

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

## **National Methodological Report (NMR)**

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: SPAIN

# **FARM STRUCTURE SURVEY 2009/2010 SURVEY ON AGRICULTURAL PRODUCTION METHODS 2009/2010 NATIONAL METHODOLOGICAL REPORT**

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## SUMMARY

The first Agricultural Census was conducted in 1962 and then in the censuses of 1972 and 1982.

Since Spain's accession as a full member to the European Community on 1 January 1986, the INE, the country's national statistics institute, joined the Community programme of surveys on the structure of agricultural holdings. The programme requires the dates of the Agricultural Census to vary as it has to be conducted in years ending in nine or zero, as set forth in successive Council regulations. The censuses were therefore conducted in 1989 and 1999 and the structure surveys in 1987, 1993, 1995, 1997, 2003, 2005 and 2007.

As there is no statistical record on agricultural holdings, agricultural censuses are particularly useful for updating the framework of future surveys.

The data reference periods have been adapted from Community law.

- For characteristics relating to land and labour force (including OGA), the reference period is the agricultural year 2009, that is, the agricultural campaign from 1 October 2008 to 30 September 2009.
- For livestock, the reference date is 30 September 2009.
- To measure rural development and for the section on landscape elements, the reference period is the past three years, i.e., 1 January 2007 until 31 December 2009.

The following population was surveyed according to Community regulations:

- a) Agricultural holdings with at least 1 ha of utilised agricultural area (UAA).
- b) Agricultural holdings with at least 0.2 ha of UAA used for Fresh vegetables, melons and strawberries (2.01.07) and flowers and ornamental plants (outdoors or under low protective cover)(2.01.08.01) or irrigated fruit and berry plantations and citrus plantations (2.01.08.01) nurseries (8.01.02.13+8.01.02.14) or nurseries (2.04.05) or under glass crops (2.02.07.02+2.01.08.02+2.04.07).
- c) Agricultural holdings with at least 0.1 ha of UAA used for under glass fresh vegetables, melons and strawberries (2.01.07.02)
- d) Agricultural holdings with at least 0.1 ha of UAA used for under glass flowers and ornamental plants (2.01.08.02).
- e) Agricultural holdings with at least 0.5 ha of UAA used for tobacco (2.01.06.01).
- f) Agricultural holdings with at least 0.5 ha of UAA used for hops (2.01.06.02).
- g) Agricultural holdings with at least 0.5 ha of UAA used for cotton (2.01.06.03).
- h) Agricultural holdings with one or more livestock units (LSU) and a total standard output (TSO) equal to or above 0.75 economic size of holdings (ES).

These criteria are independent: at least one must be met for a holding to be eligible for the Survey.

We have chosen to collect the variables from the survey agricultural production methods (SAPM) and other gainful activities (OGA) using a random sample in a single questionnaire.

The Farm Structure Survey (FSS 2009) and the SAPM were both planned, supervised and coordinated by the INE.

To carry them out a census directory was compiled beforehand by cross-referencing various files: the directory of the last census and various administrative files from agricultural sources.

The INE signed a partnership agreement with the autonomous community of the Basque Country, whereby its statistics institute (EUSTAT) conducted the fieldwork and completed all of the questionnaires in its area.

Data from the 2009 Agricultural Census were collected and entered in three specific phases over a 7-month period:

- **Phase 1: Postal phase with assistance and editing by phone. October-December 2009**

Mailing questionnaires for self-completion geared to all farm holders (except for a small subset such as public bodies or holders of multiple holdings that, due to their special characteristics, are reserved from the start for the next stage of PAPI interviews).

During this phase census respondents were able to complete the questionnaire on paper and return it by post in the enclosed envelope. The option of completing it online (CAWI) was also provided.

A free helpline (L900) was set up to assist data collection and answer calls from respondents.

During this phase a preliminary review was carried out on the questionnaires received, by calling those respondents from whom some kind of clarification or correction was required on the data provided.

- **Phase 2: Telephone phase (CATI). January - March 2010**

Data collection through telephone calls (CATI) to those holders who had yet to send the completed questionnaire as required in phase 1.

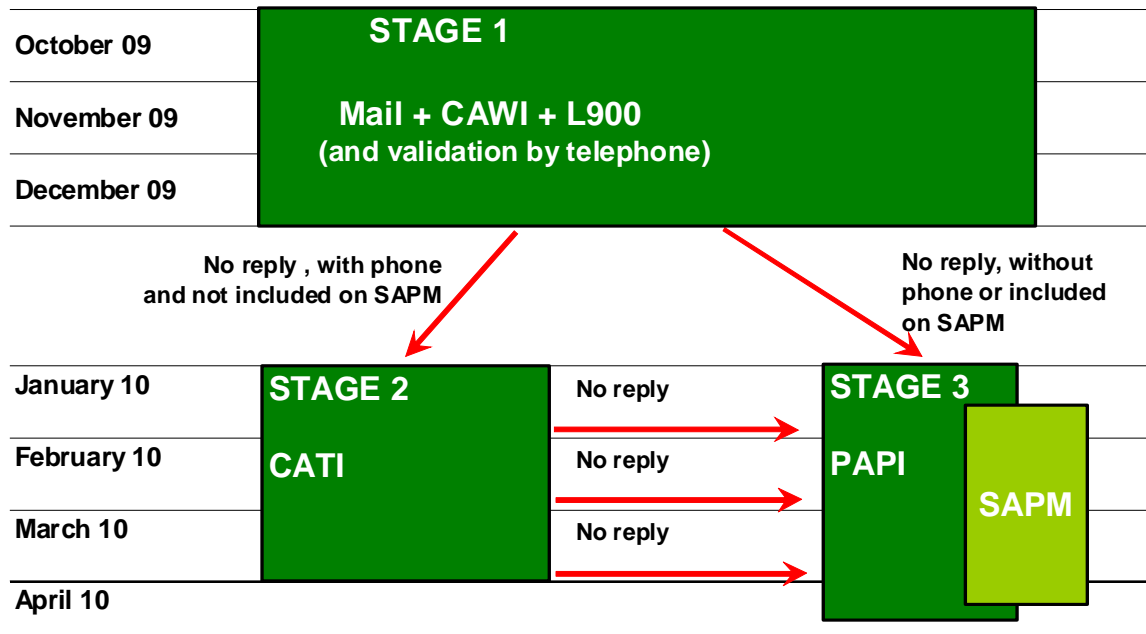
- **Phase 3: Personal phase (PAPI). January - April 2010**

Personal visits with a personal interview (PAPI) for those holdings from which the information had yet to be collected in the earlier phases.

In SAPM, we used a questionnaire on paper which included the OGA variables and was collected in its entirety in Phase 3 through the personal interview (PAPI).

Graphically:

Figure 1. Organisation of collection of Agricultural Census 2009



Each phase is described in greater detail in section 2.7.2.1.

The following questionnaires were used to carry out these phases:

- **For FSS collection: Questionnaire Mod. CA-09.**

The questionnaire was specially designed to be suitable for the postal phase.

An initial design was tested in a Pilot Study (April 2009) to check, amongst other aspects, the how well the questionnaire would be understood by respondents. In this Pilot Study it was noted that the breakdown of Labour employed on the holding in terms of days worked caused difficulties for self-completion. Therefore, this breakdown was removed from the general questionnaire as it was considered better to collect this information in the telephone editing phases or through personal interviews (Mod.MO-09).

Subsequently, the CA-09 questionnaire was adapted as necessary for the CAWI and CATI mechanisms, including the MO-09 offprint under these tools.

Versions in Spanish and in the other co-official languages of the various autonomous communities (Catalan, Galician, Valencian and Basque) were available in any of its formats (PAPI, CATI and CAWI).

- **For SAPM and OGA collection: Questionnaire Mod. MP-09.**

This was designed in hardcopy and data was collected by personally interviewing the holders taken from the sample.

## Other census tools

- **For Phase 1:** In addition to the CA-09 questionnaire and the completion instructions, farm holders received by post the letter of introduction to the Agricultural Census, a fact sheet and the postage paid envelope to return the completed questionnaires.

After the deadline (fifteen days), a reminder letter was sent to the farm holders. The response was so good that a second reminder letter had to be sent out in just a few regions.

- **For Phase 2:** The CA-09 questionnaire along with its MO-09 offprint, were included within the tools at CATI workplaces, including functions such as the option of expressing agricultural surfaces in units other than hectares.
- **For Phase 3:** Before the interview a letter was sent to farm holders with the date and place of the interview (at home or at a place set up for this purpose). The respondent was required to complete the FSS questionnaire, the SAPM or both.

## Publicising the census

To publicise the census with farm holders, especially during data collection postal phase, an advertising campaign was launched with direct advertising inserts in the press, radio, and television, in addition to articles in the media. Posters were also designed for display in public places where they would be seen by the highest number of people (including several agricultural and livestock shows).

In addition, the main professional farming organisations, regional agriculture departments, local councils and various other bodies were contacted that could help publicise the census.

## Cooperation of other companies with the INE

For certain tasks the INE had the assistance of external companies engaged officially through the relevant public competition. Specifically, these tasks were the following:

- ⇒ Agricultural census advertising campaign (advertising posters and inserts in the press, radio and television)
- ⇒ Help preparing training equipment (manuals, educational video for interviewers and other training elements).
- ⇒ Publishing and mailing of questionnaires and reminder letters to farm holders for Phase 1.
- ⇒ Tasks for collection and technological and telephone support for phases 1 and 2:
  - Programming and management of website for online questionnaires.
  - Free helpline L900.
  - First review of questionnaires with telephone call to respondents if necessary.
  - Telephone surveys using CATI.

- ⇒ Processes of scanning and recording FSS questionnaires received during Phase I (postal phase) and FSS and SAPM questionnaires collected in Phase 3 (personal phase).

FSS and SAPM questionnaires of Phase 3 (personal) were collected and underwent a first review at INE provincial offices, except in the Basque Country, due to the aforementioned arrangement.

- ⇒ Support for transporting census equipment (from INE Head Office to provincial offices and from these to the scanning and recording centre).
- ⇒ Design of an application to centralise data editing of the census and the survey.
- ⇒ Design of a Data Warehouse (DW) system to distribute the Agricultural Census.

An editing team was hired to edit data centrally through the INE Agricultural Unit. After manual error correction and before the final datasets were obtained, all questionnaires were subject to a process of automatic imputation of data.

The results were checked with other data sources before their final approval: Agricultural Census 1999, Farm Structure Surveys, Yearbook of the Ministry of the Environment and Rural and Marine Affairs and Rural Property Register.

The number of holdings surveyed was 989.796.

## 1. CONTACTS

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## 2. SURVEY METHODOLOGY

### 2.1 National legislation

Laws 4/1990 and 13/1996 lay down that statistics forming part of the national statistical plan - and specifically those whose compilation is binding on Spain by requirement of European Union legislation - are mandatory.

- The current National Statistical Plan is the National Statistical Plan 2009-2012 adopted by Royal Decree 1663/2008, which includes operations of the 2009 Agricultural Census and the Survey on Production Methods (operations 5001 and 5003 respectively)
- Regulation (EC) No 1166/2008 of the European Parliament and of the Council requires Spain to conduct an agricultural census or exhaustive Farm Structure Survey (FSS) and a Survey on Agricultural Production Methods (SAPM) in 2009.

Accordingly, both operations - FSS, and SAPM - are mandatory.

However, given the high complexity of the census operation and to foster coordination with other government bodies, in June 2009 Royal Decree 972/2009 of 12 June was passed, laying down the formation of the Agricultural Census 2009.



To implement this Royal Decree, in December 2009 Ministerial Order EHA/3475/2009 was enacted, establishing the rules binding the organisation and execution of the 2009 Agricultural Census.

All aspects of the census are governed in this Order:

- Legal basis for their formation
- Concept of the census
- Aims
- Areas of the census
- Basic definitions
- Census organisation
- Advertising
- Questionnaires
- Obligations of holders of agricultural holdings
- Statistical confidentiality
- Information collection procedure
- Collection period
- Publication of results
- Cooperation with other government bodies

Moreover, as laid down in the Government Statistics Act (Act 12/1989, of 9 May), questionnaires for both operations include the main legal points: nature, features and purpose of the Survey; statistical confidentiality; the duty to supply data; and penalties for violating the Act.

## **2.2 Characteristics and reference period**

The budgetary reasons, the characteristics to be examined are chiefly confined to the Community list except for the following three characteristics:

- 1.02.01.02 referring to “one or more natural persons who is/are partner, where the holding is a Group holding”. This is an insignificant characteristic.
- 2.01.06.09 “flax” and 2.01.06.10 “hemp”. These are non-existent crops as verified in the FSS 2007 and the data from the Ministry of the Environment and Rural and Marine Affairs.

Due to national requirements the irrigated and dry surfaces of all crops making up the UAA are surveyed separately. Given that water is a limited resource in particular areas of Spain and due to the vast difference in efficiency and production of crops in these areas, a study is required.

The data reference periods have been adapted from Community law.

- For characteristics relating to land and labour force, the reference period is the agricultural year 2009, that is, the agricultural campaign from 1 October 2008 to 30 September 2009.
- For livestock, the reference date is 30 September 2009 .
- To measure rural development and for the section on landscape elements, the reference period is the past three years, i.e., 1 January 2007 until 31 December 2009.

As the questionnaire was finally completed in June 2009, the definitions of characteristics have been based on versions of the *Handbook on implementing the FSS and SAPM* prior to that date. We can conclude therefore that the methodology used does not differ to that of the EU.

Changes to the earlier surveys and censuses are due to changes in Community Regulations on the characteristics and definitions to be used and the practical adaptation of the Spanish questionnaire to European requirements without additional questions of national interest, except for the distinction between dry and irrigated surfaces for each crop.

The main changes with respect to earlier censuses are:

- Reduction in population to be surveyed (earlier censuses surveyed all holdings with less than 0.1 ha of Total Area (2.01+2.02+2.03+2.04+2.05) or those with a certain amount of livestock), while in 2009 only holdings required by the EU were surveyed.
- Change in the reference date of livestock amended by Eurostat (before the day of the interview).
- Change in calculation of AWU for relatives of the holder (the calculation is made using the percentage interval of time worked rather than using the number of days worked per person, which does not appear in this questionnaire).

## 2.3 Survey organisation

The planning, coordination, and execution of the census operation for 2009, including FSS and SAPM, were carried out at INE's Head Office by the following units:

<b>INE Units involved in the operation Functions</b>	
<b>Promoting Unit</b>	<ul style="list-style-type: none"> <li>Coordination of all operations to execute the project and meet the planned schedule.</li> </ul>
<b>S.G. Business Statistics</b>	<ul style="list-style-type: none"> <li>Editing of the farms directory of the 1999 Agricultural Census.</li> <li>Design of methodology.</li> </ul>
<b>- Agricultural Statistics Desk</b>	<ul style="list-style-type: none"> <li>Setting of implementation and editing rules</li> <li>Quality control of data after collection</li> <li>Rules for automatic imputations</li> <li>Results analysis and assessment</li> </ul>
<b>Sub-Directorate General of Standards and Training</b>	<ul style="list-style-type: none"> <li>Compiling the census directory 2009</li> </ul>
<b>- Deputy Sub-Directorate-General Central Business Directory</b>	
<b>Sub-Directorate General of Sampling and Data Collection</b>	<ul style="list-style-type: none"> <li>Sample design and extraction for SAPM</li> </ul>
<b>- Design and Sampling Desk</b>	<ul style="list-style-type: none"> <li>Calculation of estimators</li> <li>Calculation of sampling errors for SAPM</li> </ul>
<b>Sub-Directorate General of Sampling and Data Collection</b>	<ul style="list-style-type: none"> <li>General planning, preparation and organisation of field work at phases 1, 2 and 3.</li> <li>Implementing the Pilot Study (April 2009).</li> <li>Organisation of other preparatory work like the prior editing of the Census Directory undertaken at INE provincial offices (May 2009).</li> <li>Preparation and distribution of collection tools (with the support of the Dissemination Unit to provide DTP and printing of the various tools).</li> <li>Organisation of training staff involved in the different phases (manuals, training videos, training sessions, etc..).</li> <li>Devising and monitoring the census advertising campaigns.</li> <li>Control and inspection on calls to freephone helplines (L900), calls on editing and conducting CATI interviews.</li> <li>Coordination of collection units (INE provincial offices and external company).</li> </ul>
<b>- Field Work Desk</b>	<p>General control and monitoring of collection (for phases 1, 2 and 3) plus interactions between these stages.</p>
<b>INE Provincial Offices</b>	<ul style="list-style-type: none"> <li>Cooperation in the prior editing of the Census Directory (May 2009)</li> </ul> <p>Collection and editing of FSS and SAPM questionnaires at stage 3 (personal interview).(January to April 2010)</p>

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**Sub-Directorate General of Statistical Information**

- Quality control of recording of the images from the scanned questionnaires.
- Design of an application for centralised editing of data for FSS and SAPM questionnaires.
- Processing after editing: automatic imputation, generation of derived variables, generation of micro dataset, generation of tabulated results and compilation of the final dataset for Eurostat.
- Design of a Data Warehouse (DW) system to distribute the Agricultural Census.

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**Statistical Publications Department**

- Printing of questionnaires, collection manuals and other Survey materials.
- Publication and dissemination of results on the INE website (INEbase).
- Design of questionnaires and other collection instruments (route map, collection reports, etc. for Phase 3).
- Control of company tasked with dispatch and reminder letters for Phase 1.
- Compilation of informative brochures for census publicity.
- Creation of an informative section on the Agricultural Census on the INE website.

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**General Secretariat**

- Budgetary control.
- Hiring processes for external enterprises of data collection and recording.
- Hiring processes for temporary staff to collect SAPM and other staff hirings.
- Hiring and control of transport company.
- Hiring and control postal company.

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Data were collected by an external company hired by the INE throughout the country, except for the autonomous community of the Basque Country, where the data were collected by the regional statistics institute (Eustat) by way of the signing of the corresponding partnership agreement.

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**Units external to the INE****Functions****External company assisting collection**

- Assistance with the website for CAWI
- Assistance with the L900 helpline
- Scanning, recording and editing of FSS questionnaires collected in Phase 1.
- CATI telephone interviews in Phase 2.

Scanning and recording of FSS questionnaires and SAPM collected in Phase 3.

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**Statistics Institute of the Basque Country (EUSTAT)**

Organisation, collection and recording of data for agricultural holdings in the Basque Country.

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The INE has assigned the following staff for the tasks:

<b>Units involved</b>	<b>Categories</b>	<b>Period of time or contract</b>	<b>Staff numbers</b>
<b>Promoting Unit.</b>  <b>- Agricultural Statistics Desk</b>	Statisticians holding higher graduate qualifications	Civil servant involved from 2007 to December 2011	3
	Statisticians holding graduate qualifications	Civil servant involved from 2007 to December 2011	3
	Higher Technician: Management and Common Services	Permanent staff involved from 2007 to December 2011	2
	Higher graduates (Agronomists)	Temporary staff involved from January 2010 to December 2011	2
	Higher Technician: Management and Common Services	Temporary staff involved from May 2010 to April 2011	27
	Higher Technician: Management and Common Services	Temporary staff involved from May 2010 to April 2011	5
<b>Sub-Directorate General of Standards and Training</b>			
<b>Sub-Directorate General of Sampling and Data Collection</b> <b>- Design and Sampling Desk</b>	Statisticians holding higher graduate qualifications	Civil servant involved from 2007 to December 2011	1
<b>Sub-Directorate General of Sampling and Data Collection</b> <b>- Field Work Desk</b>	Statisticians holding higher graduate qualifications	Civil servant involved from 2008 to June 2010	3
	Statisticians holding graduate qualifications	Civil servant involved from 2008 to June 2010	2
	Quality inspectors	Hired staff (September 2009 to May 2010)	4
	Computer staff	Hired staff (September 2008 to May 2010)	1
<b>Sub-Directorate General of Statistical Information</b>	Higher Graduates in Computer Sciences	Civil servant involved from 2009 to 2011 (part time)	2
	Statisticians holding higher graduate qualifications	Civil servant involved from September 2010 to December 2011 (part-time)	1
	Statisticians holding graduate qualifications	Civil servant involved from September 2010 to December 2011	1
		Civil servant involved from September 2010 to December 2011 (part-time)	2
	Project manager	Hired staff from September 2010 to September 2011 (part-time)	1

	Computer Analyst	Hired staff from July 2009 to 2010	1
		Hired staff from September 2010 to September 2011 (part-time)	2
	Programming Analyst	Hired staff from July 2009 to July 2010	1
		Hired staff from July 2011 to July 2010	1
		Civil servant involved from September 2010 to December 2011	1
	Computer programmer	Civil servant involved from January 2010 to December 2011	1
<b>Statistical Publications Department</b>	Statisticians holding higher graduate qualifications	Civil servant involved from July to September 2009	1
	Statisticians holding higher graduate qualifications	Civil servant involved from January 2009 to May 2010 (part-time)	1
	Statisticians holding graduate qualifications	Civil servant involved from July to September 2009	1
	Statisticians holding graduate qualifications	Civil servant involved in June 2011	1
<b>INE Provincial Offices, for Phase 3 data collection</b>	Statisticians holding graduate qualifications	Civil servant involved from January to April 2010	78
	Interviewer Inspectors	Hired staff from January to April 2010	191
	Interviewers	Hired staff from January to March 2010	1.110
	Assistants	Hired staff from January to March 2010	50

## 2.4 Calendar (overview of work progress)

On 22 December 2006, the INE set up the “National Commission on the Study and Programming of the Agricultural Census 2009” comprising representatives from all INE units involved in some aspect of the census tasks. All proposals and documents produced by this commission were sent for study and approval to the Ministry of the Environment and Rural and Marine Affairs (MARM), the regional statistics offices, INE provincial offices and national professional farming organisations.

