is as follows:

"Volume of water" = "Irrigated area" (in hectares) x "Volume of water used for a watering" (expressed in cubic metres per hectares) x "Number of waterings".

The estimated volume of water for irrigation by agricultural holding, is calculated by summing up the water volumes used for each irrigated crop. We mention that to estimate the water volume used for irrigation, the water volumes used for the crops under glass and protective cover, as well as for the kitchen gardens, were not taken into account (according to the provisions of the Handbook on implementing the FSS and SAPM definitions – rev.5).

In estimating the volume of water used for irrigation, the following information was considered:

Crop	Average Number of Waterings	Average Volume of Water Used for a Watering (mc/ ha)
Grain cereals	1 - 2	250 - 500
Maize	2 - 3	300 - 500
Rice	flooding	4500 - 8500
Dried pulses	1 (in exceptional circumstances)	250 - 300
Potatoes	2 - 5	350 - 600
Sugar beet	2 - 3	250 - 400
Rape	1 (in exceptional circumstances)	200 - 300
Sunflower	2 - 3	250 - 400
Flex and hemp for fibre	1 (in exceptional circumstances)	200 - 300
Vegetables, melons and strawberries	2 - 7	250 - 500
Pastures and meadows, annual for hay and green weight	2 - 6	250 - 500
Fruit plantations and shrubs	1 - 5	400 - 500
Vineyards	1 - 3	350 - 500
Other crops in arable land	2 - 6	250 - 500

According to the results of the project and to the specific weather conditions of the reference period, there were estimated the following average volumes of water used, depending on the crop:

Crop	Average Volume of Water Used (mc/ ha)
Grain cereals	450
Maize	600
Rice	6500
Dried pulses	250
Potatoes	600
Sugar beet	375
Rape	200
Sunflower	375
Flex and hemp for fibre	-
Vegetables, melons and strawberries	800
Pastures and meadows, annual for hay and green weight	250
Fruit plantations and shrubs	400
Vineyards	350
Other crops in arable land	375

2.8.4 Other issues

In the period preceding the census and also during data collection for GAC and SAPM 2010, there were performed actions for promoting the census. These actions consisted of:

- advertising on TV programs, dedicated to farmers;
- promote through NIS and MARD site (importance, aim, statistical tools, legal frame etc)
- posters in each locality, showing the importance of GAC and SAPM 2010;
- distribution of attractive advertising materials (calendars, pens etc.) printed with the logo of GAC and SAPM 2010;
- discussions between agricultural experts involved in the GAC and SAPM 2010 and farmers, in order to promote the importance of GAC and SAPM 2010.
- creating a Web page: <http://www.recensamantagricol2010.ro>

The institution responsible for promoting the actions for the GAC and SAPM 2010 was the Ministry of Agriculture and Rural Development.

2.9 Response-burden policy

According to Law no. 153 from 11th of July 2008, regarding carrying out the Romanian GAC, Article 7, paragraph (1) provides that natural persons have the obligation to provide accurate and complete data to enumerators, and in paragraph (2) provides that legal units have the obligation to register on the questionnaire, accurate and complete data, under the guidance of chief enumerators / coordinators.

According to Government Decision no. 1370 of 18 November 2009 on the organisation and conduct of the Romanian GAC, Article 13 paragraph (1), in order to avoid non-responses, the following acts are contraventions:

a) obstructing, in any way whatsoever, the people involved in the GAC and SAPM 2010, in carrying out data recording and control for these two statistical surveys;

b) refusing to supply the information specified on the GAC and SAPM 2010 questionnaire;

c) providing incorrect or incomplete data and information;

d) failure to comply with the legal provisions and instructions on how to register and process the data;

e) failure to comply with the legal provisions for keeping the confidentiality of personal data declared and recorded on the GAC and SAPM 2010 questionnaire;

f) refusing to complete and deliver the GAC and SAPM 2010 questionnaires to chief enumerators or coordinators by the agricultural holdings for whom the self-registration is provided;

g) using the results obtained for other than statistical purposes;

