



2009 Agricultural Census

2011

NATIONAL METHODOLOGICAL REPORT

Pursuant to Article 12 of Regulation (EC) No 1166/2008 of the European Parliament and of the Council of 19 November 2008, published in OJ L 321, 1.12.2008, p. 14

MEMBER STATE: PORTUGAL

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SUMMARY

The definition of economic policies at both the national and supra-national level requires a set of well-structured data on which to soundly set out models and strategies for the pursuit of the defined objectives. Since agricultural policies are no exception to this rule, the need arose for a systematic production of statistics on farm structure and production methods at Community level. Against this background, Regulation (EC) No 1166/2008 of the European Parliament and of the Council was approved, setting forth the conduct of three farm structure surveys (in 2009¹, 2013 and 2016) and a survey on agricultural production methods (SAPM) (2009)¹. This Regulation also establishes a framework for the production of comparable statistics across the different Member States, by harmonising the methodology, the concepts, and the surveyed variables.

In 2009 Portugal held the Agricultural Census (Portuguese acronym: RA 09), an exhaustive and mandatory statistical operation as laid down in the above regulation. This survey was structured in a way to allow for a simultaneous provision of information on the characteristics defined for the farm structure survey and those defined for the survey on agricultural production methods. Also, it obtained a series of data of national/regional interest that, although not mandatory in Community terms, were considered to be pertinent and timely.

Data obtained will also make it possible to build a farm register and an agricultural sample base (Portuguese acronym: BAA; a selection of groups of agricultural holdings representing specific sectoral circumstances, which will enable sampling) for sample agricultural surveys to be held in the next 10 years.

In accordance with the obligations assumed in Regulation (EC) No 1166/2008, Portugal reported the final RA 09 results to the Commission on 3 March 2011.



Regulation_(EC)_No
_1166_2008

HISTORICAL BACKGROUND

In Portugal the series of agricultural and livestock surveys dates back to the first half of the last century. In fact, the first exhaustive, systematic and organised listing of statistical data on the Portuguese agriculture occurred in 1934, with the “General inventory of livestock and poultry”, and was later repeated in 1940 and 1972. Mainland farm surveys were held in 1952-1954, 1968 and 1979, and in 1965 a Census was conducted on agricultural holdings in adjacent islands (Azores and Madeira).

The first “General census on agriculture” harmonised with the European Union (EEC at the time) was held in 1989, exhaustively and simultaneously across all regions in the country. Subsequently, farm structure surveys were held in 1992, 1995 and 1997, followed by the 1999 General Agricultural Census and the 2003, 2005 and 2007 sample iterations.

¹ In Portugal, Spain and Greece. In the remaining Member States these surveys have been held in 2010.

DATA COLLECTION PERIOD

The RA 09 collection period ranged from November 2009 to October 2010. Data collection also included critical appraisal, recording, validation and analysis.

GEOGRAPHICAL SCOPE

The RA 09 was held on the Mainland and in the Autonomous Regions of the Azores and Madeira.

ORGANISATION

The *Instituto Nacional de Estatística* – INE (Statistics Portugal) was the entity responsible for conducting the RA 09, in cooperation with the Ministry of Agriculture, Rural Development and Fisheries, in particular the Regional Directorates of Agriculture and Fisheries and the Planning and Agro-Food Policies Office, and, in the Autonomous Regions, with the Regional Statistical Office of the Azores, the Regional Directorate for Community Agricultural Affairs of the Azores, the Regional Directorate of Statistics of Madeira, and the Regional Directorate for Agriculture and Rural Development of Madeira. The Agriculture and Environment Statistics Unit of the Economic Statistics Department and the Data Collection Department were the two units that coordinated the operation at national level, having been responsible for organising and conducting works to collect and validate information respectively.

This statistical operation involved over 2,000 staff (experts from participating entities, staff on fixed-term contracts and service providers) across the whole country (Mainland and Islands), and was based on compliance with pre-defined data collection procedures aimed at organising, managing, monitoring and controlling data collection.

PREPARATORY WORK

RA 09 preparatory work took place from the last quarter of 2007 onwards and extended until the third quarter of 2009. The main tasks of the teams responsible for organising the RA 09 were the following: definition, design and composition of the questionnaire and respective instruction manual, the pilot survey (in two stages, the first consisting in the RA 09 Questionnaire Test – to test the recording component of the IT software application, the navigability of the questionnaire, the formulation of the questions, and to define the collection support model – and the second in the RA 09 pilot survey, whose main objectives were to test the chain of collection and the different components of the IT software application), creation of the list of producers, recruitment and training of the various profiles in the chain of collection, and planning and implementation of advertising campaigns.