An initial draft census was approved as a result of the work of this commission and approval from the Higher Statistical Council (CSE) in June 2008. This project considered using the same threshold as in previous censuses and to include variables on production methods in all census questionnaires. Furthermore, the collection system used in the last census remained unchanged as did staff categories and the method of hierarchical training.

With the new budgetary situation this project was abandoned and, from September 2008, work began on the new project, the schedule for which is summed up in the following table.

## Units involved:

<b>PU:</b>	<b>Promoting Unit (Agricultural Statistics Desk)</b>
<b>SGST:</b>	<b>Sub-Directorate General of Standards and Training</b>
<b>SGSDC:</b>	<b>Sub-Directorate General of Sampling and Data Collection</b>
<b>SGICT:</b>	<b>Sub-Directorate General of Information and Communication Technologies</b>
<b>SPD:</b>	<b>Statistical Publications Department</b>
<b>OP:</b>	<b>Office of the President of the INE</b>
<b>PO:</b>	<b>INE Provincial Offices</b>
<b>EX:</b>	<b>External company officially hired by the INE to provide support for certain tasks</b>

Operation phases and tasks	Units involved	Dates
<b>Draft design and other preliminary work</b>		
Compilation of draft census	PU	October 2008 to February 2009
Presentation of the project to the Higher Statistical Council	PU and OP	February 2009
Approval of the project by the Higher Statistical Council	OP	June 2009
Publication Royal Decree of the Agricultural Census	OP	June 2009
Final draft census	PU	July 2009
Publication of the Draft Census	SPD and PU	July to September 2009
Publication of the Ministerial Order on the structure and functioning of the Agricultural Census.	OP	December 2009
<b>Census Directory</b>		
Assessment of coverage of the framework	SGSDC	February 2008 to April 2009
Editing of the directory by Provincial Offices	SGSDC	April to June 2009
Availability of entry file to the postal operation	SGSDC	July 2009
<b>Sampling</b>		
Sampling design for SAMP	SGSDC	May-2009
Sampling selection for SAMP	SGSDC	November-2009
<b>Preparations for data collection</b>		
Processes for hiring, through public competition, external companies for certain tasks of data collection	SGSDC, PU, SGICT and GS	January to June 2009
First drafts of the census questionnaires for FSS	SGSDC and PU	January to March 2009
Pilot Study of census questionnaire for FSS	SGSDC	April-2009
Organisation of previous editing of identification and location data of the Census Directory, to be carried out by POs	SGSDC and POs	April and May 2009
Compilation, translation and editing of Phase1 questionnaires	SGSDC and SPD	July and August 2009
Preparation of other Phase 1 collection tools	SGSDC and SPD	July and August 2009
Preparation of advertising campaign	SGSDC, PU, OP, SPD	July to September 2009
Preparation of training tools (manuals, training videos, exercises..)	SGSDC, PU	July to September 2009 (for Phase1) September to December 2009 (for Phase 3)
Preparation and translation of CAWI tool	EX, SGSDC, SGICT, PU	July to October 2009
Preparation and translation of CATI tool	EX, SGSDC, SGICT, PU	October to December 2009
Preparation and distribution of Phase 3 collection tools (questionnaires for SAPM and other tools)	SGSDC, SGICT	October to December 2009

Software application for managing Phase 3 collection	SGICT	September 2009 to March 2010
Compilation of informative brochures for advertising campaign	PU	February to June 2009
<b>Publicising the census</b>		
Advertising campaign, with inserts in the press, radio and television.	EX	October 2009 to February 2010
Publishing of informative brochures on Agricultural Census.	SPD	July 2009
Distribution of posters to local councils and agricultural fairs	EX and PO	October to December 2009
<b>Data Collection</b>		
Training course for external company for Phases 1 and 2	SGSDC and PU	September 2009
Training course for INE offices for Phase 3	SGSDC, PU and SGICT	December-2009
Phase 1 Collection (Postal)	EX	October to December 2009
Collection Phase 2 (CATI)	EX	January-March 2010
Collection Phase 3 (PAPI)	PO	January-April 2010
General monitoring and coordination of collection	SGSDC	October 2009 to April 2010
Scanning, recording and first editing of FSS questionnaires	EX	October 2009 to May 2010
Scanning and recording of SAPM questionnaires	EX	March to May 2010
<b>Processing the information: editing and IT</b>		
Rules for data processing after recording (list of errors, automatic imputation programme, calculation of aggregate variables, final datasets, results tables, Eurofarm, etc.)	PU	March 2009 to December 2010
Applications development and maintenance for centralised editing	SGICT and EX	July 2009 to June 2011
Processing after editing	SGICT	September 2009 to December 2011
Design of a System Data Warehouse	SGICT and EX	September 2010 to December 2011
Quality control of scanning and recording	SGICT	October 2009 to May 2010
Recruitment of editing personnel	SG	May 2010 to April/May 2011
Courses for editing personnel	PU	May 2010
Quality control and editing of data (FSS and SAPM) and analysis of FSS results	PU	June 2010 to June 2011
Quality control, calculation of elevation factors and analysis of SAPM results	PU and SGSDC	June 2011 to December 2011
Production of final datasets and results tables	SGICT	June 2011
Production of Eurofarm	SGICT	June 2011
Publication of FSS results	SPD	June 2011

## 2.5 Population and frame

- **Population**

The population surveyed in this census is limited to holdings set down under article 3, namely, in Annex II of Regulation (EC) No. 1166/2008, which in our case concerns:

a) Agricultural holdings with at least 1 ha of utilised agricultural area (UAA).



- b) Agricultural holdings with at least 0.2 ha of UAA used for Fresh vegetables, melons and strawberries (2.01.07) and flowers and ornamental plants (outdoors or under low protective cover)(2.01.08.01) or irrigated fruit and berry plantations and citrus plantations (2.01.08.01) nurseries (8.01.02.13+8.01.02.14) or nurseries (2.04.05) or under glass crops (2.02.07.02+2.01.08.02+2.04.07).
- c) Agricultural holdings with at least 0.1 ha of UAA used for under glass fresh vegetables, melons and strawberries (2.01.07.02)
- d) Agricultural holdings with at least 0.1 ha of UAA used for under glass flowers and ornamental plants (2.01.08.02).
- e) Agricultural holdings with at least 0.5 ha of UAA used for tobacco (2.01.06.01).
- f) Agricultural holdings with at least 0.5 ha of UAA used for hops (2.01.06.02).
- g) Agricultural holdings with at least 0.5 ha of UAA used for cotton (2.01.06.03).
- h) Agricultural holdings with one or more livestock units (LSU) and a total standard output (TSO) equal to or above 0.75 economic size of holdings (ES).

These criteria are independent: at least one must be met for a holding to be eligible for the Survey.

Purely forestry enterprises are excluded from the census, where they do not meet the above conditions. This is because the census is for agricultural holdings only. However, when the holding surveyed has woodland, it will be included in the questionnaire.

Some 2000 holdings were added to the threshold used in the FSS surveys due to the introduction of conditions e, f and g outlined above, which did not appear in the population of other surveys.

1,449,785 holdings were surveyed. 31,540 of which corresponded to the Basque Country and the rest, 1,418,245, to regions covered by the INE, hereinafter INE regions.

Prior to fix the conditions of the threshold, we assured that it excluded the smallest holdings which together contribute to less to 2% to the total UAA (excluding common lands) and 2% or less to the total number of LSU. According to the last Agricultural Census, only 0,66% of the UAA (excluding common lands) and 0,44% of the total number of LSU are excluded.

**FSS 1999. Treshold used in FSS 2009**

Farm09	HOLDINGS	%	UAA. ha	%
Y	1.289.451,00		26.159.165,62	99,40
N	500.711,00		157.621,41	0,60
TOTAL	1.790.162,00		26.316.787,03	100,00

UAA OF COMMON LANDS.ha	%	UAA EXCLUDING COMMON LANDS. ha	%	Farm09
2.357.512,66	100,00	23.801.652,96	99,34	Y
86,01	0,00	157.535,40	0,66	N
2.357.598,67	100,00	23.959.188,36	100,00	TOTAL

TOTAL AREA. ha	%	LIVESTOCK UNITS	%
35.207.282,72	83,47	14.994.320,27	99,56
6.973.668,68	16,53	66.572,71	0,44
42.180.951,40	100,00	15.060.892,98	100,00

TOTAL GROSS MARGIN (pesetas)	%	ARABLE LAND+ KITCHEN GARDENS. ha	%
3.073.802.465.170,00	98,64	12.368.593,14	99,75
42.473.921.259,00	1,36	31.129,84	0,25
3.116.276.386.429,00	100,00	12.399.722,98	100,00

CEREALS. ha	%	FRUIT AND BERRY PLANTATION+ CITRUS PLANTATION. ha	%
6.989.427,25	99,86	1.133.217,09	98,37
9.995,37	0,14	18.750,77	1,63
6.999.422,62	100,00	1.151.967,86	100,00

Farm09	OLIVE PLANTATION. ha	%
Y	2.220.286,63	97,66
N	53.302,02	2,34
TOTAL	2.273.588,65	100,00

VINEYARDS. ha	%	PERMANENT GRASSLAND. ha	%
1.010.105,06	97,56	9.368.415,16	99,70
25.241,98	2,44	28.012,82	0,30
1.035.347,04	100,00	9.396.427,98	100,00

Farm09 = 'Y' . Holdings above the mentioned treshold.

Farm09 = 'N' . Holdings under the treshold.

The comparison of the FSS final results with Land Use data showed that the threshold used fulfilled the required condition.

### UAA (in 1000 ha)

	1999	2003	2005	2007	2009
<b>LAND USE</b>	25.942,20	25.125,40	25.859,00	25.003,00	24.190,40
<b>FSS</b>	26.159,16	25.175,26	24.855,13	24.892,52	23.752,69
<b>%LAND USE / FSS</b>	-0,83	-0,20	4,04	0,44	1,84

### Frame

Before data collection and during 2008 a list register or framework was created. This register listed all the reporting units considered to be potential owners of agricultural holdings, including their relevant contact information.

Its creation was based on the use and integration of different kinds of sources:

- Administrative sources:
  - Managed by the MARM (IACS register, register of livestock holdings and register of holdings with insurance arranged with the State Agency for Agricultural Insurance)
  - Managed by the Spanish Agency for Tax Administration (AEAT) (Census on taxpayers related to agricultural and livestock activities)
- INE statistical sources (Agricultural Census 1999, PADRON [Municipal Continuous Register) and Business Register). The last two sources served to record and improve postal addresses.

The framework or directory was obtained from cross-referencing (using the Tax ID Number) previous administrative files with the register of the previous census updated with FSS 2003, 2005 and 2007.

The reference timeframe for administrative sources was that corresponding to the year before the reference timeframe of the Census. Improvement processes for identification and location variables were extended until early 2009.

## 2.6 Survey design

The 2009 Survey on the Structure of Agricultural Holdings was conducted as a census in which a questionnaire was sent out to each unit of the previously established framework. The Survey on Agricultural Production Methods (SAPM 2009) was carried out using stratified random sampling. Firstly, the series of holdings subject to exhaustive investigation was calculated. And secondly, the population was distributed into strata formed by cross-referencing Autonomous Communities, two-digit types of farming (TF2) and five size groups. The sample size was calculated by applying optimal allocation, meeting the accuracy requirements set down in Annex IV to Regulation (EC) No 1166/2008. The sample was randomly obtained in each stratum. Lastly, the calibrated estimators of the variable totals and the sampling errors were calculated.

## 2.7 Sampling, data collection and data entry

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

**Sample size:** optimal allocation was used, meeting the accuracy requirements for determining SAPM 2009 sample size, as set down in Annex IV to Regulation (EC) No 1166/2008.

A 10% coefficient of variation was set for a series of agricultural and livestock characteristics that met the following conditions:

- For agricultural characteristics: 5% or more of the UAA of the Autonomous Community.
- For livestock characteristics: 10% or more of the LSU of the Autonomous Community and over 5% of the national total for this characteristic.

The agricultural characteristics are:

- 1) Permanent grassland.
- 2) Cereals.
- 3) Dried pulses and protein crops, potatoes and industrial crops.
- 4) Plants harvested green included temporary grass.
- 5) Fresh vegetables, melons and strawberries and flowers and ornamental plants.
- 6) Fruit and berry plantations and citrus plantations, olive plantations, vineyards plantations, nurseries and under glass crops.

The livestock characteristics are:

- 1) Bovine animals.
- 2) Sheep and goats.
- 3) Pigs.
- 4) Poultry.

For each Autonomous Community and TF2, the sample size  $n_{cot}$  is calculated by solving the following optimisation problem:

$$\text{Min } \sum_{t:1}^5 n_{cot}$$

Subject to:

$$\frac{V(\hat{X}_{cov})}{X_{cov}^2} \leq C_{cov}^2$$

Where the subscript 'c' represents the Autonomous Community, 'o' the TF2, 't' the size groups, 'v' each variable (agricultural and livestock characteristics as per the Regulation), and  $n_{cot}$  represents the sample size in the stratum indicated by the subscript. The coefficient  $C_{cov}$  was established as follows:

$$C_{cvo} = \frac{C'}{(X_{cov}/X_{cv})H^{1/2}}$$

where H is the TF2 number in the Autonomous Community.

Thus:

$$V(\hat{X}_{cv}) \leq \sum_{o=1}^H C_{cov}^2 X_{cov}^2 = \sum_{o=1}^H \frac{C'^2 X_{cov}^2}{(X_{cov}/X_{cv})^2 H} = C'^2 X_{cv}^2$$

that is, we ensure that the coefficient of variation for the total of variable 'v' in the Autonomous Community 'c' is less than  $C'$ . The value of  $C'$  is set at 0.10.

To solve this problem, Bethel's algorithm was used (Répartition de l'échantillon dans les enquêtes à plusieurs variables, Techniques d'enquêtes, 1989, Vol.15 No. 1, pp. 49-60). The sample size obtained was increased to account for missing responses.

**Random stratified sampling:** a simple random sample is drawn from each stratum.

**Statistical programs used in the sample selection:** custom programs using SAS software.

**Sampling design and estimation method:** random stratified sampling design. A simple random sample is drawn from each stratum. Calibrated estimators are used in the estimation process. The CALMAR macro performed in SAS software by the French INSEE is used to calculate the calibrated elevation factors. The variables used for calibration are drawn from the 2009 Agricultural Census.

**Stratification:** pre-stratification is performed in the initial framework and once the census information is collected, post-stratification is performed. In both cases, the same variables are used for stratification.

The stratum is defined by cross-referencing autonomous communities, TF2 and five size groups.

The size groups are formed using the methodology of the surveys on the Structure of Agricultural Holdings. We apply the rule of the accumulative of the square root of the frequency distribution to each stratification variable (Cochran, 1977). From this, we obtain categorical variables, associated to each stratification variable, which take values from 1 to 5 indicating the size group; 1 represents the smallest holdings and 5 the largest. Lastly, the size group is defined as the maximum value taken by these variables.

We have considered UAA and (arable land + kitchen gardens + permanent crops) as variables for stratification in predominantly agricultural TFs and UAA and LSU in predominantly livestock TFs.

**Strata where the sampling ratio is 100%:** to reduce the asymmetry of the main characteristics of agricultural holdings, UAA, (arable land + kitchen gardens + permanent crops) and LSU (Livestock Units), we consider 0.5% of the largest holdings by Autonomous Community as exhaustive, based on these characteristics.

Moreover, to reduce the dispersion of the population with regard to the most relevant agricultural and livestock characteristics in each Autonomous Community, we apply a second criterion for the selection of exhaustive holdings: the sigma-gap rule (Julien and Mandala, 1990). This rule is applied to each of the relevant variables in each Autonomous Community and TF2. It arranges units from smallest to largest according to a variable and considers as exhaustive all those after the first unit for which the difference between it and the previous unit is greater than the typical deviation of the aforementioned variable. The most relevant agricultural and livestock characteristics are determined by the conditions set out in Annex IV of the Regulation for the calculation of sample size.

We also consider holdings with 20 or more AWU and holdings belonging to a single owner with more than five farms as exhaustive.

**Sampling across time:** Farm Structure Surveys are conducted using a panel. In FSS 2013, a sample will be obtained from the directory available at the time (Agricultural Census 2009) and the same sample will be used in 2016, updated as follows: for holdings with land, with the new holdings obtained from the survey using the mother and daughter farm methodology, and for livestock, new large holdings are obtained from administrative datasets, which are added to the exhaustive stratum of the survey.

**Elements related to the precision requirements stipulated in Annex IV “Precision Requirements” of the Regulation 1166/2008:**

NUTS2 regions with more than 10000 holdings  
Crop characteristics:

Precision requirements	Field codes	NUTS2 regions			
		'ES11	'ES12	'ES13	'ES21
Number of holdings in the NUTS2 region		81174	23910	10352	16554
UAA, ha of the NUTS2 region	A_3_1	647598.42	363179.5	235238.05	190394.98
Area of cereals in ha in the NUTS2 region	B_1_1	48356.37	878.98	1694.06	41641.33
% Cereals in the UAA of the NUTS2 region		7.47	0.24	0.72	21.9
Area of potatoes and sugar beet in ha in the NUTS2 region	B_1_3 + B_1_4	13962.99	1198.56	223.4	4439.51
% potatoes and sugar beet in the UAA of the NUTS2 region		2.16	0.33	0.09	2.33
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	27.5	0.5	103.31	1803.9
% oilseed crops in the UAA of the NUTS2 region		0	0	0.04	0.95
Area of permanent outdoor crops in ha in the NUTS2 region	B_4 - B_4_7	17181.08	3655.95	282.02	16877.67
% permanent outdoor crops in the UAA of the NUTS2 region		2.65	1.01	0.12	8.86
Area of fresh vegetables, melons, strawberries, flowers in ha in the NUTS2 region	B_1_7 + B_1_8	3913.68	407	177	851.54
% fresh vegetables, melons, strawberries, flowers in the UAA of the NUTS2 region		0.6	0.11	0.08	0.45

Livestock characteristics:

Area of temporary grass and permanent grassland in ha in the NUTS2 region	B_1_9_1 + B_3	473635.88	344996.31	228679.23	115616.59
% temporary grass and permanent grassland in the UAA of the NUTS2 region		73.1	95	97.2	60.7

Precision requirements		Field codes	NUTS2 regions			
			'ES11	'ES12	'ES13	'ES21
LSU in the NUTS2 region			1274108.87	327385.88	249293.13	171988.29
Bovine animals (all ages)	Number of Bovine animals in the NUTS2 region, in LSU	$C_{2\_1} \cdot 0.4 + C_{2\_2} \cdot 0.7 + C_{2\_3} \cdot 0.7 + C_{2\_4} + C_{2\_5} \cdot 0.8 + C_{2\_6} + C_{2\_99} \cdot 0.8$	761978.8	297502.9	217857.5	100870.6
	% of the LSU in the NUTS2 region		59.8	90.9	87.4	58.6
	% of national share of bovine animals in LSU		18.3	7.14	5.23	2.42
Sheep and goats (all ages)	Number of Sheep and goats in the NUTS2 region, in LSU	$C_{3\_1} \cdot 0.1 + C_{3\_2} \cdot 0.1$	22117.7	6432.8	6982	29371.4
	% of the LSU in the NUTS2 region		1.74	1.96	2.8	17.1
	% of national share of sheep and goats in LSU		1.17	0.34	0.37	1.55
Pigs	Number of Pigs in the NUTS2 region, in LSU	$C_{4\_1} \cdot 0.027 + C_{4\_2} \cdot 0.5 + C_{4\_99} \cdot 0.3$	264777.04	4200.3	902.05	4329.86
	% of the LSU in the NUTS2 region		20.8	1.28	0.36	2.52
	% of national share of pigs in LSU		4.3	0.07	0.01	0.07
Poultry	Number of Poultry in the NUTS2 region, in LSU	$C_{5\_1} \cdot 0.007 + C_{5\_2} \cdot 0.014 + C_{5\_3} \cdot 0.030$	205841.99	3786.2	2535.46	21413.29
	% of the LSU in the NUTS2 region		16.2	1.16	1.02	12.5
	% of national share of poultry in LSU		8.79	0.16	0.11	0.91