The following details about the interviewing techniques applied by the census enumerator:

- The duty to specify the official position of the census enumerator, by presenting the badge every time an individual agricultural holding is visited;
- Interviewing a competent person within the individual agricultural holding, preferably the head of the holding, or another adult, who has full mental capacity;
- Avoiding interviewing in front of people who don't belong to the agricultural holding, explaining that the information is confidential and will be used only for statistical purposes.
- Providing the interviewed person a blank questionnaire, to give him the possibility to follow the questions more easily. After completing the data, the blank questionnaire was given back;

- To obtain accurate and honest answers, the questions were articulated and addressed politely;
- For questions with multiple possible answers, a complete list of these was presented to the person interviewed, in order to choose the correct version;
- The respondent was not interrupted before he/she finished responding, even if hesitant (this hesitation may be due to the fact that respondent seeks to remember different aspects of the information requested);
- Responses were registered as provided by the respondent;
- Requesting the signature of the person interviewed on the completed questionnaire.

In addition to those specified, other measures were taken, such as sending written addresses to the agricultural holdings to be surveyed, after being notified about the conduct of GAC and SAPM 2010 in Romania and the obligation to provide data for those statistical surveys.

There were also cases where no one in the agricultural holding could be contacted at the first visit of the enumerator. In these situations, the enumerator drew up a written notice on the importance and the purpose of GAC and SAPM 2010 and established a date and time when he will be back in order to complete the GAC and SAPM 2010 questionnaire.

In the latter case, if this solution did not work either, the required information was provided by the agricultural register administrator or by any other person responsible, able to provide accurate data about the agricultural holding concerned.

3. ACCURACY AND RELIABILITY OF THE DATA COLLECTED

3.1 Data processing, analysis and estimation

3.1.1 Estimation and sampling errors – for SAPM and/or OGA, if applicable

Not applicable.

3.1.2 Non sampling errors

In Romania's case, all GAC and SAPM 2010 variables were exhaustively surveyed. Non-responses were not allowed and several follow-up interviews were conducted for a complete and correct filling in of the questionnaires and, in extreme cases, based on the agricultural administrative register data, the agricultural agent provided the required filling-in information so that all non-responses were ousted since data collection stage.

Moreover, the questionnaires were re-checked by the chief enumerators, by the coordinators and the representatives of all organisational structures at local level (territorial technical secretariats) until finally reaching the territorial statistical offices.

Regarding the non sampling errors, most of them were generally avoided since the territorial sectorisation phase (drawing up the lists of the units to be surveyed). Also, two weeks before the data collection operation, a preliminary visit was made to identify the units that were subject to GAC and SAPM 2010 and for updating the list of these units.

Given the above, as well as those specified in section 2.9, we can conclude that the non-response rate of the surveyed units was 0.

However, there were some cases where have been applied adjustment or imputation methods to certain variables. The most frequent situations have been detected in agricultural holdings for which the number of working days (8 hours per day equivalent) exceeded 245 days, or for the agricultural holdings when certain information about the labour force in agriculture was missing on the questionnaire (gender, age etc.).

The coverage errors (under-coverage, over-coverage, misclassification, contact errors etc.) were very few and those that existed were detected and corrected by enumerators together with the chief enumerators and coordinators, with the support of Territorial Technical Secretariats. This operation was done both during the above mentioned preliminary visits and also over the data collection period.

3.1.3 Methods for handling missing or incorrect data items

After entering the GAC and SAPM 2010 data and after applying all the correlations and solving all the errors occurred for each questionnaire, at local level, these data were reviewed by the Central Technical Secretariat, at an aggregate level, based on tables specially designed for each indicator, both at national and at county level, in order to find out possible inconsistencies.

Depending on the type of errors found, they were solved by individual corrections at the local level, but also through automatic corrections, applied at the central level.