DATA COLLECTION AND RECORDING

The survey was held through face-to-face interviews, collection having been based on paper questionnaires. Most interviewers also recorded the data. The type of data recording may be characterised as “heads up”, given that the tailor-made software application to support the agricultural survey system of Statistics Portugal (SAGR) supplied instantaneous feedback to the staff member using a laptop to record data electronically regarding the information that was being recorded.

DATA PROCESSING, ESTIMATION AND ANALYSIS

In the RA 09 interviewers/staff using laptops to record data electronically recorded, validated and analysed data in computer-readable format. Validation rules for recorded data, loaded to the software application system, triggered errors that, depending on their seriousness/importance, could prevent completion of the questionnaire, and were an invaluable support at an early stage of data analysis/validation. In a central environment, the remaining profiles of the chain of collection conducted a second data analysis and validation, with a module to compare with external sources allowing for comparison of recorded data with other information sources.

1. CONTACTS

Responsible entity	Statistics Portugal
Department/unit	Economic Statistics Department / Agriculture and Environment Statistics Unit
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2. METHODOLOGY

2.1 NATIONAL LEGISLATION

National legal basis: Law No 22/2008 of 13 May laying down the principles, rules and structure of the National Statistical System (NSS) and [Decree-Law No 166/2007](#) of 3 May, approving the organisation of Statistics Portugal.

It is worth noting that national legislation:

- Does not define the purpose nor the – in this case exhaustive – scope of coverage of the RA;
- Does not establish the (decennial) frequency nor the reference period of the RA;
- Establishes that the responsibility for conducting the RA is of Statistics Portugal, since it is its task, as the central body that produces and disseminates official statistics with technical independence, to hold surveys, censuses and other statistical operations (Article 3 (2) of the NSS Law and Article 7 (2) (a) of the Decree-Law approving the organisation of Statistics Portugal);
- Does not mention administrative or financial aspects regarding the RA 09. However, the Business Plan of Statistics Portugal is appraised by the Statistical Council, pursuant to Article 13 of the NSS Law, and envisages the general characterisation and the costs of the RA 09;
- Provides for the obligation of respondents, individuals and enterprises, to provide the information deemed necessary to produce official statistics (Article 4 (1) of the NSS Law and Article 4 of the Decree-Law approving the organisation of Statistics Portugal).
- Provides for access to administrative records (Article 4 (2)) which in the case of the RA 09 are used to validate the information provided by respondents;

- Provides for the confidentiality of data collected both as regards data on enterprises and on individuals. The principle of statistical confidentiality is thus applied, i.e. individual statistical data cannot be disclosed (Article 6). The violation of statistical confidentiality considered as a breach of the obligation of professional secrecy is punishable (Article 32).

All those involved in the RA 09, in their capacity as service providers or staff on fixed-term contracts with supervisory functions and as staff of the Ministry of Agriculture, were bound by contracts or protocols listing their responsibilities with regard to the RA 09. These responsibilities were notably technical, or within the scope of statistical confidentiality and professional secrecy, in accordance with the law (Articles 6 and 32).



National Statistical
Systems Law

2.2 CHARACTERISTICS AND REFERENCE PERIOD

National characteristics

The RA 09 was structured to make it possible to provide information on the characteristics defined for the farm structure survey (general characteristics, crop areas, livestock, type of machinery and equipment, agricultural buildings and structures, agricultural population and labour force, other non-agricultural activities and measures to support rural development) and on those defined for the survey on agricultural production methods (tillage methods, soil conservation, landscape features, animal grazing and animal housing, manure application and irrigation). Other characteristics (variables), or greater detail in mandatory characteristics pursuant to Community legislation, were also surveyed as a response to specific national requirements (see Tables 1 and 2).

Table 1 – National characteristics as a result of the breakdown / individualization of the characteristics defined in Community legislation

National characteristic	Characteristic listed on Regulation (EC) No 1166/2008 where the national characteristic is included	Entity that requested the inclusion of the characteristic
Individualization of the area of two-row barley, six-row barley, triticale, hybrid grain maize, regional grain maize, transgenic grain maize, round and medium grain rice, "Carolino" grain rice, "Aguilha" grain rice and sorghum.	Arable land – <i>Cereals for the production of grain (including seed)</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Individualization of the area of chick peas	Arable land – <i>Dried pulses and protein crops for the production of grain (including seed and mixtures of cereals and pulses)</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Individualization of the area of annual mixtures, fodder oats, fodder sorghum and ryegrass	Arable land – <i>Plants harvested green</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)