NUTS2 regions with more than 10000 holdings  
Crop characteristics:

Precision requirements	Field codes	NUTS2 regions			
		'ES22	'ES23	ES24	'ES41
Number of holdings in the NUTS2 region		15871	10234	52774	98247
UAA, ha of the NUTS2 region	A_3_1	545524.36	230217.99	2345695.69	5362468.44
Area of cereals in ha in the NUTS2 region	B_1_1	210142.73	46127.52	829605.71	1991842.42
% Cereals in the UAA of the NUTS2 region		38.5	20	35.4	37.1
Area of potatoes and sugar beet in ha in the NUTS2 region	B_1_3 + B_1_4	572.67	2224.27	987.11	53290.75
% potatoes and sugar beet in the UAA of the NUTS2 region		0.1	0.97	0.04	0.99
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	5269.96	2036.88	17516.33	250411.66
% oilseed crops in the UAA of the NUTS2 region		0.97	0.88	0.75	4.67
Area of permanent outdoor crops in ha in the NUTS2 region	B_4 - B_4_7	33057.71	56306.4	194814.58	62680.15
% permanent outdoor crops in the UAA of the NUTS2 region		6.06	24.5	8.31	1.17
Area of fresh vegetables, melons, strawberries, flowers in ha in the NUTS2 region	B_1_7 + B_1_8	8854.9	2854.39	5337.69	12058.24
% fresh vegetables, melons, strawberries, flowers in the UAA of the NUTS2 region		1.62	1.24	0.23	0.22
Area of temporary grass and permanent grassland in ha in the NUTS2 region	B_1_9_1 + B_3	233632.31	101142.91	829297.26	2077516.75
% temporary grass and permanent grassland in the UAA of the NUTS2 region		42.8	43.9	35.4	38.7

Livestock characteristics:

Precision requirements		Field codes	NUTS2 regions			
			'ES22	'ES23	ES24	'ES41
LSU in the NUTS2 region			360806.6	111178.81	2013756.53	2254968.57
Bovine animals (all ages)	Number of Bovine animals in the NUTS2 region, in LSU	$C_{2\_1} \cdot 0.4 + C_{2\_2} \cdot 0.7 + C_{2\_3} \cdot 0.7 + C_{2\_4} + C_{2\_5} \cdot 0.8 + C_{2\_6} + C_{2\_99} \cdot 0.8$	79592	30728.3	187247.5	857275.7
	% of the LSU in the NUTS2 region		22.1	27.6	9.3	38
	% of national share of bovine animals in LSU		1.91	0.74	4.5	20.6
Sheep and goats (all ages)	Number of Sheep and goats in the NUTS2 region, in LSU	$C_{3\_1} \cdot 0.1 + C_{3\_2} \cdot 0.1$	60786.6	13770.8	198727.1	355035.7
	% of the LSU in the NUTS2 region		16.8	12.4	9.9	15.7
	% of national share of sheep and goats in LSU		3.21	0.73	10.5	18.7
Pigs	Number of Pigs in the NUTS2 region, in LSU	$C_{4\_1} \cdot 0.027 + C_{4\_2} \cdot 0.5 + C_{4\_99} \cdot 0.3$	155981.26	30657.21	1389336.33	759044.38
	% of the LSU in the NUTS2 region		43.2	27.6	69.0	33.7
	% of national share of pigs in LSU		2.53	0.5	22.6	12.3
Poultry	Number of Poultry in the NUTS2 region, in LSU	$C_{5\_1} \cdot 0.007 + C_{5\_2} \cdot 0.014 + C_{5\_3} \cdot 0.030$	52500.56	32966.86	232269.52	255496.37
	% of the LSU in the NUTS2 region		14.6	29.7	11.5	11.3
	% of national share of poultry in LSU		2.24	1.41	9.9	10.9

NUTS2 regions with more than 10000 holdings

Crop characteristics:

Precision requirements	Field codes	NUTS2 regions			
		'ES42	'ES43	'ES51	'ES52
Number of holdings in the NUTS2 region		122415	65230	60839	120180
UAA, ha of the NUTS2 region	A_3_1	4091442.86	2585898.97	1147532.43	657470.95
Area of cereals in ha in the NUTS2 region	B_1_1	1373424.14	378811.22	370802.76	48598.13
% Cereals in the UAA of the NUTS2 region		33.6	14.6	32.3	7.49
Area of potatoes and sugar beet in ha in the NUTS2 region	B_1_3 + B_1_4	2767.57	840.71	997.32	1323.54
% potatoes and sugar beet in the UAA of the NUTS2 region		0.07	0.03	0.09	0.202
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	206274.42	18695.31	9481.57	1768.89
% oilseed crops in the UAA of the NUTS2 region		5.04	0.72	0.83	0.277
Area of permanent outdoor crops in ha in the NUTS2 region	B_4 - B_4_7	781057.51	313549.63	281275.18	429474.33
% permanent outdoor crops in the UAA of the NUTS2 region		19.1	12.1	24.5	65.3
Area of fresh vegetables, melons, strawberries, flowers in ha in the NUTS2 region	B_1_7 + B_1_8	38394.16	25382.33	7446.68	15274.54
% fresh vegetables, melons, strawberries, flowers in the UAA of the NUTS2 region		0.94	0.98	0.65	2.32
Area of temporary grass and permanent grassland in ha in the NUTS2 region	B_1_9_1 + B_3	696742.3	1615106.3	403722.92	118857.27
% temporary grass and permanent grassland in the UAA of the NUTS2 region		17	62.5	35.2	18.1

Livestock characteristics:

Precision requirements		Field codes	NUTS2 regions			
			'ES42	'ES43	'ES51	'ES52
LSU in the NUTS2 region			1184597.76	1170786.04	2738274.76	558959.82
Bovine animals (all ages)	Number of Bovine animals in the NUTS2 region, in LSU		242626	486360.9	323645.5	35731.3
	% of the LSU in the NUTS2 region		20.5	41.5	11.8	6.39
	% of national share of bovine animals in LSU		5.83	11.7	7.77	0.86
Sheep and goats (all ages)	Number of Sheep and goats in the NUTS2 region, in LSU		295638.2	365868.5	67183	40220
	% of the LSU in the NUTS2 region		25	31.2	2.45	7.2
	% of national share of sheep and goats in LSU		15.6	19.3	3.55	2.12
Pigs	Number of Pigs in the NUTS2 region, in LSU		336162.73	262177.2	1698123.96	278215.4
	% of the LSU in the NUTS2 region		28.4	22.4	62	49.8
	% of national share of pigs in LSU		5.46	4.26	27.6	4.52
Poultry	Number of Poultry in the NUTS2 region, in LSU		299644.3	40331.64	627139.62	196941.49
	% of the LSU in the NUTS2 region		25.3	3.44	22.9	35.2
	% of national share of poultry in LSU		12.8	1.72	26.8	8.41

NUTS2 regions with more than 10000 holdings

Crop characteristics:

Precision requirements	Field codes	NUTS2 regions			
		'ES53	'ES61	'ES62	'ES70
Number of holdings in the NUTS2 region		10748	246104	32698	14173
UAA, ha of the NUTS2 region	A_3_1	182322.33	4402760.35	394538.33	55069.69
Area of cereals in ha in the NUTS2 region	B_1_1	56419.02	754098.89	60200.04	1257.38
% Cereals in the UAA of the NUTS2 region		30.9	17.1	15.3	2.3
Area of potatoes and sugar beet in ha in the NUTS2 region	B_1_3 + B_1_4	1345.32	21690.62	1794.97	2653.28
% potatoes and sugar beet in the UAA of the NUTS2 region		0.74	0.49	0.45	4.82
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	17.91	299312.57	102.76	5.95
% oilseed crops in the UAA of the NUTS2 region		0.01	6.8	0.03	0.01
Area of permanent outdoor crops in ha in the NUTS2 region	B_4 - B_4_7	37025.89	1619180.14	194635.84	16232
% permanent outdoor crops in the UAA of the NUTS2 region		20.3	36.8	49.3	29.5
Area of fresh vegetables, melons, strawberries, flowers in ha in the NUTS2 region	B_1_7 + B_1_8	2380.62	68158.25	45338.38	4871.75
% fresh vegetables, melons, strawberries, flowers in the UAA of the NUTS2 region		1.31	1.55	11.5	8.85
Area of temporary grass and permanent grassland in ha in the NUTS2 region	B_1_9_1 + B_3	39905.52	1246168.17	19773.7	24585.94
% temporary grass and permanent grassland in the UAA of the NUTS2 region		21.9	28.3	5.01	44.6

Livestock characteristics:

Precision requirements		Field codes	NUTS2 regions			
			'ES53	'ES61	'ES62	'ES70
LSU in the NUTS2 region			83148.08	1568947.52	557048.63	85797.16
Bovine animals (all ages)	Number of Bovine animals in the NUTS2 region, in LSU		24631.7	402442.8	37159	12275.5
	% of the LSU in the NUTS2 region		29.6	25.7	6.67	14.3
	% of national share of bovine animals in LSU		0.59	9.66	0.89	0.29
Sheep and goats (all ages)	Number of Sheep and goats in the NUTS2 region, in LSU		29887	299651.4	63335.5	28358.9
	% of the LSU in the NUTS2 region		35.9	19.1	11.4	33.1
	% of national share of sheep and goats in LSU		1.58	15.8	3.34	1.5
Pigs	Number of Pigs in the NUTS2 region, in LSU		14447.57	524370.89	412432.41	12547.51
	% of the LSU in the NUTS2 region		17.4	33.4	74	14.6
	% of national share of pigs in LSU		0.23	8.52	6.7	0.2
Poultry	Number of Poultry in the NUTS2 region, in LSU		9948.75	256807.55	41510.82	30972.01
	% of the LSU in the NUTS2 region		12	16.4	7.45	36.1
	% of national share of poultry in LSU		0.42	11	1.77	1.32

NUTS2 regions with less than 10000 holdings

Crop characteristics:

Precision requirements	Field codes	NUTS2 regions		
		ES30	ES63	ES64
Number of holdings in the NUTS2 region		8284	6	3
Associated NUTS1 region		ES3	ES6	ES6
Number of holdings of the associated NUTS1 region		8284	278811	278811
UAA, ha of the associated NUTS1 region	A_3_1	315261.27	4797372.52	4797372.52
Area of cereals in ha in the associated NUTS1 region with at least 1000 holdings	B_1_1	77908.28	814314.93	814314.93
% Cereals in the UAA of the associated NUTS1 region with at least 1000 holdings		24.7	17.0	17.0
Area of potatoes and sugar beet in ha in the associated NUTS1 region with at least 1000 holdings	B_1_3 + B_1_4	156.56	23485.89	23485.89
% potatoes and sugar beet in the UAA of the associated NUTS1 region with at least 1000 holdings		0.05	0.49	0.49
Area of oilseed crops in ha in the associated NUTS1 region with at least 1000 holdings	B_1_6_4 + B_1_6_5 + B_1_6_6 + B_1_6_7 + B_1_6_8	727.19	299428.43	299428.43
% oilseed crops in the UAA of the associated NUTS1 region with at least 1000 holdings		0.23	6.24	6.24
Area of permanent outdoor crops in ha in the associated NUTS1 region with at least 1000 holdings	B_4 - B_4_7	28920.56	3627631.96	3627631.96
% permanent outdoor crops in the UAA of the associated NUTS1 region with at least 1000 holdings		9.17	37.8	37.8
Area of fresh vegetables, melons, strawberries, flowers in ha in the NUTS2 region	B_1_7 + B_1_8	1396.38	1.02	0
% fresh vegetables, melons, strawberries, flowers in the UAA of the NUTS2 region		0.44	1.8	0
Area of temporary grass and permanent grassland in ha in the associated NUTS1 region with at least 1000 holdings	B_1_9_1 + B_3	136808	2531883.74	2531883.74
% temporary grass and permanent grassland in the UAA of the associated NUTS1 region with at least 1000 holdings		43.4	26.4	26.4

Livestock characteristics:					
			NUTS2 regions		
Precision requirements			ES30	ES63	ES64
Precision requirements		Field codes			
LSU in the associated NUTS1 region			119882.85	2126007.33	
Bovine animals (all ages)	Number of Bovine animals in the associated NUTS1 region with at least 1000 holdings, in LSU	$C_{2\_1} \cdot 0.4 + C_{2\_2} \cdot 0.7 + C_{2\_3} \cdot 0.7 + C_{2\_4} + C_{2\_5} \cdot 0.8 + C_{2\_6} + C_{2\_99} \cdot 0.8$	66595	439605.8	439605.8
	% of the LSU in the associated NUTS1 region with at least 1000 holdings		55.6	20.68	20.68
	% of national share of bovine animals in LSU		1.6	10.56	10.56
Sheep and goats (all ages)	Number of Sheep and goats in the associated NUTS1 region with at least 1000 holdings, in LSU	$C_{3\_1} \cdot 0.1 + C_{3\_2} \cdot 0.1$	10405.1	362989.4	362989.4
	% of the LSU in the associated NUTS1 region with at least 1000 holdings		8.68	17.1	17.1
	% of national share of sheep and goats in LSU		0.55	19.17	19.17
Pigs	Number of Pigs in the associated NUTS1 region with at least 1000 holdings, in LSU	$C_{4\_1} \cdot 0.027 + C_{4\_2} \cdot 0.5 + C_{4\_99} \cdot 0.3$	6973.15	936803.31	936803.31
	% of the LSU in the associated NUTS1 region with at least 1000 holdings		5.82	44.1	44.1
	% of national share of pigs in LSU		0.11	15.22	15.22
Poultry	Number of Poultry in the associated NUTS1 region with at least 1000 holdings, in LSU	$C_{5\_1} \cdot 0.007 + C_{5\_2} \cdot 0.014 + C_{5\_3} \cdot 0.030$	31777.81	298322.56	298322.56
	% of the LSU in the associated NUTS1 region with at least 1000 holdings		26.5	14.0	14.0
	% of national share of poultry in LSU		1.36	12.74	12.74



## 2.7.2 Data collection and data entry

### Data Collection

Before any data were collected, INE signed a partnership agreement with the Autonomous community of the Basque Country, through which the statistics institute of the latter (EUSTAT) would collect and record questionnaires from this region.

INE collected data using different methods in successive phases. This approach was an important development on previous agricultural censuses and surveys, traditionally collected solely by means of personal interview.

- **Phase 1: collection of FSS questionnaires by mail or CAWI with a helpline for respondents and for data editing.**

Census collection began by mailing the questionnaire to 1,427,753 presumed holdings. The questionnaires were sent out in stages during the first three weeks of October 2010, organised by region, in order to stagger the expected calls to the helpline.

In the fourth week of October, the first reminder letter was sent out, also in stages, to farm holders who had not yet collaborated. This action proved highly effective and, although subsequent reminder letters (a second and possibly a third) had been anticipated, the second reminder was only sent to certain regions where collection was slower.

The rate at which information was received increased from mid-October and became more intense during the first two weeks of November, with over 15,000 questionnaires received each day from respondents who answered within the deadline indicated in the questionnaire (15 days after receipt).

The helpline was a key element of Phase 1 of the Census, with over 265,000 calls dealt with between October and December, at an average of seven minutes' conversation time. The workload was particularly intense in November, when up to 10,000 calls were dealt with on certain days.

The degree of completed cases in this phase far exceeded initial expectations. A 78% response rate was obtained for all mailed questionnaires. A high percentage (17%) completed the questionnaire over the Internet (CAWI).

During this mailing phase and between November 2009 and March 2010, 65% of the farm holders who had replied by mail had to be called to correct serious completion errors.

Holdings that did not respond entered the CATI or PAPI phase, depending on whether contact telephone numbers were available and whether the holding in question formed part of the Production Methods sample. Thus, the remaining holdings that were also required to complete the SAPM survey were assigned to the PAPI phase.

▪ **Phase 2: FSS collection by telephone (CATI).**

The main aspects of note in the CATI phase, conducted between January and March 2010 were:

- ✓ A significant number of holdings "withdrew" from CATI because the respondents were still submitting their questionnaires by post. Approximately 100,000 holdings initially assigned to the CATI mechanism sent their completed questionnaires between December and January.
- ✓ A "municipality-based" system of priorities was set up so that municipalities with fewer holdings could be interviewed first, to allow better planning of the Phase 3 routes.
- ✓ Almost 3 million calls were made, which included valid interviews and unsuccessful contacts.
- ✓ 132,000 telephone interviews were valid, which required more than 908,000 attempts at contact (6.9 attempts per interview).
- ✓ The average call length for CATI was 14.63 minutes.
- ✓ Of the almost 226,500 holdings ultimately included in the CATI phase, 57% were completed. Cases that could not be resolved were transferred to the PAPI phase, in six batches.

▪ **Phase 3: personal interviews (PAPI) for FSS cases still pending and SAPM collection.**

The main aspects of note in the PAPI phase, conducted between January and April 2010 were:

- ✓ Farm holders also "withdrew", especially during January and February, since respondents continued to submit their questionnaires by mail (around 20,000 holdings). This situation led to personal interviewers having to cancel appointments and change their planned work routes and, in some cases, interviews were repeated.
- ✓ Farm holders also "joined" when problems arose with the CATI (around 70,000 in 6 batches).
- ✓ The SAPM sample included 69,000 holdings, of which 63% had already completed the census questionnaire in Phase 1. The personal interviewer thus only had to obtain additional information on production methods. This new method of collaboration led to "fatigue" among respondents and certain inconsistencies between the census questionnaire and the SAPM questionnaire.
- ✓ Despite these difficulties, 85% of the 184,000 holdings assigned to PAPI were completed.
- ✓ In this phase, the Interviewer and Interviewer Inspector conducted a manual review of each of the questionnaires collected, verifying compliance with the consistency rules set previously. In each provincial office, the Inspection Managers and the graduate statistician assigned to the Agricultural Census monitored the quality and pace of collection.

Following the collection phase, the number of questionnaires in the database totalled 1,366,419, of which 19,399 were collected by the Basque Country and 1,347,020 by the rest of Spain.

### **Data entry**

- Questionnaire Scanning was employed, but no optical character recognition (OCR) was used (only human recording and debugging).
- Entering the data by the interviewer in Paper-and-Pencil Interviews (PAPI) and Computer Assisted Telephone Interview (CATI).
- Entering the data by the holder in CAWI (Computer Aided Web Interviewing).
- Questionnaire debugging by telephone interview (debugging by CATI).

### **2.7.3 Use of administrative data sources**

To simplify the questionnaires, the questions on farm ownership were removed (legal personality of the holder, and sex and age of the holder in the case of natural persons).

The Tax ID Number of the holders was used.

This number, a unique 9-position alphanumeric code, can be used to ascertain the legal personality of the holding.

The variables of sex and age of individual farm holders were obtained by using the Tax ID Number to cross-reference the data collected in the census with the PADRÓN (Continuous Municipal Register).

The PADRÓN is an administrative dataset managed by the INE that is continuously updated by town and city councils. Its purpose is to provide the official population figures, approved by Royal Decree, of all Spanish municipalities at 1 January each year. It contains a list of all residents with the following variables, among others: Tax ID No., sex, age, place of birth, place of residence (with full postal address) and nationality.

In the interviews (CATI and PAPI), it was possible to obtain certain variables from the directory, indicating (**for guidance purposes only**) whether the holding was included in any of these administrative agricultural sources or in past statistical operations (FSS 1999 and 2007), which allowed the interview to be directed accordingly.

Finally, in the data editing phase and in order to contrast the quality of the data collected, other data sources were used, such as the Business Register, Agricultural Census 1999, FSS 2007, MARM Yearbook, Rural Property Registers, Organic Farms Register, IACS, Livestock Register and Rural Development Programmes.

## **2.8 Specific topics**

### **2.8.1 Common Land**

Common land was treated in exactly the same way as in previous censuses and surveys.

Common Lands in Spain are usually permanent grassland (2.03.01+2.03.02) used as pasture for cattle+ lands not forming part of the UAA [wooded area (2.05.02) + other lands (2.05.03)]. In most cases, Arable land and permanent crops are not part of Common Lands.

Common land area is only counted once.

In the case of common land used jointly by several holdings, since it is not possible to assign a specific section to each farmer, the common land is considered a separate holding and all the land (without the cattle grazing on it) is counted in that holding, as with any other. The relevant common or local authority (State, Autonomous community, neighbourhood community, parish, etc.) is listed as owner of the holding.

If during the agricultural production year, the owner leases or freely assigns all or part of the land to a single holding, the transferred/leased part is allocated to the holding that individually works this land.

Common lands are part of the list register or framework created before data collection. The population of common land holding surveyed is limited to holdings set down in point 2.5 *Population*. This means that basically only common lands holdings with UAA less than an hectare are excluded.