Following the error analysis by our methodological team, we asked the IT company who provided the data input and processing application to make the necessary automatic corrections.

There were detected cases of holdings for whom the number of working days (in equivalent 8 hours per day) exceeded 245 days, i.e. the maximum allowed for Romania. Automatic corrections were performed on such cases by changing the number of days to maximum 245.

At the same time, imputations were made when certain information was missing on the questionnaire about the labour force in agriculture (gender, age etc.). In the case of such agricultural holdings, we first checked the information that could provide useful values and data (name and surname, personal ID code etc.). If such information was missing, we used imputation to complete the missing data, taking into consideration the weight of the answers on the questionnaires containing a full interview.

For every situation mentioned above, the weight of the holdings submitted to correction methods was less than 2% of total holdings.

The process of checking the data correctness was repeated every time a correction was made in the GAC 2010 database, until there were no such errors in the database anymore.

3.1.4 Control of the data

In accordance with Government Decision no. 1370 of 18 November 2009 on the organization and conduct of the Romanian GAC 2010 and with the General Programme for Organising and Conducting GAC 2010, approved by the GAC 2010 Central Commission, after finishing the data collection for GAC and SAPM 2010, in February 2011 the Control Survey for GAC 2010 was carried out, on a representative sample at national level.

The Control Survey objective was to check the quality and coverage of information gathered from GAC 2010, on 2 December 2010 - January 31, 2011, for the main indicators, namely: General Information on the Agricultural Holding, Land Use, Livestock by main species, Agriculture Labour Input, Other Information.

By comparing the entries from the GAC 2010 and the Control Survey, one could establish the nature of errors and accuracy of data and information recorded in the questionnaires of the census such as: the frequency and size of observation errors, their nature - random and / or systematic, causes that generated different types of errors: the level of training of enumerators, the quality of methodological and organizational materials, degree of confidence in the census results.

Through the control survey we checked both the quality and the coverage of the GAC 2010 data. As only insignificant errors were detected, we considered that the correction of data from

the basic questionnaire (used for data collection) was unnecessary. For the CS indicators there were used DSM validation rules.

The Control Survey was conducted in all counties (rural and urban area), where 140 out of 29,641 sectors were selected, allocated proportionally within each of the 42 counties.

As concerns the number of holdings selected for the control survey, there were 7002 holdings that ensured the representativity at national level. These holdings were extracted from the sample frame in two stages:

- 1st stage: sector selecting – were extracted 140 sectors out of the total 29641. Given the fact that each sector has, on average, an estimated 180 to 200 units, according to the territorial sectorisation, no matter of their size, it resulted a number of about 28,000 such units.

- 2nd stage: extracting those 7002 holdings of the total 28000, using a ¼ step (25%).

There were also selected three legal units in each county.

According to the sampling system, a number of 140 enumerators participated in field operations.

For the proportions, the estimator was: $P_i = \sum_{h=1}^H W_h \frac{1}{n_h} \sum_{j=1}^{N_h} P_{h,i,j}$, where :

P_i - proportion of units with characteristic “i”.

W_h - weight of stratum “h”.

$P_{h,i,j}$ - proportion of units with characteristic “i”, from group “j”, stratum “h”

An estimator of variance of total variation for the characteristic “i”:

$$V[t(\nabla_{12}y_i)] = \sum_{h=1}^H \sum_{l=1}^{N_h} \sum_{k=1}^{M_{h,j}} \left(\frac{1}{\pi_{h,l,k}} - 1 \right) \cdot (\nabla_{12}y_{h,l,i,k})^2$$

Coefficient of variation: $cv_i = \frac{\sqrt{V[t(\nabla_{12}y_i)]}}{t(\nabla_{12}y_i)} \cdot 100.$

The results of the Control Survey were structured as follows:

I. Clasification of the errors

The results are presented, by type of error:

- Omissions in registration
- Misinterpretation of the indicators or ignorance of the exact recording methodology
- Mistakes in units conversion (ha - ares etc.)
- Inaccurate registration and / or incomplete of responses in the GAC 2010 questionnaire
- Information provided by someone, other than the head of the individual agricultural holding, who did not know the real situation
- Entry of incorrect codes

II. Variation of main indicators by legal status of agricultural holdings

The following variations were obtained after comparing the GAC 2010 data with those in the Control Survey:

a) Legal units

	%
Permanent crops	0.01
Unutilised agricultural area	0.03
Number of persons	1.29
Number of worked days	0.23

b) Individual agricultural holdings

	%
Arable land	0.04
Wheat common and spelt	0.98
Maize	0.20
Kitchen gardens	0.55
Pasture and meadows	0.16
Permanent crops	0.37
Utilised agricultural area	0.12
Unutilised agricultural area	0.64
Total area	3.44
Bovines	0.22
Sheep	0.45
Goats	0.42
Pigs	1.85
Poultry	0.42
Horses	1.66
Beehives	0.82
Number of persons	0.05
Number of worked days	1.63

III. The visiting level of the agricultural holdings

The respondents, within each agricultural holding selected for the Control Survey, were questioned whether the unit was visited by the GAC 2010 enumerator, in the case of individual agricultural holdings.

The proportion of those who responded positively to this question, represented here, the visiting level of the agricultural holding. The visiting level for the individual agricultural holdings was 100%. The level of self register of legal units was also 100%.

In order to establish the error level, the following formula was applied:

$$\varepsilon = z_{1-\alpha/2} \sqrt{V(P)}$$

where:

ε = error

$z_{1-\alpha/2}$ = quintile of rank “ $1 - \alpha / 2$ ” from standard normal allocation, where $\alpha = 0,95$

$V(P)$ = estimator variance

Regarding the visiting level of the agricultural holdings, the obtained error was 0%.

3.2 Evaluation of results

The evaluation of the results was done by comparing data, at macro level from GAC 2010 with the data from other agricultural surveys, as follows:

a) Comparing the final results of GAC 2010 with the data obtained from the Crop Production Survey 2010 (CPS 2010):

	GAC 2010	CPS 2010	Difference	
	-ha-	-ha-	-ha-	-%-
UAA (A_3_1)	13,306,128	14,156,479	-850,351	-6.0
Arable land	8,306,416	9,146,457	-840,041	-9.2
Permanent grassland (B_3)	4,506,253	4,546,684	-40,431	-0.9
Permanent crops (B_4)	311,433	319,475	-8,041	-2.5

By analyzing the data obtained from GAC 2010 and from CPS 2010, very close results were observed, the differences between GAC 2010 data and those from CPS being small, below 10% for all categories of the utilised agricultural area.

The UAA-related difference is due to the fact that the CPS methodology does not provide the separate registration of the unutilised agricultural area, which is registered as fallow land. If the unutilised area would be excluded from the total UAA registered in CPS, there would result a difference of 1.9%. Also, we think that in the CPS case, the permissible error should be taken into account as it is a sample survey.

b) Comparing the final results of GAC 2010 with the data obtained from the Livestock Survey 2010 (LS 2010), the following results were obtained:

	GAC 2010	LS 2010	Difference	
	-heads-	-heads-	-heads-	-%-
Cattle (C_2)	1,989,794	2,001,105	-11,311	-0.6
Pigs (C_4)	5,345,051	5,428,272	-83,221	-1.5
Sheep (C_3_1)	8,412,171	8,417,437	-5,266	-0.1
Goats (C_3_2)	1,240,858	1,240,786	72	0
Poultry (C_5)	79,190,590	80,844,859	-1,654,269	-2.0

The data on the main livestock species obtained from GAC 2010, compared with those obtained from the LS 2010, certified insignificant differences between these two statistical surveys.