Common land not assigned/leased during the crop production year of the census totalled 4,205,593 hectares and 1,727,618 hectares of UAA.

1,339 common land units have been included in the sample for the OGA and SAPM. These holdings don't have data on variables related to "grazing on the holdings", "animal housing" and "OGA", but they can have data on other items of SAPM (irrigated area, linear elements maintained, etc.)

### **2.8.2 Geographical reference of the holding**

To determine the location of each holding, with its geographical longitude and latitude, it is not necessary to give precise coordinates; instead, each holding must be included in an area not exceeding that determined by a radius of five geographical minutes. To determine the location of each holding in one of these areas, the province and municipality to which the holding is allocated were used, which is the one in which most of the holding is located or where its livestock is declared

### 2.8.3 Volume of water used for irrigation

#### A) Introduction

During the first half of 2010, INE (Spain) carried out the second phase of the Agricultural Census 2009, by collecting additional data on production methods through the statistical operation Survey of Agriculture Production Methods (SAPM 2009).

Preliminary studies came to the conclusion on the non-feasibility of including in the questionnaires direct questions about amounts of water consumed by the holding , mainly because of the risk of incurring high observation and measurement errors. Consequently a decision was taken to launch a project of model assisted estimation in several stages, combining direct data with additional information available from external sources.

The development of the project took place in the Directorate of Business Structural and Environmental Statistics ( INE ). The Ministry of Environment and Rural and Marine Affairs (MARM) gave support in particular steps of the project, providing data bases containing specific agro climatic parameters and administrative data related to theoretical water needs , as explained bellow.

#### B) Statistical information available as input to the model

##### B.1 Data from the 2009 Census of Agriculture

In the 2009 Agricultural Census information was requested on the irrigated area per crops for each holding, according to a standard classification adapted to the requirements of the EU Regulation. At this point it is important to keep in mind the fact that the census files contain the same elementary identifiers as those used in the SAPM2009, as the latter is a sample of holdings drawn from the census, considered as sampling frame.

*The variables "Kitchen gardens" and "Greenhouses" are included in the calculation of the "Volume of water used for irrigation", but these variables are excluded from the variable "Irrigated once a year-total".*

##### B.2 Complementary information collected in SAPM 2009

Although the SAPM 2009 questionnaire does not provide direct information on water consumption by the holding, important data is collected about certain characteristics of irrigation: a) distribution (%) of the volume of water by source (surface, underground) and b) distribution (%) of the irrigated area per irrigation technique applied (localised, gravity , spray).

This final distribution will be used, as shown below, in the second stage of the model, called 'adjustment according to the efficiency of irrigation techniques'.

### B.3 Agro-climatic data

The Ministry of Environment and Rural and Marine Affairs (MARM) manages a network of 419 agro-climatic stations geo-referenced (through UTM coordinates) that register the weather-related and other parameters that condition the local growth of crops (rain, wind, sun, soil moisture). In particular, each agro-climatic station provides average evapo-transpiration data (ETP) which corresponds to that occurring on the surface of a standard plot completely covered with (common) grass.

It should be noted that a municipality and therefore the irrigated area of holdings included within them, are assigned to one, and only one, agro-climatic station.

### B.4 Irrigation Areas and crop coefficients

The MARM, as part of its preparatory technical studies for the elaboration of the National Hydrological Plan 2008 (NHP) conducted a subdivision of Spain in 811 irrigation areas, with its limits defined by UTM coordinates, defined on the basis of agronomic characteristics and water environment conditions (shared river basins, common water supply for the area, type of crops, among others). Within the irrigation area, each crop is assigned a crop coefficient  $K_c$ , adimensional, which is the correction factor to be applied to the standard evapo-transpiration ETP as defined above. The  $K_c$  for each crop within an irrigation area is identical, regardless of the situation of the crop. However,  $K_c$  coefficients of the same crop may vary from one irrigation area to another. MARM databases also allow to determine, for every crop present in the irrigation area, an associated  $q$  coefficient representing the weight of the crop acreage in respect of the total of the irrigation area.

## C) *Preparatory work of the auxiliary information for the model*

### C.1 Assigning agro-climatic stations to municipalities

In this stage, the correspondence between municipalities (about 8000 in Spain) and agro-climatic stations is defined. At this end, the cartography unit within INE, by using UTM coordinates, assigns the appropriate station to each municipality of the SPM 2009 frame, based on the geographical proximity to its centroid.

### C.2 Crops correspondence

The crop coefficients  $K_c$  to be introduced in the model, are available for 300 categories of crops that do not correspond with the 50 categories used in the agricultural census.

Crop categories used in the technical studies for the NHP (MARM) are aimed at classifying crops based on their water requirements and, particularly, to reflect its seasonality, while crop categories in the Agricultural Census follow an harmonized list, according to EU regulation on the Farm Structure Survey. It is therefore necessary to built a correspondence between crop categories used in the NHP 2008 (MARM crops from now on) and crop categories used in the Agricultural Census 2009 (INE crops in the following).

### C 3 Delimitation of polygons intersection municipality-irrigation area

When it comes to the spatial integration of the information, it may occur or not intersections between the polygons that form the municipalities and the polygons that form the irrigated areas, which poses further methodological problems. The following table summarizes the distribution of the number of polygons generated by the intersection of municipalities and irrigation areas:

Table C.1. Number of polygons resulting from the intersection municipality –irrigation area

Number of irrigation areas intersected	Number of municipalities	Number of intersecting polygons
1	3.017	3.017
2	2.963	5.926
3	1.293	3.879
4	538	2.152
5	185	925
6	89	534
7	33	231
8	30	240
9	13	117
10	8	80
11	4	44
12	3	36
13	2	26
15	1	15
30	1	30
Total	8.180	17.252

### D. First Step: Formulation of the theoretical water needs

Date bases described above make it possible to run the model algorithm to calculate the theoretical water needs , ( in cubic meters per Ha) for each and every crop found in a municipality corresponding to at least one holding included in the SAPM sample . Thus every irrigated crop within a sample holding will be assigned a theoretical amount of water need , to be understood as the water handed for irrigation in optimal conditions of availability , and in the absence of any losses in transport , deposit, or others.

Let be

M: Municipality;

a: irrigation area intersecting with municipality M;

n: INE crop;

j: MARM crop;

i: irrigation month ;

H: theoretical water needs;

$K_{ajin}$  : coefficient of irrigation in the area (a) of MARM crop (j) corresponding to INE crop (n), in month (i);

Let q be the relative weights:

$$\sum_{j \in a} q_{aj} = 1$$

corresponding to fraction of the acreage covered by each crop MARM (j) in respect of the total irrigated area (a).

Let be the adjusted weights of the MARM crops (j) corresponding to the same INE crop (n) such as:

$$\sum_{j \in a, n} \bar{q}_{ajin} = 1 ; \text{ where } \bar{q}_{ajin} = \frac{q_{ajin}}{\sum_{j \in a, i, n} q_{ajin}}$$

Let  $ETP_i^M$  and  $P_i^M$  be respectively the evapo-transpiration and monthly rainfall for the month i in the municipality M (agro-climatic station assigned by the criterion of proximity UTM to its centroid).

Then, the annual water needs, H, for an INE crop (n) in the irrigation area (a) that intersects with the municipality are given by the expression:

$$H_{an}^M = \sum_{j \in a, n} \bar{q}_{ajin} \sum_i^{12} (K_{ajin} \cdot ETP_i^M - P_i^M);$$

with  $H_{ajin}^M = 0$  if  $K_{ajin} \cdot ETP_i^M - P_i^M \leq 0$ , where  $H_{ajin}^M = K_{ajin} \cdot ETP_i^M - P_i^M$

Let w be the weights:

$$\sum_{a \in M} w_a^M = 1; \text{ corresponding to the intersection of each irrigation area with a municipality}$$

M, adjusted as

And

$$\bar{w}_{an}^M = \frac{w_a^M \delta_{an}}{\sum_{a \in M} w_a^M \delta_{an}}; \text{ with } \delta_{an} = 0 \text{ if and only if } \sum_{j \in n} q_{ajin} = 0; \delta_{an} = 1 \text{ if not;}$$

$$\text{Then: } H_n^M = \sum_{a \in M} \bar{w}_{an}^M H_{an}^M$$

(annual theoretical water needs for an INE crop n in a municipality M).



### *E. Second Step: Adjustments of theoretical water needs according to the efficiency of irrigation techniques*

At this stage of the model the theoretical water needs are adjusted with coefficients that take into account the impact of the efficiency of the irrigation methods.

These coefficients, given its definition, are lower than one. Currently they vary at the national level in the following ranges:

Gravity (g): 0.63 to 0.70; Spray (a): 0.70 to 0.90; Located (l): 0.90 to 0.95.

SAPM 2009 questionnaire collects in an ad hoc module the distribution of % of irrigated area under each irrigation technique within the holding. During the last decade a sustained and intensive increase of non-gravity irrigation techniques has been taking place in Spain.

Thus, the effective water needs of a crop (n) for a particular holding (i) in a municipality M becomes:

$$\bar{H}_{in}^M = H_n^M \cdot \frac{1}{(k^M(g)p_i(g) + k^M(a)p_i(a) + k^M(l)p_i(l))}$$

Where the theoretical water need is adjusted by the inverse of the mean of efficiency coefficients K of every irrigation technique (g, a, l), weighted by the % (p) declared in the SAPM 2009 questionnaire of the holding (i) for each applied technique. T

### *F. Imputation of effective water consumption by the holding*

Once the SAPM 2009 weights were made available, it was possible to estimate the theoretical water consumption, corrected by the efficiency of irrigation methods, for particular crop aggregates for which external sources on water consumption are regionally available. Sample design weights, corrected for non response were calibrated to Census marginals within NUT II (usable arable land, several livestock variables, irrigation area). The latter calibration variable is of the utmost interest for improving the efficiency of the estimation of water consumption by the agricultural holdings, which is the target variable of the modelling project dealt with here.

At this stage, an external source of a proven quality was used as a reference to adjust water consumption to exogenous totals at particular aggregation levels.

The external source chosen was the Survey of Water Use in the Agricultural Sector (SWUA) carried out by INE every year. The survey frame for this survey consists of lists of Irrigation Entities (IE) within a river basin. IE are professional associations of long tradition in Spain, which provide data of water supply to its associated holdings for a set of aggregates. Declared data on water supplied by IE included in the sample (which follows a cut-off sampling scheme, with an extensive coverage of more than 60% of total irrigation area served by IE in Spain) are expanded to total irrigated land estimated by MARM through its annual crop area survey.

Following the contrasts of SWUA data with the estimated aggregates output of the model, the effective water consumption of the holding can be formulated as:

$$VOLTE_{iC} = \sum_K \sum_{j \in K} SUP_{ijK} \bar{\bar{H}}_{ijKC};$$

with :

$$\bar{\bar{H}}_{ijKC} = \bar{H}_{ijKC} \frac{VOL(SWUA)_{KC}}{\sum_{i \in C} \sum_{j \in K} \bar{H}_{ijK} SUP_{ijK} w_i}$$

where the holding total water consumption is calculated through aggregation of water effective requirements of every crop declared by it in SAPM 09 , being:

i: SAPM 2009 sample holding

j: crop within the holding;

K : group of crops as in the Survey Of water use in Agriculture ( SWUA 2009) to which j belongs;

C : NUT II;

$\bar{H}_{ijKC}$  ( crop theoretical requirement, corrected by efficiency of irrigation techniques cubic meters per ha.)

$\bar{\bar{H}}_{ijKC}$  : effective water requirement per Ha

VOLT : aggregated water volumes SWUA

VOLTE: SAPM water volumes effectively consumed by the holding ( target variable) ;

SUP : area ( ha );

w: design weights SAPM 09 , corrected of non response and calibrated to Agric. Census 2009;

Taking into account expert contributions and the recommendations of the National Hydrological Plan 2008 ,the correction formulated above, which can be seen as corresponding to the so called management efficiency, has been bounded to the interval 0,7-1, imputing the closest extreme value when the original value falls out of the interval.

Table F.1 Effective Sample Distribution NUT II Survey of Agricultural Production Methods (SAPM) 2009

	Nº Census Holdings with irrigated land	Nº SAPM Holdings with irrigated land	%
Andalucía	102.924	3.854	3,7
Aragón	32.233	2.387	7,4
Asturias (Principado de)	11.373	908	8,0
Balears (Illes)	5.721	922	16,1
Canarias	10.732	1.339	12,5
Cantabria	3.039	419	13,8
Castilla y León	39.714	2.362	5,9
Castilla - La Mancha	32.470	1.970	6,1
Cataluña	35.603	1.974	5,5
Comunitat Valenciana	94.163	2.386	2,5
Extremadura	18.352	907	4,9
Galicia	55.869	3.481	6,2
Madrid (Comunidad de)	2.157	369	17,1
Murcia (Región de)	22.686	1.338	5,9
Navarra (Comun. Foral de)	9.083	1.089	12,0
País Vasco	11.673	11.673	100
Rioja (La)	5.969	642	10,8
Total	493.761	38.020	7,7

Table F.2 Sample Distribution SAPM 2009 of Irrigated Arable Land (Ha) SAPM 2009

	CENSUS	SAPM 2009	%
Andalucía	792.633	225.671	28,5
Aragón	368.369	79.746	21,6
Asturias (Principado de)	1.615	1.118	69,2
Balears (Illes)	12.668	4.443	35,1
Canarias	18.899	5.586	29,6
Cantabria	433	306	70,7
Castilla y León	403.091	63.244	15,7
Castilla - La Mancha	401.610	110.353	27,5
Cataluña	230.959	39.362	17,0
Comunitat Valenciana	266.656	44.528	16,7
Extremadura	190.750	47.027	24,7
Galicia	13.108	7.096	54,1
Madrid (Comunidad de)	19.281	8.124	42,1
Murcia (Región de)	143.639	53.283	37,1
Navarra (Comunidad Foral de)	69.868	21.530	30,8
País Vasco	7.266	7.273	100
Rioja (La)	26.771	6.856	25,6
Total	2.967.616	725.546	24,4

## G. Results

Table G.1 below shows, for the group of crops K, at the national level, aggregated results corresponding to the three main steps of the modelling process: theoretical requirements, ; volumes adjusted for irrigation techniques efficiency ; and effective consumption, corrected for management efficiency. Results are considered acceptable and consistent with expert knowledge, official recommendations and external sources fed with direct observations.

Not to forget that the implementation of the model has an extraordinary value added in itself. It provides an statistical tool with a great potential to improve significantly the quality of the estimations produced by current statistical operations which estimate aggregates and indicators of great relevance for international and national users, particularly in countries as Spain where this sector accounts for around 70% of all water used in a year.

Table G.1 SAPM 09 water volumes estimated in the three main steps of the modelling process.

Group of Crops (K)	Theoretical volume needs (1.000 m3)	Volumes adjusted for irrigation techniques efficiency ( 1.000 m3)	Effective water used (1.000 m3)	SAPM 09 Irrigated Area under crops (Ha)
Grass crops	3.761.446	5.141.849	4.662.840	909.196
Rice	806.685	1.175.769	978.101	83.196
Corn	1.838.927	2.576.968	2.323.327	288.118
Fruit trees	3.016.684	3.567.066	3.108.136	536.884
Potatoes and vegetables	1.094.679	1.323.179	1.321.608	252.841
Olive trees	1.574.180	1.788.429	1.430.789	497.515
Vineyard	820.498	943.978	691.829	213.804
Industrial crops	1.009.389	1.294.770	1.019.489	179.798
Others	819.178	1.131.526	1.120.665	132.103
TOTAL	14.741.666	18.943.538	16.656.784	3.093.455

### 2.8.4 Other issues

The main difference with previous surveys lies in the method of collection used, described in the previous sections of this report.

## 2.9 Response-burden policy

The following measures were taken to increase the response rate:

### Phases 1 and 2:

- The CA-09 mail questionnaire was designed specifically for self-completion. For the mailing phase, the breakdown of labour on the holding was separated from the general questionnaire to avoid creating confusion for respondents. This information was obtained where necessary through telephone calls in the CATI phase.
- The CA-09 questionnaire was accompanied in the mailing phase by detailed instructions for its completion, together with a census presentation letter indicating the requirement of completing the census questionnaires and compliance with data protection regulations through the duty of Statistical Confidentiality.
- A free helpline was set up to assist respondents throughout the mailing phase.
- To encourage the collaboration of farm holders, an advertising campaign was launched with informative posters to be displayed in public places and agricultural fairs, along with direct advertising inserted in the press, radio and television.
- Once the deadline for completion was reached (15 days), reminder letters were sent out to holders who had not collaborated. For regions with slower collection rates, a second reminder letter was sent out. As this proved so effective, it was not necessary to send out further mail reminders and any outstanding cases were redirected to CATI and PAPI.
- Helpline operators were instructed to divert certain respondents to the interview phase (elderly people or those with difficulties completing the questionnaire).
- Publicly owned farms (those owned by municipalities, public agencies, etc.) and holders of more than five farms were assigned from the outset to the interview phase.
- The questionnaires collected by mail were reviewed and, if found to be incomplete or to contain errors, further telephone contact was established with the respondents.
- Interviewers speaking Spanish and the co-official languages of the different Autonomous Communities (Catalan, Galician, Valencian and Euskera) were available both for the helpline and for the CATI interviews.



### Phase 3:

- Before the interview in this phase, an appointment letter was sent out with the date and place of the interview. This letter included a summary of the data that would be requested. Respondents were also reminded that their data would be protected by Statistical Confidentiality and that they were obliged to respond to the survey.

- Interviews were usually conducted at the respondent's address, although collection offices were set up in some municipalities.
- If the holder or appointee failed to attend the interview, he/she was sent a second letter making a new appointment.
- The Interviewers used mobile telephone numbers to confirm appointments.
- The problems of non-response observed by the Interviewers (refusal to cooperate or untraceable owners) were reported to the Inspectors, who then took the appropriate measures to solve these problems.

Given the low percentage of refusals during collection, it was only necessary to initiate the disciplinary proceedings established by the Government Statistics Act in a small number of cases.

The estimated completion times for the different collection methods were:

⇒ Self-completion in the mailing phase:	20 minutes
⇒ Self-completion in CAWI:	23 minutes
⇒ CATI interview:	15 minutes
⇒ PAPI. Interview for the FSS questionnaire:	12 minutes
⇒ PAPI. Interview for the SAPM questionnaire:	7 minutes
⇒ PAPI. Interview for the FSS+SAPM questionnaire:	19 minutes

### 3. ACCURACY AND RELIABILITY OF THE DATA COLLECTED

#### 3.1 Data processing, analysis and estimation

Calibrated estimators are constructed using relevant characteristics of the 09 Agricultural

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

Census as auxiliary information.

Hence, Y is the variable of interest for which we must estimate the population total:

$$Y = \sum_{h:1}^L Y_h \quad Y_h = \sum_{k:1}^{N_h} y_{hk}$$

where  $L$  denotes the number of strata and  $N_h$  the population size in the stratum  $h$ . The calibrated estimator is obtained by:

$$\hat{Y}_w = \sum_{h:1}^L \hat{Y}_{hw} \quad \hat{Y}_{hw} = \sum_{k:1}^{n_h} w_{hk} y_{hk}$$

where  $n_h$  is the sample size in the stratum  $h$  and the weights  $w_{hk}$  are calculated by solving the following problem:

$$\begin{aligned} & \text{Min}_{w_{hk}} \sum_{k \in s_c} d_{hk} G(w_{hk}/d_{hk}) \\ & \text{subject to} \\ & \sum_{k \in s_c} w_{hk} x_{jhk} = X_{cj} \quad \forall j = 1 \dots J \end{aligned}$$

where  $s_c$  indicates the sample in the Autonomous Community 'c',  $d_{hk}$  correspond to the design weights, inverse to the selection probabilities, used in the Horvitz-Thompson estimator of the total  $Y_h$ .

$$\hat{Y}_{h\pi} = \sum_{k \in s_h} \frac{1}{\pi_{hk}} y_{hk} = \sum_{k \in s_h} d_{hk} y_{hk}$$

$G(w_{hk}/d_{hk})$  is the distance function given by the following expression:

$$G(w_{hk}/d_{hk}) = G(r) = \left[ (r-1) \text{Log} \frac{r-1}{1-1} + (U-r) \text{Log} \frac{U-r}{U-1} \right] \frac{1}{A} \quad \text{si } 1 < r < U$$

$$\text{where } A = \frac{U-1}{(1-1)(U-1)}$$

The constants  $l$  and  $U$  represent the upper and lower limits of the quotients  $w_{hk}/d_{hk}$  and the variables  $X_{cj}; j:1..J$  represent the census characteristics selected in the Community 'c'.

To solve this problem, the CALMAR macro performed in SAS software by the French INSEE was applied.

### Estimators of sampling errors

The estimator of variance in the calibrated estimator is calculated using the weighted residuals technique (Särndal et al, Biometrika 1989, 76,3, pp 527-37). For stratified simple random sampling, the estimator of variance in the calibrated estimator in the stratum  $h$  is obtained by the following expression:

$$\hat{V}(\hat{Y}_{hw}) = N_h^2 \frac{1-f_h}{n_h} \frac{\sum_{k \in s_h} (w_k f_h e_{hk})^2}{n_h - 1}$$

where  $f_h = \frac{n_h}{N_h}$   $e_{hk} = y_k - x_k' \hat{B}_{hw}$

$$\hat{B}_{hw} = \frac{\sum_{s_h} w_k x_k y_k}{\sum_{s_h} w_k x_k x_k'}$$

The table below indicates the relative sampling errors or coefficients of variation (RSE) calculated as follows:

$$RS \hat{E}(\hat{Y}_w) = 100 \frac{\sqrt{\hat{V}(\hat{Y}_w)}}{\hat{Y}_w}$$

for the variables of the table included in 2.7.1.

NUTS2 regions with more than 10000 holdings  
Crop characteristics:

RSE %	Field codes	NUTS2 regions			
		'ES11	'ES12	'ES13	'ES21
Number of holdings in the NUTS2 region		0	0	0	0
UAA, ha of the NUTS2 region	A_3_1	0.44	1.2	2.2	0
Area of cereals in ha in the NUTS2 region	B_1_1	0	0	0	0
Area of potatoes and sugar beet in ha in the NUTS2 region	B_1_3 + B_1_4	0.09	0	0	0
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	39.3	0.	0	0
Area of permanent outdoor crops in ha in the NUTS2 region	B_4 - B_4_7	1.39	0.49	6.92	0
Area of fresh vegetables, melons, strawberries, flowers in ha in the NUTS2 region	B_1_7 + B_1_8	0	11.9	0	0
Area of temporary grass and permanent grassland in ha in the NUTS2 region	B_1_9_1 + B_3	0.6	1.27	2.27	0



Livestock characteristics:

RSE %		Field codes	NUTS2 regions			
			'ES11	'ES12	'ES13	'ES21
LSU in the NUTS2 region			0	0	0	0
Bovine animals (all ages)	Number of Bovine animals in the NUTS2 region, in LSU	$C_{2\_1} \cdot 0.4 + C_{2\_2} \cdot 0.7 + C_{2\_3} \cdot 0.7 + C_{2\_4} + C_{2\_5} \cdot 0.8 + C_{2\_6} + C_{2\_99} \cdot 0.8$	0.35	0.22	0.36	0
Sheep and goats (all ages)	Number of Sheep and goats in the NUTS2 region, in LSU	$C_{3\_1} \cdot 0.1 + C_{3\_2} \cdot 0.1$	0	0	0	0
Pigs	Number of Pigs in the NUTS2 region, in LSU	$C_{4\_1} \cdot 0.027 + C_{4\_2} \cdot 0.5 + C_{4\_99} \cdot 0.3$	2.26	19.1	5.43	0
Poultry	Number of Poultry in the NUTS2 region, in LSU	$C_{5\_1} \cdot 0.007 + C_{5\_2} \cdot 0.014 + C_{5\_3} \cdot 0.030$	1.36	6.58	0.77	0

NUTS2 regions with more than 10000 holdings

Crop characteristics:

RSE %		Field codes	NUTS2 regions			
			'ES22	'ES23	'ES24	'ES41
Number of holdings in the NUTS2 region			0	0	0	0
UAA, ha of the NUTS2 region		A_3_1	1.48	1.85	0.87	0.59
Area of cereals in ha in the NUTS2 region		B_1_1	0	0	0	0
Area of potatoes and sugar beet in ha in the NUTS2 region		B_1_3 + B_1_4	0	7.35	0.08	4.6
Area of oilseed crops in ha in the NUTS2 region		$B_{1\_6\_4} + B_{1\_6\_5} + B_{1\_6\_6} + B_{1\_6\_7} + B_{1\_6\_8}$	0.71	10.5	0.01	1.38
Area of permanent outdoor crops in ha in the NUTS2 region		B_4 - B_4_7	0.64	0.17	0.59	0.46
Area of fresh vegetables, melons, strawberries, flowers in ha in the NUTS2 region		B_1_7 + B_1_8	0	0	0	0
Area of temporary grass and permanent grassland in ha in the NUTS2 region		B_1_9_1 + B_3	3.43	4.59	2.3	1.51

Livestock characteristics:

<b>RSE %</b>		Field codes	NUTS2 regions			
			'ES22	'ES23	'ES24	'ES41
LSU in the NUTS2 region			0	0	0	0
Bovine animals (all ages)	Number of Bovine animals in the NUTS2 region, in LSU	$C_{2\_1} \cdot 0.4 + C_{2\_2} \cdot 0.7 + C_{2\_3} \cdot 0.7 + C_{2\_4} + C_{2\_5} \cdot 0.8 + C_{2\_6} + C_{2\_99} \cdot 0.8$	1.88	1	2.8	0.71
Sheep and goats (all ages)	Number of Sheep and goats in the NUTS2 region, in LSU	$C_{3\_1} \cdot 0.1 + C_{3\_2} \cdot 0.1$	0	0	0	0
Pigs	Number of Pigs in the NUTS2 region, in LSU	$C_{4\_1} \cdot 0.027 + C_{4\_2} \cdot 0.5 + C_{4\_99} \cdot 0.3$	3.13	2.21	1.52	1.73
Poultry	Number of Poultry in the NUTS2 region, in LSU	$C_{5\_1} \cdot 0.007 + C_{5\_2} \cdot 0.014 + C_{5\_3} \cdot 0.030$	0.05	0.01	0.65	0.75

NUTS2 regions with more than 10000 holdings

Crop characteristics:

<b>RSE %</b>		Field codes	NUTS2 regions			
			'ES42	'ES43	'ES51	'ES52
Number of holdings in the NUTS2 region			0	0	0	0
UAA, ha of the NUTS2 region		A_3_1	0.31	0.65	0.66	0.38
Area of cereals in ha in the NUTS2 region		B_1_1	0	0	0	0
Area of potatoes and sugar beet in ha in the NUTS2 region		B_1_3 + B_1_4	19.5	0	34	0
Area of oilseed crops in ha in the NUTS2 region		$B_{1\_6\_4} + B_{1\_6\_5} + B_{1\_6\_6} + B_{1\_6\_7} + B_{1\_6\_8}$	0.44	8.13	10.3	7.79
Area of permanent outdoor crops in ha in the NUTS2 region		B_4 - B_4_7	0	0.01	0.49	0.27
Area of fresh vegetables, melons, strawberries, flowers in ha in the NUTS2 region		B_1_7 + B_1_8	0	0	0	0
Area of temporary grass and permanent grassland in ha in the NUTS2 region		B_1_9_1 + B_3	1.86	1.07	1.87	2.03

Livestock characteristics:

RSE%		Field codes	NUTS2 regions			
			'ES42	'ES43	'ES51	'ES52
LSU in the NUTS2 region			0	0	0	0
Bovine animals (all ages)	Number of Bovine animals in the NUTS2 region, in LSU	$C_{2\_1} \cdot 0.4 + C_{2\_2} \cdot 0.7 + C_{2\_3} \cdot 0.7 + C_{2\_4} + C_{2\_5} \cdot 0.8 + C_{2\_6} + C_{2\_99} \cdot 0.8$	1.27	0.35	2.82	1.11
Sheep and goats (all ages)	Number of Sheep and goats in the NUTS2 region, in LSU	$C_{3\_1} \cdot 0.1 + C_{3\_2} \cdot 0.1$	0	0	0	0
Pigs	Number of Pigs in the NUTS2 region, in LSU	$C_{4\_1} \cdot 0.027 + C_{4\_2} \cdot 0.5 + C_{4\_99} \cdot 0.3$	1.3	2.66	5.4	0.84
Poultry	Number of Poultry in the NUTS2 region, in LSU	$C_{5\_1} \cdot 0.007 + C_{5\_2} \cdot 0.014 + C_{5\_3} \cdot 0.030$	0.82	3.93	2.33	0.77

NUTS2 regions with more than 10000 holdings

Crop characteristics:

RSE%		Field codes	NUTS2 regions			
			ES53	'ES61	'ES62	'ES70
Number of holdings in the NUTS2 region			0	0	0	0
UAA, ha of the NUTS2 region		A_3_1	0.5	0.35	0.42	0.5
Area of cereals in ha in the NUTS2 region		B_1_1	0	0	0	0
Area of potatoes and sugar beet in ha in the NUTS2 region		B_1_3 + B_1_4	18.8	7.83	0	0.38
Area of oilseed crops in ha in the NUTS2 region		$B_{1\_6\_4} + B_{1\_6\_5} + B_{1\_6\_6} + B_{1\_6\_7} + B_{1\_6\_8}$	107	1.18	68.7	67.6
Area of permanent outdoor crops in ha in the NUTS2 region		B_4 - B_4_7	1.84	0.06	0.33	0.51
Area of fresh vegetables, melons, strawberries, flowers in ha in the NUTS2 region		B_1_7 + B_1_8	16.6	0	0	0
Area of temporary grass and permanent grassland in ha in the NUTS2 region		B_1_9_1 + B_3	1.09	1.24	7.43	1.21

Livestock characteristics:

RSE %	Field codes	NUTS2 regions			
		ES53	'ES61	'ES62	'ES70
LSU in the NUTS2 region		0	0	0	0
Bovine animals (all ages)	Number of Bovine animals in the NUTS2 region, in LSU $C_{2\_1} \cdot 0.4 + C_{2\_2} \cdot 0.7 + C_{2\_3} \cdot 0.7 + C_{2\_4} + C_{2\_5} \cdot 0.8 + C_{2\_6} + C_{2\_99} \cdot 0.8$	2.57	0.4	1.32	1.13
Sheep and goats (all ages)	Number of Sheep and goats in the NUTS2 region, in LSU $C_{3\_1} \cdot 0.1 + C_{3\_2} \cdot 0.1$	0	0	0	0
Pigs	Number of Pigs in the NUTS2 region, in LSU $C_{4\_1} \cdot 0.027 + C_{4\_2} \cdot 0.5 + C_{4\_99} \cdot 0.3$	2.91	1.71	0.51	2.23
Poultry	Number of Poultry in the NUTS2 region, in LSU $C_{5\_1} \cdot 0.007 + C_{5\_2} \cdot 0.014 + C_{5\_3} \cdot 0.030$	0.64	2.67	2.13	0.1

NUTS2 regions with less than 10000 holdings

Crop characteristics:

RSE %	Field codes	NUTS2 regions		
		ES30	ES63 (*)	ES64(*)
Number of holdings in the NUTS2 region		0	NA	NA
Associated NUTS1 region		ES3	ES6	ES6
Number of holdings of the associated NUTS1 region		0	0	0
UAA, ha of the associated NUTS1 region	A_3_1	1.23	0.29	0.29
Area of cereals in ha in the associated NUTS1 region with at least 1000 holdings	B_1_1	0	0	0
Area of potatoes and sugar beet in ha in the associated NUTS1 region with at least 1000 holdings	B_1_3 + B_1_4	34.7	6.4	6.4
Area of oilseed crops in ha in the associated NUTS1 region with at least 1000 holdings	$B_{1\_6\_4} + B_{1\_6\_5} + B_{1\_6\_6} + B_{1\_6\_7} + B_{1\_6\_8}$	26	1.1	1.1
Area of permanent outdoor crops in ha in the associated NUTS1 region with at least 1000 holdings	B_4 - B_4_7	0.4	0.1	0.1
Area of fresh vegetables, melons, strawberries, flowers in ha in the NUTS2 region	B_1_7 + B_1_8	0	0	0
Area of temporary grass and permanent grassland in ha in the associated NUTS1 region with at least 1000 holdings	B_1_9_1 + B_3	2.78	1.1	1.1

(\*) NA: There is not sample in ES63 and ES64.

The rest of figures correspond to RSE % of NUTS1 ES6.

Livestock characteristics:

RSE %		NUTS2 regions		
		ES30	ES63	ES64
Precision requirements		Field codes		
LSU in the associated NUTS1 region		0	0	0
Bovine animals (all ages)	Number of Bovine animals in the associated NUTS1 region with at least 1000 holdings, in LSU	$C_{2\_1} \cdot 0.4 + C_{2\_2} \cdot 0.7 + C_{2\_3} \cdot 0.7 + C_{2\_4} + C_{2\_5} \cdot 0.8 + C_{2\_6} + C_{2\_99} \cdot 0.8$	0.6	0.5
Sheep and goats (all ages)	Number of Sheep and goats in the associated NUTS1 region with at least 1000 holdings, in LSU	$C_{3\_1} \cdot 0.1 + C_{3\_2} \cdot 0.1$	0	0
Pigs	Number of Pigs in the associated NUTS1 region with at least 1000 holdings, in LSU	$C_{4\_1} \cdot 0.027 + C_{4\_2} \cdot 0.5 + C_{4\_99} \cdot 0.3$	0.68	1.4
Poultry	Number of Poultry in the associated NUTS1 region with at least 1000 holdings, in LSU	$C_{5\_1} \cdot 0.007 + C_{5\_2} \cdot 0.014 + C_{5\_3} \cdot 0.030$	0.15	2.0

### 3.1.2 Non sampling errors

During collection and at the end of this task (April 2010), the holdings surveyed for the Agricultural Census 2009 were classified into one of the following collection statuses or situations.

- RE: questionnaire collected from a holding with agricultural or livestock use.
- AB: questionnaire collected from a holding with no crops or livestock, including abandoned holdings and those that **only** have land with no livestock or agricultural use (fallow land, thickets, woodlands, threshing floors...).
- OF: holding in which **all** the land and livestock facilities owned by the farm holder **are used for non-agricultural purposes** (cropland, stables, kennels, zoos...).
- CE: the owner of the holding states that he/she no longer owns **any** part thereof (neither land nor fixed livestock facilities) because the holding has been sold or assigned in full.
- EI: holding or owner erroneously included in the Census Directory.
- DU: duplicate holding in the census directory (duplicate holdings or joint holders of the same holding).
- DF: the owner of the holding has died and it has not been possible to identify or locate the heir.
- IL: untraceable: holding whose owner or applicable respondent could not be contacted to provide information on the holding, despite several attempts.
- Pending collection. Includes refusals to cooperate and other cases that remained pending at the end of the fieldwork for the relevant phase and which could not for any reason be redirected to another phase.

In the Basque Country, 450 new holdings were added to the initial directory (31,540 holdings) during the fieldwork. The fieldwork by final collection status was as follows:

	TOTAL	%
-	RE= 17,555	54.87
-	AB= 238	0.74
-	CE = 1,668	5.22
-	EI = 8,137	25.44
-	DU = 1,870	5.85
-	DF = 745	2.33
-	IL = 1,399	4.37
-	Pending = 378	1.18

In INE's scope, 20,990 new holdings were added to the initial directory (1,418,245 holdings) during the fieldwork.

The following tables indicate the collection status of census holdings at the end of the fieldwork. In these tables, each holding is considered to be assigned to the phase in which it was eventually resolved or, if appropriate, it remained pending.

## Agriculture census collection 2009.

Number of holdings by final collection status at end of fieldwork

Collection method and phase	Total	RE	AB	OF	CE	EI	DU	DF	IL	Pending
<b>Total</b>	<b>1.439.235</b>	<b>1.032.794</b>	<b>64.409</b>	<b>24.177</b>	<b>176.286</b>	<b>56.718</b>	<b>27.833</b>	<b>8.722</b>	<b>31.828</b>	<b>16.468</b>
Phase 1. Total	<b>1.106.179</b>	855.362	42.193	22.601	125.909	33.805	21.629	1.555	19	3.106
Mail	<b>784.240</b>	661.745	20.267	14.440	66.028	9.917	7.645	1.073	19	3.106
CAWI	<b>236.911</b>	193.138	5.650	7.141	27.634	3.348	.	.	.	0
L900	<b>85.028</b>	479	16.276	1.020	32.247	20.540	13.984	482	.	0
Phase 2. CATI	<b>148.903</b>	84.163	9.932	743	20.920	12.448	.	2.035	11.134	7.528
Phase 3. PAPI	<b>184.153</b>	93.269	12.284	833	29.457	10.465	6.204	5.132	20.675	5.834

*Note: in these tables, each holding is classified by the collection phase and method through which it was completed or left as pending, which is why there are no pending holdings in CAWI and CATI (since they were transferred to another phase)*

### As a % of all holdings

Collection method and phase	Total	RE	AB	OF	CE	EI	DU	DF	IL	Pending
<b>Total</b>	<b>100,0%</b>	<b>71,8%</b>	<b>4,5%</b>	<b>1,7%</b>	<b>12,2%</b>	<b>3,9%</b>	<b>1,9%</b>	<b>0,6%</b>	<b>2,2%</b>	<b>1,1%</b>
Phase 1. Total	<b>76,9%</b>	59,4%	2,9%	1,6%	8,7%	2,3%	1,5%	0,1%	0,0%	0,2%
Mail	<b>54,5%</b>	46,0%	1,4%	1,0%	4,6%	0,7%	0,5%	0,1%	0,0%	0,2%
CAWI	<b>16,5%</b>	13,4%	0,4%	0,5%	1,9%	0,2%	.	.	.	.
L900	<b>5,9%</b>	0,0%	1,1%	0,1%	2,2%	1,4%	1,0%	0,0%	.	.
Phase 2. CATI	<b>10,3%</b>	5,8%	0,7%	0,1%	1,5%	0,9%	.	0,1%	0,8%	0,5%
Phase 3. PAPI	<b>12,8%</b>	6,5%	0,9%	0,1%	2,0%	0,7%	0,4%	0,4%	1,4%	0,4%

### As a % of the total for each phase and collection method

Collection method and phase	Total	RE	AB	OF	CE	EI	DU	DF	IL	Pending
<b>Total</b>	<b>100,0%</b>	<b>71,8%</b>	<b>4,5%</b>	<b>1,7%</b>	<b>12,2%</b>	<b>3,9%</b>	<b>1,9%</b>	<b>0,6%</b>	<b>2,2%</b>	<b>1,1%</b>
Phase 1. Total	<b>100,0%</b>	77,3%	3,8%	2,0%	11,4%	3,1%	2,0%	0,1%	0,0%	0,3%
Mail	<b>100,0%</b>	84,4%	2,6%	1,8%	8,4%	1,3%	1,0%	0,1%	0,0%	0,4%
CAWI	<b>100,0%</b>	81,5%	2,4%	3,0%	11,7%	1,4%	.	.	.	.
L900	<b>100,0%</b>	0,6%	19,1%	1,2%	37,9%	24,2%	16,4%	0,6%	.	.
Phase 2. CATI	<b>100,0%</b>	56,5%	6,7%	0,5%	14,0%	8,4%	.	1,4%	7,5%	5,1%
Phase 3. PAPI	<b>100,0%</b>	50,6%	6,7%	0,5%	16,0%	5,7%	3,4%	2,8%	11,2%	3,2%

### As a % of the total for each collection status

Collection method and phase	Total	RE	AB	OF	CE	EI	DU	DF	IL	Pending
<b>Total</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>	<b>100,0%</b>
Phase 1. Total	<b>76,9%</b>	82,8%	65,5%	93,5%	71,4%	59,6%	77,7%	17,8%	0,1%	18,9%
Mail	<b>54,5%</b>	64,1%	31,5%	59,7%	37,5%	17,5%	27,5%	12,3%	0,1%	18,9%
CAWI	<b>16,5%</b>	18,7%	8,8%	29,5%	15,7%	5,9%	.	.	.	.
L900	<b>5,9%</b>	0,0%	25,3%	4,2%	18,3%	36,2%	50,2%	5,5%	.	.
Phase 2. CATI	<b>10,3%</b>	8,1%	15,4%	3,1%	11,9%	21,9%	.	23,3%	35,0%	45,7%
Phase 3. PAPI	<b>12,8%</b>	9,0%	19,1%	3,4%	16,7%	18,5%	22,3%	58,8%	65,0%	35,4%

## Collection of Production Methods Survey 2009

Number of holdings by final collection status at end of fieldwork

	Total	RE	AB	OF	CE	EI	DU	DF	IL	Pending
<b>Total</b>	<b>69.181</b>	<b>57.803</b>	<b>975</b>	<b>127</b>	<b>2.546</b>	<b>3.616</b>	<b>1.659</b>	<b>256</b>	<b>1.758</b>	<b>441</b>
%	100%	84%	1%	0%	4%	5%	2%	0%	3%	1%

### 3.1.3 Methods for handling missing or incorrect data items

#### Error tracking and post-recording editing

The post-recording editing was performed centrally by the Promoting Unit, which hired a team of editors for the task. They have experience in other statistical operations carried out by INE.

The received a special course for editing and they were under supervision of the Promoting Unit during the editing phase. Also, previously to the editing tasks, they participated in the fieldworks of the phase 3 and they had an additional training for it in the INE Provincial Offices.