The relative small differences, under 10% between GAC 2010 data and the corresponding one from the annual statistical agriculture surveys, both in the crop and the livestock sector, is another factor which proves the quality of GAC 2010 data.

As for the comparison with other administrative data, IACS contains registrations with holdings of more than 1 ha, but only those that have applied for subsidies.

	GAC 2010 (UAA >=1ha)	IACS	Difference	
	-ha-	-ha-	-ha-	-%-
UAA (A_3_1)	12,598,424	9,587,904	3,010,520	31.4

The cadastre does not have any information on UAA solely, containing data only on the total area.

Into the table below it can be seen the situation regarding the number of units involved in GAC and SAPM 2010 activities:

	Survey
	FSS and SAPM
Initial list of units	5410271
Initial sample	NA
Number of holdings with completed questionnaires (incl. Eventual imputed questionnaires):	5007754
Number of units under the threshold ¹ applied *	402517
Holdings with ceased activities:	771971
- (If information is available) of which definitely ceased, i.e. the land is abandoned	NA
- (If information is available) of which holdings with change of the manager	NA
Unit Non-response:	NA
- Refusals – not corrected	NA
- Refusals – corrected (imputed)	NA
Number of records transferred to Eurostat *	3859043
Common land units (A_2_1)	2651

¹ No thresholds were used, but after setting up the agricultural holdings and establishing their location, all registrations that had not met the criteria (definition) of an agricultural holding were excluded (units having used only the kitchen gardens and those having a few fowls - less than 10 - for own consumption, as well as those having only non-utilised agricultural area).

* Units that do not meet the national threshold criteria (in some countries there could be completed questionnaires for them, in others – not). In case it's impossible to provide this information, a short explanation about the reasons to be provided.

**The number of holding with completed questionnaires for FSS 2010 may be different from the number of records transferred to Eurostat in case that very low national threshold is applied.

Major trends of FSS 2007 to FSS 2010.

The comparison between the main indicators of FSS 2007 and GAC 2010 is presented in the table below:

	From FSS 2007	From FSS 2010	Difference +/-	Difference in %
Number of holdings;	3,931,350	3,859,043	-72,307	-1.84
UAA (A_3_1), ha;	13,753,046.49	13,306,128.33	-446,918.16	-3.25
Arable land, ha;	8,691,343.47	8,306,416.49	-384,926.98	-4.43
Permanent grassland (B_3), ha;	4,540,135.09	4,506,253.20	-33,881.89	-0.75
Permanent crops (B_4), ha;	343,623.35	311,433.27	-32,190.08	-9.37
Wooded area (B_5_2), ha;	1,072,657.18	1,493,818.06	421,160.88	39.26 ¹⁾
Unutilised Agricultural area (B_5_1), ha;	165,406.37	576,737.66	411,331.29	248.68 ²⁾
Fallow land (B_1_12_1 + B_1_12_2), ha;	846,877.37	952,515.36	105,637.99	12.47 ³⁾
Livestock in LSU;	6,041,722.207	5,445,521.399	-596,200.808	-9.86
Cattle (C_2), head;	2,733,557	1,989,794	-743,763	-27.21 ⁴⁾
Family Labour force - in persons;	6,395,804	7,051,296	655,492	10.25 ⁵⁾
Family Labour force - in AWU;	1,993,928	1,428,745	-565,183	-28.35 ⁶⁾
Non family labour force - in persons;	71,767	105,633	33,866	47.19 ⁷⁾
Non family labour force - in AWU	211,356	181,550	-29,806	-14.10 ⁸⁾

Analysing the differences between the main indicators drawn from GAC 2010 and FSS 2007, some differences were noticed. When this difference was higher than 10% we have commented herewith on these special cases.

¹⁾First, in terms of wooded area, the higher value registered at GAC 2010 was due to restitution of forests to individual persons.