A customised interactive application was designed for this purpose. It was planned and coordinated according to the specifications of the Promoting Unit, through the SGICT, and with outside support from an analyst and two programmers.

The datasets obtained from the recording stage were uploaded into a centralised database in DB2 to allow editors access to the records in query and update mode through an application developed in Natural Windows.

This application detects and lists coverage errors (duplicates, misidentification, etc.) and mistakes in the internal consistency of questionnaires (partial absence of data in a questionnaire, inconsistent data between different variables and control of the range and the existence of quantitative variables). It also detects and lists controls of outliers, such as crops that appear in certain regions in which they had not previously appeared.

In all, more than 176 controls were set up.

When the editor detected the error, he or she could change the questionnaire data through this application. It also allowed editors to bring up a scanned image of the questionnaire, where available, to assist with the editing process.

The Initial Directory had 1,449,785 holdings and 21,440 holdings were added during the fieldwork according the following table:

	INE's scope	Basque Country	TOTAL SPAIN
Initial Directory	1,418,245	31,540	1,449,785
New Holdings	20,990	450	21,440
Initial Directory + New Holdings	1,439,235	31,990	1,471,225

1,471,225 holdings were classified into one of the mentioned collection statuses or situations (3.1.2 Non sampling errors). Only 1,366,419 holdings had a CAWI, a CATI or a



PAPER questionnaire and were included in the database for editing (some collection status did not have questionnaire).

Of these 1,366,419 holdings, 1,133,654 questionnaires had data on surface area and/or livestock, regardless of the issue (some questionnaires did not have FSS data).

Of the 1,133,654 questionnaires, 32,134 were duplicates and 146,476 were outside the set threshold.

The database also had 77,706 questionnaires from the Production Methods Survey (SAPM), of which 19,399 were collected by the Basque Country and 58,307 were from the rest of Spain and collected by INE.

Of these, 800 were duplicates (there were two or more questionnaires for the same holding), 513 could not be allocated their census questionnaire because the number of the census questionnaire could not be matched, 1,658 were repeat census questionnaires and 2,189 were incidences that did not result in a census questionnaire.

Editing was performed by matching the FSS questionnaires to their corresponding SAPMs as follows:

Firstly, 32,134 repeat questionnaires were deleted to eliminate duplicates. This repetition was due to the overlap of the three collection phases and the existence of 2 or more versions of questionnaires in different languages.

Secondly, 64% of the largest holdings of the 146,476 outside the set threshold were surveyed. These were checked to confirm that they were indeed outside the threshold, as opposed to being due to problems with the units of measurement used in the questionnaire (correct conversion of the local unit of measurement to hectares) or recording errors. After editing, the number of questionnaires that did not meet the threshold totalled 88,608.

Thirdly, the allocation of holdings was edited. A total of 11,509 questionnaires had location code errors (incorrect province or municipality codes or one of the two was missing).

Fourthly, holder IDs were corrected (no Tax ID No. or incorrect Tax ID No.). For this step, the editors did a manual search in PADRÓN for 2,300 Tax ID Numbers using names and surnames.

Lastly, the holdings resulting from the above process (i.e. corrected location and NIF and without issues or duplicates) underwent the editing process *per se*. A check on 169 errors was carried out in each questionnaire to detect data inconsistencies or outliers. The number of holdings with errors was 364.894.

## **Automatic Imputation**

Following the manual correction of errors and prior to obtaining the datasets with the final data, all questionnaires underwent a process of automatic data imputation (AIP).

This phase was programmed entirely by the IT Unit of INE based on the specifications of the Promoting Unit.

The AIP comprises nineteen blocks, each of which performs a specific function. Blocks are applied in the sequence 1 to 19 to each holding; each block basically conducts three types of operation:

- Queries to detect inconsistencies.
- Queries to acquire information from the questionnaire itself where inconsistencies have been detected.
- Imputations as necessary.

If there are no inconsistencies, the block makes no imputations to the holding in question and moves on to the next holding. If a block applies imputations to a holding, the amended data are final; therefore, queries made by subsequent blocks refer to the updated rather than the original data. This also applies within each block. Queries made after application of one or more imputations always refer to the updated status of data, even where modified within the process of that same block.

Imputations are of two general types. One type is deduced from the information in the questionnaire itself by applying given criteria, while the second type requires recourse to external information to make up for missing data in the questionnaire. Imputations of the first type, where they relate to arithmetic inconsistencies, squaring up sums for instance, generally operate by imputing new data in proportion to those appearing in the questionnaire the sum of which verifies the desired consistency condition. Imputations of the second kind refer to information drawn from a set of Hot Deck (HD) matrices designed for the purpose, which record data for holdings processed previously. The information is classified by size (total surface area) of holdings; when used to remedy arithmetic inconsistencies, new data are imputed following the same criterion of proportional allocation. HD matrices have to be set up prior to the process in respect of each province, based on the highest probability as given by earlier surveys and the agricultural statistics annual.

Automatic imputation never makes imputations to all characteristics of a questionnaire. According to the status collection, the non-response rate is 1.16%.

The imputation phase affected 10,8% of the records registered (989,796 holdings) and it includes all inconsistencies between different items of the questionnaires, items “without data” (item non-response) or items with “no valid data”. The item non-response is 3.31%.

### **Final datasets**

After automatic imputation and its data analysis, the aggregate variables were calculated: Annual Working Units (AWU), Livestock Units (LSU), Total Standard Output (TSO) and Type of Farming (TF). The latter two were obtained after cross-referencing our dataset with the Standard Outputs (SO) dataset, provided by the MARM.

### **Control of the data**

During the collection and recording phases for mailed questionnaires, the data underwent a dual check, with a quality control of recording and control of the data supplied.

The quality control of the data recording was confirmed by the SGTIC.

It consisted of the repeat recording of a random sample of questionnaires, allowing an average error of no more than 6 per thousand of all recorded batches controlled.

The external collection company also conducted a preliminary review of the data using a list of error specifications provided by INE. All questionnaires containing errors were corrected. A check was carried out on this error review by the continuous selection of a random sample of questionnaires received by mail.

The CAWI programming incorporated the same error controls as the questionnaires received by mail, so the CAWI process could only be completed if the data contained no errors.

Similar checks on errors and inconsistencies during the interview were also included in the CATI software application to ensure that questionnaires were completed properly.

During Phase 3, the FSS and SAPM questionnaires were also reviewed by the census agent and subsequently supervised by the Interviewer Inspector.

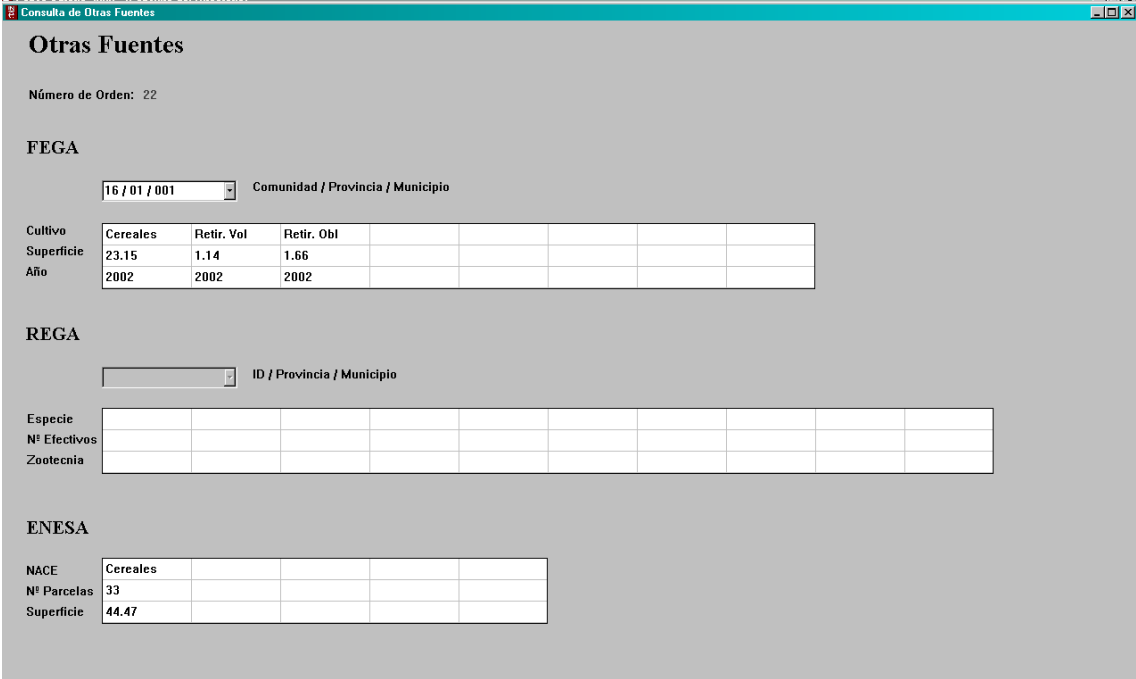
The control of data after recording was described in the previous section.

## **3.2 Evaluation of results**

The results were evaluated continuously throughout editing.

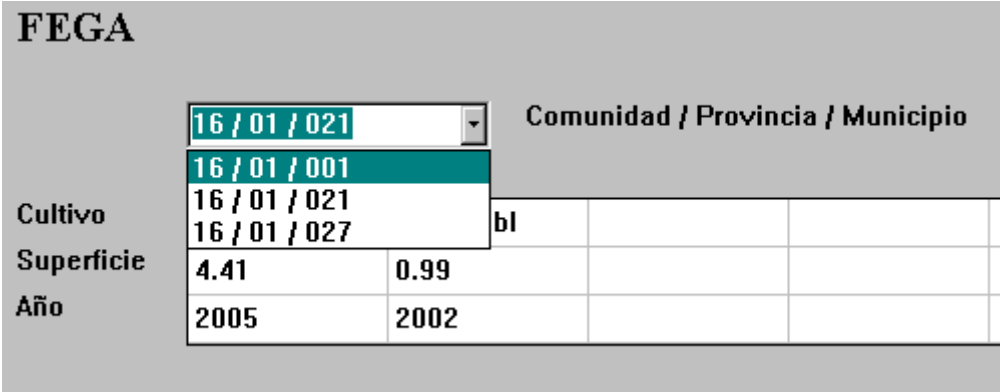
During centralised editing, the application indicated whether the holding was included in another source of information, such as the Agricultural Census 1999, FSS 2007, IACS or

the Livestock Register, among others. This allowed the editor to compare information at micro level. The application shows images like the following one:



FEGA: IACS  
 REGA: Livestock Register  
 ENESA: Agricultural Insurance

The pull-down serves to elect for the municipality:



As the editing progresses, the application generated aggregate results for macro-level comparisons. This unable the checking with other external sources of information: Agricultural Census 1999, FSS 2007, MARM Yearbook and Rural Property Registers.

Prior to final approval of the data, the results were again compared. In the comparisons, we had into account that it could be differences due to several reasons. FSS is a census and crop statistics is a survey. In FSS, the unit of information is the farm above the mentioned threshold in the NMR and the information units in crop statistics are parcels based in an area frame sampling design. The reference periods are also different. The

used definitions could be not the same. Due to the fact that FSS excludes small holdings, in general, FSS data are smaller than crop statistics data. The differences between these two operations could be greater in those cultures that have small surfaces per holding like vineyards, olives, and other cultures depending on the Region.

Regarding livestock characteristics, the differences could also be explained by several reasons. The periods of reference of both statistics are not the same. The date of reference in FSS is 30<sup>th</sup> September of 2009. The population investigated in FSS includes all farms with 1 or more LSU and TSO equal to or above 0.75 ES. Our figures are related to number of heads and not places.

See below an example of the checking with data from Ministry of Agriculture.

<b>CANTABRIA</b>				
	<b>FSS 2009</b>	<b>FSS 1999</b>	<b>FSS 2007</b>	<b>M. of Agriculture <sup>(1)</sup></b>
<b>CEREALS</b>	1694,06	1627,64	2740,90843	983
<b>PULSES</b>	68,09	69,57	56,76106	64
<b>POTATOES</b>	223,4	271	207,16877	152
<b>INDUSTRIAL PLANTS</b>	103,43	25,55	73,0831	80
<b>FORAGE PLANTS</b>	3817,8	3517,45	2707,97883	4072
<b>FALLOW LAND</b>	871,01	110,63	109,573	213
<b>PERMANENT CROPS</b>	281,99	214,08		50
<b>VINEYARDS</b>	19,77	18,2	40,01627	19
<b>NURSERIES</b>	38,25	17	6,69	2
<b>PERMANENT GRASSLAND AND MEADOW</b>	227887,1	268935,23	278762,6227	232709
<b>PIGS</b>	3157	16966	15359,231	3874
<b>GOATS</b>	17192	19806	13759,423	29270
<b>SHEEPS</b>	52628	74076	58099,318	83230
<b>BOVINES</b>	278456	343574	267274,857	264909

(1) Crop statistic

Other checkings were made with data from Livestock Register.

<b>CCAA</b>	<b>Bovines FSS 2009</b>	<b>Bovines FSS 1999</b>	<b>Bovines (Livestock Register)</b>
<b>Andalucía</b>	538909	564255	562908
<b>Aragón</b>	330515	334570	228706
<b>Asturias</b>	389389	459584	356393
<b>Baleares</b>	32895	46925	32116
<b>Canarias</b>	15527	21129	16812
<b>Cantabria</b>	278456	343574	245471
<b>Castilla y León</b>	1220631	1286267	1131298
<b>Castilla la Mancha</b>	355471	348092	302979
<b>Cataluña</b>	544135	690852	676856
<b>Comunidad Valenciana</b>	51001	60473	59711
<b>Extremadura</b>	675638	594195	728349
<b>Galicia</b>	971538	1078812	886279
<b>Madrid</b>	92552	112583	96432
<b>Murcia</b>	57339	58713	52504
<b>Navarra</b>	108065	116777	90040
<b>País Vasco</b>	136246	179223	140877
<b>La Rioja</b>	42487	50412	36627

The following table summarises the validation process described above:

	Survey		
	FSS (excl. OGA in case of sample survey)	OGA (if sample survey)(1)	SAPM (if sample survey)(1)
Initial list of units	1.449.785	1.449.785	1.449.785
Initial sample	NA	100.721	100.721
Number of holdings with completed questionnaires (incl. Eventual imputed questionnaires):	989.796	72.520	72.520
Number of units under the threshold applied *	88.608	12.256	12.256
Holdings with ceased activities:	266.778	5.554	5.554
- (If information is available) of which definitely ceased, i.e. the land is abandoned	64.647	1.213	1.213
- (If information is available) of which holdings with change of the manager	NA	NA	NA
Unit Non-response:	16.846	819	819
- Refusals – not corrected	16.846	819	819
- Refusals – corrected (imputed)	0	0	0
Number of records transferred to Eurostat **	989.796	72.520	72.520
Common land units (A_2_1)	4.696	1.339	1.339

\* 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 is 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.

(1) Basque Country is included although in this territory, we investigated all units..

## Comments on major trends from FSS 2007 to FSS 2010.

A comparison of the most relevant results obtained in FSS 2009 and FSS 2007 now follows:

	From FSS 2007	From FSS 2010	Difference in %	Comments
Number of holdings;	1.043.907	989.796	-5,18	
UAA (A_3_1), ha;	24.892.517	23.752.688	-4,58	
Arable land, ha;	11.882.967	11.286.007	-5,02	
Permanent grassland (B_3), ha;	8.649.788	8.377.389	-3,15	
Permanent crops (B_4), ha;	4.355.273	4.086.242	-6,18	
Wooded area (B_5_2), ha;	4.859.224	4.643.408	-4,44	
Unutilised Agricultural area (B_5_1), ha;	462.411	139.863	-69,75	NOTE 1
Fallow land (B_1_12_1+B_1_12_2), ha;	2.628.315	2.663.961	1,36	
LSU in LSU;	14.380.626	14.830.941	3,13	
Cattle (C_2), head;	5.740.562	5.840.801	1,75	
Family Labour force - in persons;	2.144.036	2.019.596	-5,80	
Family Labour force - in AWU;	625.540	564.093	-9,82	
Non family labour force - in persons;	210.173	275.260	30,97	NOTE 2
* Non family labour force - in AWU	342.145	325.405	-4,89	

\* "Non-family members non-regularly employed" are not included

### 3.3 Data Revision Policy

As indicated elsewhere in this report, the data revision policy was very strict. More revisions were required than originally planned because of the threefold collection method, which produced more errors than in previous FSS that used personal interviews. In particular, the 14 variables of the above table were subject to special analysis at various levels of regional disaggregation: municipal, district, provincial and by Autonomous community.

This has helped to achieve the same quality as previous Censuses and Surveys.

## 4. ACCESSIBILITY AND PUNCTUALITY

### 4.1 Publications

The methodology of the Agricultural Census 2009 was published in 2009, prior to completion of the fieldwork. This publication details the background, aims, content, concepts and definitions, units of measurement and types of holding, data collection and dissemination of data to be used.



2009 FSS results were published on the INE website on 14<sup>th</sup> of July of 2011. These contain general information about land use, land tenure, holding size, legal status, livestock, organic production, renewable energy production, rural development and labour force. The results are disaggregated at provincial, Autonomous community and national level.

Apart from that, in October 2011 it was established a new development for the dissemination of the results through a Data Warehouse (DW) system that was custom developed. The system provides information processing power, greater flexibility and faster access to information (including custom queries), which will reduce response times and operating costs.

Finally, SAPM and OGA results were published on the INE website on 30<sup>th</sup> of January of 2012.

## **4.2 Timeliness and Punctuality**

No interim results have been published.

The time lag for the final census results is 21 months, which is seven months earlier than the lag for the 1999 census.

They were no delays in the publication of the results.

## **5. CONFIDENTIALITY AND SECURITY**

Statistics supplied to the National Statistical Institute are protected by statistical confidentiality. Statistical confidentiality is a mechanism for the confidence and reassurance of respondents that protects data obtained for statistical purposes.

Chapter III of the Government Statistics Act of 9 May 1989 regulates all aspects of statistical confidentiality. According to this legislation:

- Any personal data procured by statistical offices shall be protected by statistical confidentiality.
- All statistical staff are under a duty to preserve statistical confidentiality. The duty of statistical confidentiality shall survive even after persons bound by such duty end their occupational activities or their relations with statistical units.

In addition to the planned publications, the micro datasets are available to all users. These datasets have been anonymised by removing all variables identifying the holder.

## **ENDNOTES**

**NOTE 1.** The decrease of unutilised agricultural land is justified by the general decrease of the total area. Over the years surfaces with no cultures are transformed in wooded area or other land which are outside the investigated population. This effect is more evident between 2007 and 2009 due to the fact that FSS 2007 is conducted using a fix panel obtained from the last census.

**NOTE 2.** The increase of people in the category Non-family labour force is mainly explained by the change in the holder's status. In 2007, the legal personality represented 5,35% of the total holdings, while in 2009 the percentage is 6,07%. This increase has produced a change in the classification of the workers. People classified under family labour force in 2007 are being now classified as non-family labour force.

## **ANNEXES**

1. Questionnaire for FSS collection. Mod. CA-09.
2. Questionnaire for SAPM and PGA collection. Mod. MP-09.
3. Breakdown of labour employed on the holding. Mod. MO-09.

ANNEXE 1.- Questionnaire for FSS Collection.  
Mod CA – 09



2009

Número de cuestionario:

DOCUMENTO PROTEGIDO

POR EL SECRETO ESTADÍSTICO

**Obligatoriedad.** Las leyes 4/1990 y 13/1996 establecen la obligación de facilitar los datos que se soliciten para la elaboración de esta estadística

**Plazo de cumplimentación:** Todo receptor de este cuestionario (o en su caso la persona "informante" que pueda responder por él) ha de devolverlo cumplimentado **en los 15 días** siguientes a su recepción.



En cumplimiento del Reglamento CE N° 1166/2008 del Parlamento Europeo y del Consejo de la Unión Europea

## Importante:

- Dirección WEB: Si desea cumplimentar este cuestionario por internet acceda a <https://censoagrario2009.ine.es>
  - usuario:
  - password:
- Para cualquier pregunta sobre este cuestionario, contacte a través de [info@censoagrario2009.ine.es](mailto:info@censoagrario2009.ine.es) o llame al

**teléfono gratuito 900-804-903**

- La **Hoja de Instrucciones** que se adjunta le ayudará a realizar una correcta cumplimentación.

**Gracias por su colaboración**

## 1. Datos de identificación del receptor censal

**Importante:** todo receptor censal, sea o no titular agrario, deberá cumplimentar este apartado. Lea la Hoja de Instrucciones, especialmente en casos de transmisión familiar.

### Escriba todos los datos que se solicitan

Nombre o razón social 0017

NIF (no olvide cumplimentar este dato) 0022

Dirección completa (calle, plaza, avenida,...)0038

Municipio 0056

Población, lugar, aldea, etc. 0043

Provincia 0075  Código postal 0094

Teléfono 1 0108  Teléfono 2 0115  Fax 0120 (si dispone)

## 2. Datos de contacto de la persona "informante" de este cuestionario (sólo si es una persona distinta al propio receptor censal)

Nombre del informante 0141

Teléfono 0154  Fax (si dispone) 0167

Número de orden

Para cualquier pregunta sobre este cuestionario, contacte a través de [info@censoagrario2009.ine.es](mailto:info@censoagrario2009.ine.es) o llame al teléfono gratuito **900-804-903**



## Importante

Se entiende por explotación agraria el conjunto de tierras y el ganado, que utiliza los mismos medios de producción (maquinaria, mano de obra,...).

- Una explotación agraria con tierras, sean o no productivas, está constituida por

- Todas las tierras en propiedad del titular, **excepto** aquellas que hayan sido arrendadas o cedidas a terceros
- Todas las tierras de las que dispone en arrendamiento o cualquier otro régimen de tenencia, pero de las que no es propietario.
- Las tierras no productivas o abandonadas y los huertos familiares (apdo.8)

En este cuestionario han de consignarse los datos referidos a estas tierras.

- Una explotación agraria sin tierras es aquella que dispone exclusivamente de ganado

### 3. El titular agrario

A efectos de este Censo estadístico, se considera "titular agrario" a la persona que, **con independencia de si es el propietario o no**, de su edad y su situación laboral (jubilado o no), asume la responsabilidad de una explotación agrícola o ganadera y toma las principales decisiones, pudiéndola dirigir él mismo o mediante otra persona (por ejemplo, un familiar o un Jefe de explotación).

Durante la campaña agrícola comprendida entre el **1 de octubre de 2008 y el 30 de septiembre de 2009**, la persona (física o jurídica) que figura en el apartado 1 ¿era titular de una explotación agrícola o ganadera?

0206  **Sí (sea o no el propietario de las tierras o instalaciones ganaderas)** → Pase al apartado 4

0213  **No**, aunque dispone de tierras, están todas ellas dedicadas a otros fines no agrícolas (por ejemplo, tierras urbanizadas)

0228  **No**, porque vendió o cedió todas las tierras y/o instalaciones ganaderas, o devolvió su uso a su propietario antes de octubre de 2009

Hectáreas (con 2 decimales)

Indique la superficie vendida o cedida: 0234         ,

**Sólo para estos casos, aquí finaliza la cumplimentación del cuestionario censal. Remita el cuestionario en el sobre de respuesta pagada que ha recibido.**

**Gracias por su colaboración**

### 4. Explotaciones del titular agrario

El titular agrario ¿dispone de una explotación o de más de una? (En caso de duda, consulte la Hoja de Instrucciones)

0249  Es titular de una única explotación

0252  Es titular de más de una explotación. En este caso, deberá cumplimentar un cuestionario por cada una de sus explotaciones. Si no ha recibido los correspondientes cuestionarios, por favor contacte con nuestras oficinas a través del teléfono gratuito para poder facilitarle nuevos cuestionarios. **NO utilice fotocopias.**

**Pase al apartado 5**

## 5. Ganadería

5.1 ¿La explotación disponía a 30 de septiembre de 2009 de ganado bovino (vacas, bueyes,...), ovejas, cabras, equinos, cerdos, aves, conejas, colmenas u otros animales?

No → Pase al apartado 6

Sí → Anote el número de animales de cada especie en dicha fecha

	Nº de animales		Nº de animales
<b>Bovinos</b>		<b>Porcinos</b>	
<b>Vacas</b>		Cerdas madres y cerdas para reposición de 50 kg y más .....	1129 <input type="text"/>
Lecheras .....	1009 <input type="text"/>	Lechones de menos de 20 Kg.....	1135 <input type="text"/>
Otras vacas .....	1016 <input type="text"/>	Otros porcinos (verracos, cebo y reproductores de desecho) .....	1140 <input type="text"/>
<b>Otros bovinos de dos años o más</b>		<b>Aves</b>	
Machos .....	1021 <input type="text"/>	Gallinas ponedoras .....	1153 <input type="text"/>
Novillas .....	1037 <input type="text"/>	Pollos de carne .....	1166 <input type="text"/>
<b>Bovinos de entre uno y dos años</b>		Otras aves (pavos, patos, ocas, perdices, codornices, pintadas,...)	1172 <input type="text"/>
Machos .....	1042 <input type="text"/>	<b>Conejas madres (incluya sólo las hembras reproductoras) .....</b>	
Hembras .....	1055 <input type="text"/>	1188 <input type="text"/>	
<b>Bovinos de menos de un año .....</b>		<b>Colmenas (nº de unidades) .....</b>	
1068 <input type="text"/>		1191 <input type="text"/>	
<b>Ovinos</b>		<b>Otros animales que no sean de compañía .....</b>	
Ovejas madres y corderas para reposición .....	1074 <input type="text"/>	1205 <input type="checkbox"/> Sí 1212 <input type="checkbox"/> No	
Otros ovinos (lechales, recales, sementales, machos castrados) .....	1080 <input type="text"/>		
<b>Caprinos</b>			
Cabras madres y chivas para reposición .....	1093 <input type="text"/>		
Otros caprinos (cabritos, sementales, machos castrados) .....	1107 <input type="text"/>		
<b>Equinos (caballos, mulas y asnos) .....</b>			
1114 <input type="text"/>			

5.2 ¿En qué municipio está declarado este ganado o se encuentran las instalaciones ganaderas?

0304  En el mismo municipio donde reside el titular (es decir, el anotado en el apartado 1 de este cuestionario)

0311  En otro lugar. Indique el municipio y la provincia

Municipio 0326   
 Provincia 0347

5.3 ¿La explotación utiliza para la ganadería métodos de agricultura ecológica (vea la definición exacta en la Hoja de Instrucciones) y está inscrita en el registro de agricultura ecológica correspondiente?

No → Pase al apartado 6

Sí → Anote el número de cabezas a las que se aplican métodos de producción ecológica para las siguientes especies:

	Nº de animales
Bovino .....	1704 <input type="text"/>
Ovino y caprino .....	1711 <input type="text"/>
Porcino .....	1726 <input type="text"/>
Aves .....	1732 <input type="text"/>
Otros animales .....	1747 <input type="checkbox"/> Sí 1750 <input type="checkbox"/> No



12345678

Para cualquier pregunta sobre este cuestionario, contacte a través de [info@censoagrario2009.ine.es](mailto:info@censoagrario2009.ine.es) o llame al teléfono gratuito 900-804-903

## 6. Cultivos, barbechos y tierras para pastos

Durante la campaña agrícola comprendida entre **1 de octubre de 2008 y 30 de septiembre de 2009** ¿se dedicaron tierras de la explotación a alguno de los siguientes usos: herbáceos, barbechos, árboles frutales o de fruto seco, bayas, olivar, viñedo, viveros o cualquier otro cultivo, o se utilizaron superficies para pastos?

No

Sí

Es importante **NO CONTABILIZAR LA MISMA SUPERFICIE MÁS DE UNA VEZ.** Para ello tenga en

### Cruciales importantes

Se entiende por "superficie de regadío" aquella que haya sido regada al menos una vez durante la campaña agrícola.

**Cultivos sucesivos:** En el caso de que una misma parcela hubiera sido dedicada a dos o más cultivos (o usos) en distintos momentos de la campaña agrícola, considere sólo, para dicha parcela, el cultivo (o uso) principal durante la campaña (el de mayor valor de producción).

**El cultivo secundario NO DEBERÁ CONSIDERARSE.**

**Cultivos asociados:** En el caso de que en la misma parcela hubieran convivido dos o más cultivos al mismo tiempo (asociación de cultivos), DEBERÁ CONSIDERAR TODOS ELLOS, indicando en cada cultivo (o uso) su superficie proporcional. Por ejemplo, si la parcela es de 10 ha., y conviven olivar (de mesa) y viñedo (de pasas) al 30% y 70% respectivamente, deberá consignar 3 ha. para olivar (de mesa) y 7 ha. para viñedo (de pasas).

**ES MUY IMPORTANTE NO CONTABILIZAR LA MISMA SUPERFICIE MÁS DE UNA VEZ.**

### CULTIVOS HERBÁCEOS

#### Cereales para grano

		Secano Hectáreas	Regadío Hectáreas
Trigo blando y escanda .....	2008	<input type="text"/>	3007 <input type="text"/>
Trigo duro .....	2015	<input type="text"/>	3014 <input type="text"/>
Cebada .....	2020	<input type="text"/>	3029 <input type="text"/>
Avena (incluso mezclada con trigo, cebada o centeno) .....	2036	<input type="text"/>	3035 <input type="text"/>
Centeno (incluido tranquillón) .....	2041	<input type="text"/>	3040 <input type="text"/>
Arroz .....			3053 <input type="text"/>
Maíz en grano .....	2067	<input type="text"/>	3066 <input type="text"/>
Otros cereales para la producción de grano (triticale, sorgo, mijo, alforjón, alpiste) .....	2073	<input type="text"/>	3072 <input type="text"/>

#### Leguminosas para grano

Garbanzos, judías, lentejas .....	2089	<input type="text"/>	3088 <input type="text"/>
Guisantes, habas, habonillos y altramuces dulces .....	2092	<input type="text"/>	3091 <input type="text"/>
Otras (incluidas las mezclas con cereales) (vezas, yeros, algarroba, alhova, almortas) .....	2106	<input type="text"/>	3105 <input type="text"/>

#### Patata

.....	2113	<input type="text"/>	3112 <input type="text"/>
-------	------	----------------------	---------------------------

#### Cultivos industriales

Remolacha azucarera .....	2128	<input type="text"/>	3127 <input type="text"/>
Algodón .....	2134	<input type="text"/>	3133 <input type="text"/>
Otros cultivos textiles (lino textil, cáñamo, yute, abacá, sisal, kenaf) .....	2165	<input type="text"/>	3164 <input type="text"/>
Girasol .....	2171	<input type="text"/>	3170 <input type="text"/>
Lino oleaginoso .....	2187	<input type="text"/>	3186 <input type="text"/>
Soja .....	2190	<input type="text"/>	3199 <input type="text"/>
Colza y Nabina .....	2204	<input type="text"/>	3203 <input type="text"/>
Otros cultivos oleaginosos (chufa, adormidera, sésamo, mostaza, cacahuete) .....	2211	<input type="text"/>	3210 <input type="text"/>
Tabaco .....	2226	<input type="text"/>	3225 <input type="text"/>
Lúpulo .....	2232	<input type="text"/>	3231 <input type="text"/>
Plantas aromáticas, medicinales y especias .....	2247	<input type="text"/>	3246 <input type="text"/>
Otras plantas industriales (caña de azúcar, achicoria) .....	2250	<input type="text"/>	3259 <input type="text"/>

#### Cultivos forrajeros

Raíces y tubérculos forrajeros .....	2263	<input type="text"/>	3262 <input type="text"/>
Forrajes plurianuales .....	2279	<input type="text"/>	3278 <input type="text"/>
Maíz forrajero cosechado en verde .....	2285	<input type="text"/>	3284 <input type="text"/>
Leguminosas forrajeras cosechadas en verde .....	2298	<input type="text"/>	3297 <input type="text"/>
Otros forrajes verdes anuales (cereales, gramíneas, colza) .....	2302	<input type="text"/>	3301 <input type="text"/>

#### Hortalizas (excepto patata), melones y fresas

Al aire libre o en abrigo bajo. En tierra de labor .....	2319	<input type="text"/>	3318 <input type="text"/>
Al aire libre o en abrigo bajo. En terrenos hortícolas .....	2324	<input type="text"/>	3323 <input type="text"/>
En invernadero o en abrigo alto (accesible) .....			3339 <input type="text"/>

#### Flores y plantas ornamentales (venta como flor cortada)

Al aire libre y/o abrigo bajo .....	2345	<input type="text"/>	3344 <input type="text"/>
En invernadero .....			3357 <input type="text"/>

#### Semillas y plántulas destinadas a la venta

.....	2361	<input type="text"/>	3360 <input type="text"/>
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## 6. Cultivos, barbechos y tierras para pastos

→ Pase al apartado 8

→ De cada cultivo o uso de la tierra de la siguiente lista, indique la superficie expresada en hectáreas, con dos decimales

cuenta los criterios que se enuncian en el margen de esta tabla. Para más detalles, vea la **Hoja de Instrucciones**

### BARBECHOS

Hectáreas

Barbechos sin ayuda económica ..... 2481     ,

Barbechos subvencionados ..... 2494     ,

### CULTIVOS LEÑOSOS

Secano

Regadío

Hectáreas

Hectáreas

#### Cultivos leñosos al aire libre que no están en invernadero

Cítricos (naranja, limonero, mandarino, otros) ..... 2507     ,   3506     ,

#### Frutales originarios de clima templado

Manzano, peral, albaricoquero, melocotonero, nectarino, cerezo, guindo, níspero, otros ..... 2514     ,   3513     ,

#### Frutales originarios de clima subtropical

Platanera, aguacate, chirimoyo, kiwi, higuera, caqui, granado, papayo, mango, piña tropical, otros ..... 2529     ,   3528     ,

#### Bayas

Grosellero, frambueso, zarzamora, arándano ..... 2535     ,   3534     ,

#### Frutales de fruto seco

Almendro, avellano, castaño, nogal, otros ..... 2540     ,   3549     ,

#### Olivar

Aceituna de mesa ..... 2553     ,   3552     ,

Aceituna de almazara ..... 2566     ,   3565     ,

#### Viñedo

Uva de mesa ..... 2572     ,   3571     ,

Uva para pasas ..... 2588     ,   3587     ,

#### Uva de vinificación:

Vinos de calidad ( con denominación de origen protegida o indicación geográfica protegida) ..... 2591     ,   3590     ,

Otros vinos ..... 2605     ,   3604     ,

Viveros ..... 2612     ,   3611     ,

Otros cultivos leñosos al aire libre (árboles micorrizados para la producción de trufa, algarrobo, alcaparra, pitas, moreras, mimbreras, esparto, junco, caña, té, café) ..... 2627     ,   3626     ,

#### Cultivos leñosos en invernadero

3632     ,

### TIERRAS PARA PASTOS PERMANENTES

(utilizados para pastos o acogidos a régimen de ayudas)

Secano

Regadío

Hectáreas

Hectáreas

#### Prados y praderas permanentes

a. En los que **NO** hay árboles (o apenas hay) ..... 2909     ,   3908     ,

b. En los que **SÍ** hay árboles ..... 2916     ,   3915     ,

¿Cómo definiría estas superficies de pasto con arbolado? (Marque sólo una opción).

2955  Predominio de pasto con pocos árboles

2968  Misma proporción de pasto y árboles

2974  Predominio de árboles con poco pasto

Otras superficies utilizadas para pastos (como erial, matorral,...) ..... 2980     ,

Superficie de pastos que ya no se utilizan a efectos de producción y están acogidas a un régimen de ayudas ..... 2993     ,

## 7. Régimen de tenencia de las tierras indicadas en el apartado 6

Del total de superficies consignadas en todo el apartado 6, indique, en porcentaje

Superficie en propiedad del titular ..... 0402     ,   %

Superficie en arrendamiento ..... 0419     ,   %

Superficie en aparcería u otros regímenes de tenencia ..... 0424     ,   %

**1 0 0 0 0 %**



12345678



Mod. CA-09

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Para cualquier pregunta sobre este cuestionario, contacte a través de [info@censoagrario2009.ine.es](mailto:info@censoagrario2009.ine.es) o llame al teléfono gratuito 900-804-903



## 8. Otras tierras. Recuerde que ES IMPORTANTE NO CONTABILIZAR LA SUPERFICIE MÁS DE UNA VEZ

8.1. Huerto para consumo familiar (inferior a 500 metros cuadrados).....	4006	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<b>metros cuadrados</b>
<b>Hectáreas</b>						
8.2. Terreno con vegetación espontánea y sin aprovechamiento agrícola (erial, matorral,...) y que <b>NO se utiliza para pastos</b> .....	4013	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.3. Superficie con especies arbóreas forestales (chopo, álamo, eucalipto, encina, carrasca, alcornoque, roble, haya, castaño, pino), que <b>NO se utiliza para pastos</b> .....	4028	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
* De la cual, montes bajos aprovechados a matarrasa en turnos cortos (20 años o menos) .....	4034	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.4. Eras, construcciones, canteras, patios, caminos, estanques,....	4049	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.5. Otras tierras cultivables que no han sido utilizadas en la campaña .....	4052	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

## 9. Localización

Las superficies indicadas en los apartados 6 y 8 **¿dónde se encuentran ubicadas?**  
En caso de que pertenezcan a varios municipios, considere sólo aquél donde radica la mayor parte de la superficie.

0509  En el mismo municipio donde reside el titular (es decir, el anotado en el apartado 1 de este cuestionario) → **Pase al apartado 10**

0516  En otro lugar. Indique el municipio y la provincia

Municipio: 0521

## 10. Riego

Superficie que no ha sido regada en la campaña aunque la explotación dispone de instalaciones de riego y agua ..... 4202

## 11. Champiñón, setas y otros hongos cultivados (vea la definición exacta en la Hoja de Instrucciones)

Champiñón, setas y otros hongos cultivados en grutas o construcciones específicas (metros cuadrados) 4356

## 12. Cultivos para la producción de energías renovables y cultivos modificados genéticamente

De los cultivos de los cuadros 6 y 8, anote la superficie de

- Cultivos para la producción de energías renovables en terrenos de retirada ..... 4408

## 13. Agricultura ecológica

En cuanto a las tierras ¿la explotación utiliza métodos de agricultura ecológica (ver la definición exacta en la Hoja de Instrucciones) y está inscrita en el registro de agricultura ecológica correspondiente ?

- No → **Pase al apartado 14**
- Sí → **Responda a las siguientes preguntas**

Indique la superficie en la que se aplican métodos de producción ecológica (superficie calificada) ..... 4505

	Hectáreas		Hectáreas
Cereales .....	4527	Cítricos .....	4599
Leguminosas grano .....	4533	Otros frutales (excepto cítricos) y bayas .....	4603
Patata .....	4548	Olivar .....	4610
Remolacha azucarera .....	4551	Viñedo .....	4625
Oleaginosas .....	4564	Otros cultivos .....	4631
Hortalizas, melones y fresas .....	4570		
Prados o praderas permanentes y forrajes verdes plurianuales .....	4586		

## 14. Mano de obra de la explotación. Titular, Jefe de explotación y otra mano de obra

Se solicitan datos sobre el **número de personas** ocupadas en la explotación así como el **número de jornadas<sup>(1)</sup>** que se han dedicado a **trabajo agrícola** durante la campaña comprendida entre el **1 de octubre de 2008 y el 30 de septiembre de 2009**.

(1) Se entiende por "**Jornada**" o bien un día de al menos 8 horas de trabajo, o bien la suma de varios días de dedicación parcial hasta completar las 8 horas. Así, por ejemplo, realizan "una jornada" las siguientes personas:  
 - la que dedica, en un día, al menos 8 horas al trabajo agrícola de la explotación.  
 - la que se dedica dos días, pero cada día sólo 4 horas.  
 - la que se dedica ocho días, pero cada día sólo 1 hora.

### 14.1 El titular (es decir, la persona o sociedad que figura en el apartado 1):

5005  Es una persona física → N° de jornadas<sup>(1)</sup> trabajadas 5012

5027  Es una persona jurídica (empresa, cooperativa,...)

### 14.2 El Jefe de explotación

Se entiende por **Jefe de la explotación** a la persona que realiza la gestión corriente y cotidiana de la explotación. En el caso de que hubiera más de una persona ejerciendo esta función, considere sólo la de mayor edad.

5033  Es el propio titular  
 5048  Es un miembro de la familia del titular  
 5064  Es otra persona

} → N° de jornadas<sup>(1)</sup> trabajadas 5051

### 14.3 Datos de la persona que ejerza como Jefe de explotación (ya sea el propio titular u otra persona):

<b>Sexo</b>	<b>Edad</b>	<b>Formación agraria</b>	<b>¿Ha recibido algún curso de formación en los últimos 12 meses?</b>
5086 <input type="checkbox"/> Hombre	5103 <input type="checkbox"/> Menos de 25 años	5162 <input type="checkbox"/> Experiencia agraria exclusivamente	5201 <input type="checkbox"/> Sí 5218 <input type="checkbox"/> No
5099 <input type="checkbox"/> Mujer	5110 <input type="checkbox"/> De 25 a 34 años	5178 <input type="checkbox"/> Estudios profesionales agrarios	
	5125 <input type="checkbox"/> De 35 a 44 años	5184 <input type="checkbox"/> Estudios universitarios agrarios	
	5131 <input type="checkbox"/> De 45 a 54 años	5197 <input type="checkbox"/> Otra formación agraria o cursos agrarios	
	5146 <input type="checkbox"/> De 55 a 64 años		
	5159 <input type="checkbox"/> De 65 años o más		

### 14.4 Otra mano de obra familiar (sólo cuando el titular sea persona física)

**Excluyendo al titular y al Jefe de la explotación** indique el número de familiares del titular que han trabajado en la explotación durante la campaña de referencia y el número total de jornadas trabajadas por ellos.