^{2),3)}The highest difference between the values from GAC 2010 and FSS 2007 was recorded as Unutilised Agricultural Area. The higher value registered in GAC 2010 was due to migration of young and middle age people from the countryside to other more developed EU countries, leaving the farmland abandoned. Another important factor leading to the increasing of the Unutilised Agricultural Area were relatively high costs of agricultural inputs. In the table mentioned, the non-utilised agricultural area is the one related to the holding and it only represents part of the total area of the holding. The holdings were not entirely abandoned but rather for economic reasons and due to the relatively high costs, just part of the agricultural area was left unused.

⁴⁾Many individual agricultural holdings replaced cattle with goats breeding, due to the benefits obtained with lower maintenance costs.

^{5), 6), 7), 8)}Significant differences between GAC 2010 and FSS 2007 were reported on labour force. Due to financial and economic problems, lots of people lost their jobs in the non-agricultural sectors, came back to the rural zones and worked in agricultural holdings. This led to an increase in labour force, but on the other hand to a decrease in the worked days, related to FSS 2007, because most people didn't work full-time.

3.3 Data Revision Policy

Not revisions were made for GAC and SAPM 2010.

4. ACCESSIBILITY AND PUNCTUALITY

4.1 Publications

The plan for GAC and SAPM 2010 results dissemination includes the following:

For the provisional data:

➤ At the end of June 2011 – Publication on paper and CD, containing data at national, macro-region, development region and county level, for about 20 characteristics

For the final results:

➤ On 2nd of July 2012 – Press release with the final results of GAC 2010

➤ At the end of December 2012 – NIS site containing a selection of tables with the main indicators at national level

➤ At the end of December 2012 - Publication (5 volumes) on paper and CD:

- Volume I – General Agricultural Census 2010 – Results at national level
- Volume II – General Agricultural Census 2010 – Macro-region 1 – Development Regions North-West and Center
- Volume III – General Agricultural Census 2010 – Macro-region 2 – Development Regions North-East and South-East
- Volume IV – General Agricultural Census 2010 – Macro-region 3 – Development Regions South Muntenia and Bucharest-Ilfov
- Volume V – General Agricultural Census 2010 – Macro-region 4 – Development Regions South-West Oltenia and West

In volumes II – V, the results are presented at macro-region, development region and county level.

- In January 2013 – Publication on paper and CD – Agriculture Production Methods 2010
- During year 2013 – Publication on paper and CD - Typology and the economic size of agricultural holdings

The body responsible for GAC and SAPM 2010 data dissemination is the National Institute of Statistics.

4.2 Timeliness and Punctuality

The publication of the provisional and final results of GAC and SAPM 2010 was done according to the General Programme for Organizing and Conducting the General Agricultural Census 2010, which was approved by the Central Commission for the census and which is presented in detail in section 2.4.

The provisional results of the GAC 2010 were published six months after the last day of reference period, namely at the end of June 2011.

The final results of GAC and SAPM 2010 have been sent to Eurostat, according to the provisions of (EC) Regulation 1166/2008, together with the National Methodological Report.

5. CONFIDENTIALITY AND SECURITY

According to Law no. 153 of 11 July 2008, regarding carrying out of the Romanian GAC, Article 7, paragraph (3), the individual data included on the registration questionnaires are confidential and only meant for statistical purposes. This was mentioned both on the provisional data questionnaire, and also on the front page of the basic questionnaire of GAC and SAPM 2010.

According to Government Decision no. 1370 of 18 November 2009 on the organisation and carrying out of the Romanian GAC, Article 12 paragraph (2) after validation and publication of the final results of GAC and SAPM 2010, the questionnaires must be destroyed, according to the Law of national archives No. 16/1996, as amended and supplemented.

In addition to the above, the enumerators and all other persons involved in census activities, through signed employment contracts were forbidden from communicate to any individuals, institutions and companies, the responses, registered on the GAC and SAPM 2010 questionnaires.

ANNEXES

- Questionnaire(s)