	<u>N° de familiares del titular</u>	<u>N° total de jornadas trabajadas</u>
Hombres .....	5309 <input type="text"/>	5316 <input type="text"/>
Mujeres .....	5321 <input type="text"/>	5337 <input type="text"/>

### 14.5 Otra mano de obra no familiar ocupada regularmente en la explotación

**Excluyendo al titular y a sus familiares, y al Jefe de explotación**, indique el número de personas ocupadas regularmente en la explotación durante la campaña de referencia y el número total de jornadas trabajadas por ellos.

	<u>N° de ocupados regularmente</u>	<u>N° total de jornadas trabajadas</u>
Hombres .....	5342 <input type="text"/>	5355 <input type="text"/>
Mujeres .....	5368 <input type="text"/>	5374 <input type="text"/>

### 14.6 Resto de mano de obra

Además de las personas ya consideradas en los apartados anteriores, **¿ha contratado, para realizar alguna labor de la explotación, ...**

a. ...otra mano de obra eventual? .....  No  Sí → Número total de jornadas<sup>(1)</sup> trabajadas 5585

b. ...a trabajadores autónomos o a una empresa de servicios agrícolas o ganaderos? .....  No  Sí → Número total de jornadas<sup>(1)</sup> trabajadas 5598



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## 15. Equipo para la producción de energía renovable

¿La explotación ha producido energía renovable para la venta o para actividades agrícolas o ganaderas? (Vea la definición exacta en la Hoja de Instrucciones)

- No → Pase al apartado 16
- Sí → Señale cada tipo de fuente de la energía renovable producida
- |                                      |                                                       |                                                                        |
|--------------------------------------|-------------------------------------------------------|------------------------------------------------------------------------|
| 5602 <input type="checkbox"/> Eólica | 5619 <input type="checkbox"/> Biometano               | 5624 <input type="checkbox"/> Hidroenergía                             |
| 5630 <input type="checkbox"/> Solar  | 5645 <input type="checkbox"/> Otra energía de biomasa | 5658 <input type="checkbox"/> Otro tipo de fuente de energía renovable |

## 16. Desarrollo rural

16.1 ¿Se realizan otras actividades complementarias en las que se utilizan los recursos (superficie, edificios, máquinas,...) o los productos de la explotación?

- No → Pase al apartado 16.2
- Sí → Señale las actividades realizadas

Turismo, alojamiento y otras actividades recreativas .....	5700	<input type="checkbox"/>
Artesanía .....	5717	<input type="checkbox"/>
Transformación de productos agrícolas (queso, vino, conservas,...) .....	5722	<input type="checkbox"/>
Producción de energía renovable para la venta (eólica, biogás, solar,...) .....	5738	<input type="checkbox"/>
Transformación de la madera (aserradero) .....	5743	<input type="checkbox"/>
Acuicultura (cria de peces, cangrejos,...) .....	5756	<input type="checkbox"/>
Trabajos agrícolas bajo contrato para otras explotaciones .....	5769	<input type="checkbox"/>
Trabajos no agrícolas bajo contrato .....	5775	<input type="checkbox"/>
Selvicultura .....	5781	<input type="checkbox"/>
Otros .....	5794	<input type="checkbox"/>

¿Qué porcentaje representan estas actividades complementarias respecto de la actividad total de la explotación?

- 5815  Menos de 10%
- 5820  De 10% a menos de 50%
- 5836  De 50% o más

16.2 ¿La explotación se ha beneficiado de alguna medida de desarrollo rural en los últimos tres años?

- No → Pase al apartado 17
- Sí → Señale las actividades realizadas

Utilización de servicios de asesoramiento .....	5854	<input type="checkbox"/>	Pagos vinculados con la directiva relativa al marco del agua .....	5913	<input type="checkbox"/>
Modernización de las explotaciones agrícolas .....	5867	<input type="checkbox"/>	Pagos relacionados con la agricultura ecológica .....	5928	<input type="checkbox"/>
Aumento del valor añadido de los productos agrícolas y forestales .....	5873	<input type="checkbox"/>	Pagos relacionados con otras ayudas agroambientales .....	5934	<input type="checkbox"/>
Cumplimiento de las normas establecidas en la normativa comunitaria .....	5889	<input type="checkbox"/>	Ayudas relativas al bienestar de los animales .....	5949	<input type="checkbox"/>
Participación en programas relativos a la calidad de los alimentos .....	5892	<input type="checkbox"/>	Diversificación hacia actividades no agrícolas .....	5952	<input type="checkbox"/>
Ayudas "Natura 2000" a zonas agrícolas .....	5906	<input type="checkbox"/>	Fomento de actividades turísticas .....	5965	<input type="checkbox"/>

## 17. Observaciones

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Remita el cuestionario en el sobre de respuesta pagada que ha recibido. **Gracias por su colaboración**

### Objetivos del Censo Agrario y Legislación

#### Naturaleza, características y finalidad

El censo agrario es una operación estadística periódica a gran escala, patrocinada por el Estado, para la recogida, elaboración y publicación de información de la estructura del sector agrario. El censo proporciona principalmente datos relativos a las características de la organización y la estructura del sector y a la utilización de recursos tales como la tierra, el agua y la mano de obra.

#### Legislación

El Reglamento (CE) N° 1166/2008 del Parlamento Europeo y del Consejo de la Unión Europea de 19 de noviembre de 2008, establece en sus artículos 6º y 11º que los Estados miembros efectuarán un Censo general de todas las explotaciones agrícolas. Por otra parte, la disposición adicional segunda de la Ley 13/1996, de 30 de diciembre de 1996, señala como estadísticas obligatorias aquellas cuya realización resulte obligatoria para el Estado español por exigencia de la normativa de la Unión Europea.

#### Secreto Estadístico

Serán objeto de protección y quedarán amparados por el secreto estadístico los datos personales que obtengan los servicios estadísticos tanto directamente de los informantes como a través de fuentes administrativas (art. 13.1 de la Ley de la Función Estadística Pública de 9 de mayo de 1989, (LFEP)). Todo el personal estadístico tendrá la obligación de preservar el secreto estadístico (art. 17.1 de la LFEP).

#### Obligación de facilitar los datos

"Las Leyes 4/1990 y 13/1996 establecen la obligación de facilitar los datos que se soliciten para la elaboración de esta Estadística. Los servicios estadísticos podrán solicitar datos de todas las personas físicas y jurídicas, nacionales y extranjeras, residentes en España (artículo 10.1 de la LFEP). Todas las personas físicas y jurídicas que suministren datos, tanto si su colaboración es obligatoria como voluntaria, deben contestar de forma veraz, exacta, completa y dentro del plazo a las preguntas ordenadas en la debida forma por parte de los servicios estadísticos (art. 10.2 de la LFEP)."

El incumplimiento de las obligaciones establecidas en esta Ley, en relación con las estadísticas para fines estatales, será sancionado de acuerdo con lo dispuesto en las normas contenidas en el presente Título (art. 48.1 de la LFEP). Las infracciones muy graves serán sancionadas con multas de 3.005,07 a 30.050,61 Euros. Las infracciones graves serán sancionadas con multas de 300,52 a 3.005,06 Euros. Las infracciones leves se sancionarán con multas de 60,10 a 300,51 Euros (art. 51.1, 51.2 y 51.3 de la LFEP).

ANNEXE 2.- Questionnaire for SAMP and OGA  
Collection. Mod MP - 09

# Censo Agrario 2009

## Datos adicionales sobre métodos de producción

Número de orden:

Número de cuestionario:

Denominación de la explotación: 6011

### Datos de contacto de la persona "informante" de este cuestionario (sólo si fuera una persona distinta al propio titular o si fuera distinto informante que el de CA09)

Nombre del informante 6026

Teléfono 6032             FaX (si dispone) 6047



En cumplimiento de la normativa europea relativa al Censo Agrario 2009 (Reglamento CE Nº 1166/2008 del Parlamento Europeo y del Consejo de 19 de noviembre de 2008), es necesario recabar algunos datos adicionales sobre los métodos y técnicas de producción de las explotaciones agrarias.

Los datos solicitados en este cuestionario han de referirse, salvo que se indique lo contrario, a la **campaña agrícola comprendida entre el 1 de octubre de 2008 y 30 de septiembre de 2009**.

### Objetivos del Censo Agrario y Legislación

#### Naturaleza, características y finalidad

El censo agrario es una operación estadística periódica a gran escala, patrocinada por el Estado, para la recogida, elaboración y publicación de información de la estructura del sector agrario. El censo proporciona principalmente datos relativos a las características de la organización y la estructura del sector y a la utilización de recursos tales como la tierra, el agua y la mano de obra.

#### Legislación

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#### Secreto Estadístico

Serán objeto de protección y quedarán amparados por el secreto estadístico los datos personales que obtengan los servicios estadísticos tanto directamente de los informantes como a través de fuentes administrativas (art. 13.1 de la Ley de la Función Estadística Pública de 9 de mayo de 1989, (LFEP)). Todo el personal estadístico tendrá la obligación de preservar el secreto estadístico (art. 17.1 de la LFEP).

#### Obligación de facilitar los datos

Las Leyes 4/1990 y 13/1996 establecen la obligación de facilitar los datos que se soliciten para la elaboración de esta Estadística. Los servicios estadísticos podrán solicitar datos de todas las personas físicas y jurídicas, nacionales y extranjeras, residentes en España (artículo 10.1 de la LFEP). Todas las personas físicas y jurídicas que suministren datos, tanto si su colaboración es obligatoria como voluntaria, deben contestar de forma veraz, exacta, completa y dentro del plazo a las preguntas ordenadas en la debida forma por parte de los servicios estadísticos (art. 10.2 de la LFEP).

El incumplimiento de las obligaciones establecidas en esta Ley, en relación con las estadísticas para fines estatales, será sancionado de acuerdo con lo dispuesto en las normas contenidas en el presente Título (art. 48.1 de la LFEP). Las infracciones muy graves serán sancionadas con multas de **3.005,07 a 30.050,61 euros**. Las infracciones graves serán sancionadas con multas de **300,52 a 3.005,06 euros**. Las infracciones leves se sancionarán con multas de **60,10 a 300,51 euros** (art. 51.1, 51.2 y 51.3 de la LFEP).

## 1. Utilización de pastos

Durante la campaña agrícola de referencia ¿la explotación disponía de herbívoros? (bovinos, caprinos, ovinos y equinos)

NO → Pase al apartado 2

SÍ → Responda a las siguientes preguntas:

1.1 ¿Dispone su explotación de superficies en las que pasta su propio ganado (excluyendo terrenos comunales)?

NO → Pase al apartado 1.2

SÍ →

Número de meses al año de pastoreo al aire libre .....	6102	<input type="text"/>	<input type="text"/>	meses
Superficie total pastada (excluyendo terrenos comunales)		<b>Hectáreas</b>		
de tierras para pastos permanentes .....	6119	<input type="text"/>	<input type="text"/>	,
de forrajes plurianuales .....	6124	<input type="text"/>	<input type="text"/>	,

1.2 Durante el periodo de referencia ¿su ganado herbívoro ha pastado en tierras comunales?

NO → Pase al apartado 2

SÍ →

Número de meses al año de pastoreo en tierras comunales .....	6130	<input type="text"/>	<input type="text"/>	meses
Número de sus animales en tierras comunales .....	6145	<input type="text"/>	<input type="text"/>	animales

## 2. Estabulación del ganado

¿La explotación tenía establos que hayan sido usados entre el 1 de octubre de 2008 y el 30 de septiembre de 2009?

NO → Pase al apartado 3

SÍ → Indique el número de plazas (incluye las plazas temporalmente vacías)

		<b>Plazas</b>
<b>2.1 Bovinos. Número de plazas según tipo de establo:</b>		
Estabulación fija con sistema diferenciado de recogida de estiércol sólido y purín .....	6200	<input type="text"/>
Estabulación fija con sistema de recogida de estiércol semilíquido o lisier .....	6217	<input type="text"/>
Estabulación libre con sistema diferenciado de recogida de estiércol sólido y purín .....	6222	<input type="text"/>
Estabulación libre con sistema de recogida de estiércol semilíquido o lisier .....	6238	<input type="text"/>
Otro tipo de estabulación .....	6243	<input type="text"/>
<b>2.2 Porcinos. Número de plazas según tipo de establo:</b>		
		<b>Plazas</b>
Con suelos parcialmente enrejados .....	6256	<input type="text"/>
Con suelos totalmente enrejados .....	6269	<input type="text"/>
Estabulación libre sobre cama de paja y con foso de recogida de heces .....	6275	<input type="text"/>
Otro tipo de establos .....	6281	<input type="text"/>
<b>2.3 Gallinas ponedoras. Número de plazas según tipo de establo:</b>		
		<b>Plazas</b>
En camas de paja (estabulación libre con yacija) .....	6294	<input type="text"/>
En batería con cinta transportadora de gallinaza .....	6308	<input type="text"/>
En batería con fosa de deyecciones .....	6315	<input type="text"/>
En batería sobre zancos .....	6320	<input type="text"/>
Otro tipo de batería .....	6336	<input type="text"/>
Otras instalaciones .....	6341	<input type="text"/>

## 3. Mantenimiento de elementos paisajísticos

¿La explotación ha mantenido en los últimos tres años setos, líneas de árboles o muros de piedra?

NO → Pase al apartado 4

SÍ → Señale la antigüedad de estos elementos paisajísticos

	<u>Instalados en los últimos 3 años</u>	<u>Instalados con anterioridad a los 3 últimos años</u>
Setos .....	6406 <input type="text"/>	6413 <input type="text"/>
Líneas de árboles .....	6428 <input type="text"/>	6434 <input type="text"/>
Muros de piedra .....	6449 <input type="text"/>	6452 <input type="text"/>

## 4. Riego

		<b>Hectáreas</b>	
<b>4.1 Superficie agrícola utilizada (SAU) media regada en los últimos tres años</b> .....	6503	<input type="text"/>	<input type="text"/>
<b>4.2 Indique el porcentaje de superficie regada durante la campaña 2009 según el método de riego</b> .....			%
Por aspersión .....	6525	<input type="text"/>	<input type="text"/>
Localizado (goteo, microaspersión, etc.) .....	6531	<input type="text"/>	<input type="text"/>
Por gravedad (a pie, a manta, etc.) .....	6546	<input type="text"/>	<input type="text"/>
<b>4.3 Indique el porcentaje del volumen de agua consumida en el riego durante la campaña 2009</b>			
<b>A) Según su procedencia:</b> .....			%
Con aguas subterráneas de pozo o sondeo .....	6559	<input type="text"/>	<input type="text"/>
Con aguas superficiales (estanques o presas) de dentro de la explotación .....	6562	<input type="text"/>	<input type="text"/>
Lagos, ríos o cursos naturales de agua fuera de la explotación .....	6578	<input type="text"/>	<input type="text"/>
Redes municipales de abastecimiento público de agua .....	6584	<input type="text"/>	<input type="text"/>
Con aguas regeneradas .....	6597	<input type="text"/>	<input type="text"/>
Con aguas desaladas del mar o salobres .....	6601	<input type="text"/>	<input type="text"/>
<b>B) Según régimen de gestión del agua de riego:</b> .....			%
Con concesión integrada en una Comunidad de Regantes .....	6618	<input type="text"/>	<input type="text"/>
Otro régimen de gestión del agua .....	6623	<input type="text"/>	<input type="text"/>

## 5. Utilización y técnicas de abonado

¿La explotación utiliza algún tipo de abono orgánico?

NO → Pase al apartado 6

SÍ → Indique las superficies que se solicitan

		<b>Hectáreas</b>	
<b>5.1 Superficie de la explotación abonada con estiércol sólido</b> .....	6755	<input type="text"/>	<input type="text"/>
De esta superficie, indique las hectáreas sobre las que se aplicó estiércol sólido con incorporación inmediata o directamente localizado .....	6768	<input type="text"/>	<input type="text"/>
<b>5.2 Superficie de la explotación abonada con estiércol semilíquido o lisier</b> .....	6774	<input type="text"/>	<input type="text"/>
De esta superficie, indique las hectáreas sobre las que se aplicó estiércol semilíquido o lisier con incorporación inmediata o directamente inyectado .....	6780	<input type="text"/>	<input type="text"/>

## 6. Instalaciones para el almacenamiento de abonos naturales de origen animal

¿Dispone la explotación de instalaciones para el almacenamiento de abonos naturales?

SÍ       NO → Pase al apartado 7

<b>6.1 Señale para cada abono el tipo de instalación</b>	<b>Instalación cubierta</b>	<b>Instalación no cubierta</b>	<b>Sin instalación</b>
Estiércol sólido .....	6814 <input type="checkbox"/>	6840 <input type="checkbox"/>	6872 <input type="checkbox"/>
Purín .....	6829 <input type="checkbox"/>	6853 <input type="checkbox"/>	6888 <input type="checkbox"/>
Estiércol semilíquido o lisier .....	6835 <input type="checkbox"/>	6866 <input type="checkbox"/>	6891 <input type="checkbox"/>
<b>6.2 El estiércol semilíquido o lisier</b>			
¿se almacena en un tanque de material impermeable? .....	6912 <input type="checkbox"/> SÍ	6927 <input type="checkbox"/> NO	
¿se almacena en un foso en el suelo? .....	6933 <input type="checkbox"/> SÍ	6948 <input type="checkbox"/> NO	
<b>6.3 Indique el porcentaje del abono total producido en la explotación y que es vendido o cedido a otras explotaciones o empresas</b> .....	6951	<input type="text"/>	%

## 7. Laboreo del terreno y acciones para la conservación del suelo (sólo para herbáceos)

¿La explotación ha tenido cultivos herbáceos (excepto en invernadero) durante la campaña agrícola 2009?  
(1 octubre de 2008 a 30 septiembre de 2009)

NO → Pase al apartado 8

SÍ → Indique las superficies que se solicitan:

### 7.1 Laboreo del terreno para cultivos herbáceos:

		Hectáreas	
Convencional (arado con vertedera o discos) .....	7010	<input type="text"/>	<input type="text"/>
Mínimo laboreo .....	7025	<input type="text"/>	<input type="text"/>
Siembra directa (no laboreo) .....	7031	<input type="text"/>	<input type="text"/>

### 7.2 Cubierta invernal del suelo en cultivos herbáceos:

Cultivos de invierno .....	7046	<input type="text"/>	<input type="text"/>
Cultivos de cobertura o intermedios .....	7059	<input type="text"/>	<input type="text"/>
Residuos de plantas .....	7062	<input type="text"/>	<input type="text"/>
Suelo desnudo .....	7078	<input type="text"/>	<input type="text"/>

### 7.3 Cultivos herbáceos fuera de la rotación prevista

Superficie de herbáceos en la que no ha variado el cultivo en los últimos 3 años	7084	<input type="text"/>	<input type="text"/>
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## 8. Mano de obra de la explotación . Otras actividades complementarias

### 8.1 Sólo para explotaciones cuyo titular sea una persona física y, además, sea el Jefe de la explotación

¿Ha realizado trabajos agrícolas o ganaderos para la explotación?

Además de la actividad dedicada a los trabajos agrícolas y ganaderos de la explotación ¿ha realizado otra actividad complementaria?  
(señale sólo una opción)

¿Esta otra actividad está relacionada con la explotación?

#### 8.1.1 El titular

7157  SÍ  
7160  NO

7176  NO

7182  SÍ, como actividad principal  
7195  SÍ, como actividad secundaria

7209  SÍ  
7216  NO

#### 8.1.2 El cónyuge del titular

7221  SÍ  
7237  NO  
7242  NO hay cónyuge

7255  NO

7268  SÍ, como actividad principal  
7274  SÍ, como actividad secundaria

7280  SÍ  
7293  NO

#### 8.1.3 Número de otros familiares del titular (excluyendo al cónyuge) que trabajaron en la explotación, y además...

... con otra actividad complementaria como principal .....	7307	<input type="text"/>
... con otra actividad complementaria como secundaria .....	7314	<input type="text"/>
... con otra actividad complementaria directamente relacionada con la explotación .....	7329	<input type="text"/>
... con otra actividad complementaria no relacionada con la explotación .....	7335	<input type="text"/>

### 8.2 Mano de obra no familiar ocupada regularmente en la explotación

Número de ocupados regularmente en la explotación y que, además, realizan otra actividad complementaria directamente relacionada con la explotación...

... como actividad principal .....	7340	<input type="text"/>
... como actividad secundaria .....	7353	<input type="text"/>

## 9. Observaciones



ANNEXE 3.- Breakdown of labour employed on the holding. Mod MO - 09