National characteristic	Characteristic listed on Regulation (EC) No 1166/2008 where the national characteristic is included	Entity that requested the inclusion of the characteristic
Individualization of the area of early potatoes and other potatoes	Arable land – <i>Potatoes (including early potatoes and seed potatoes)</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Individualization of the area of thistle	Arable land – <i>Industrial crops</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Individualization of the area of processing tomato, melons and strawberries	Arable land – <i>Fresh vegetables, melons and strawberries</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Individualization of the area of kitchen garden and market gardening potatoes	Arable land – <i>Fresh vegetables, melons and strawberries;</i> Kitchen gardens	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Area of temporary crops as a secondary successive crop or as a secondary crop under permanent crops	Arable land	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Breakdown of irrigation methods in: <ul style="list-style-type: none"> • Surface irrigation in traditional furrow irrigation, modernized furrow irrigation, flow irrigation and others surface irrigation methods; • Sprinkler irrigation in sprinklers with permanent lateral pipes, sprinklers with portable lateral pipes, hard hose travelling gun with hose reel and centre pivot system; • Drop irrigation in drip irrigation and micro-sprinkler irrigation. 	Arable land	Ministry of Agriculture, Rural Development and Fisheries (MADRP) Institute of Agronomy (ISA)
Individualization of the area of the main species of fruit (temperate climate zones) plantations, berry plantations, fruit (subtropical climate zones) plantations and nuts plantations	Permanent crops – <i>Fruit and berry plantations</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Individualization of the area of the main species of citrus plantations	Permanent crops – <i>Citrus plantations</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Breakdown of olive for oil production plantations by planting density	Permanent crops – <i>Olive plantations</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Breakdown of quality wines in PDO and PGI	Permanent crops – <i>Vineyards, of which normally producing quality wine</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Breakdown of nurseries in vine and root-stock, fruit trees/citrus/olive trees, forest trees and ornamental plants	Permanent crops – <i>Nurseries</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Breakdown of permanent grassland in sowed pastures and improved natural pastures	Permanent grassland – <i>Pasture and meadow, excluding rough grazings</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Breakdown of permanent grassland in areas not under permanent crops or wooded area, areas under permanent crops area and areas under wooded area	Permanent grassland	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Breakdown of type of tenure (in relation to the holder) of UAA in tenant farming, seasonal tenant farming, share farming and other types of tenure	Type of tenure (in relation to the holder) and farming system	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Breakdown of source of irrigation water used on the holding in surface water, ground water and other: <ul style="list-style-type: none"> • Surface water (Dam, reservoir, pound/river, water course or natural lake/other); • Ground water (Bored or drilled well/ natural spring/other); • Other (Reuse of wastewater/other – public domestic water supply services) 	Irrigation – <i>Source of irrigation water used on the holding</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP) Water Institute (INAG)

National characteristic	Characteristic listed on Regulation (EC) No 1166/2008 where the national characteristic is included	Entity that requested the inclusion of the characteristic
Breakdown of pigs in order to answer to Regulation (EC) No 1165/2008	Livestock – <i>Pigs</i>	Statistics Portugal (INE)
Breakdown of sheep in order to answer to Regulation (EC) No 1165/2008	Livestock – <i>Sheep and goats</i>	Statistics Portugal (INE)
Breakdown of goats in order to answer to Regulation (EC) No 1165/2008	Livestock – <i>Sheep and goats</i>	Statistics Portugal (INE)
Breakdown of equidea in horses, donkeys and mules	Livestock – <i>Equidae</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Destination of the solid dung and slurry produced on the holding (other than exported from the holding)	Manure application – <i>Percentage of the total produced manure exported from the holding</i>	Statistics Portugal (INE) Portuguese Environment Agency (APA)
Age and power classes of tractors and agricultural machinery	Machinery and equipment – <i>Machinery</i>	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Sources of the final output of the holding (other than the one coming from other gainful activities directly related to the holding)	Other gainful activities of the holding (directly related to the holding) – <i>Importance of the other gainful activities directly related to the holding</i>	Statistics Portugal (INE)

Table 2 – National characteristics without relation to the characteristics defined in Community legislation

National characteristic	Entity that requested the inclusion of the characteristic
Dispersal of UAA and access to public roads	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Management of waste, vegetable by-products and debris	Ministry of Agriculture, Rural Development and Fisheries (MADRP) Portuguese Environment Agency (APA)
Regional items – regional characteristics, particularly on the surface (cultivated and abandoned) of crops and livestock, important at regional level	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Association of the holding to agricultural organizations and use of its services	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Accounting	Ministry of Agriculture, Rural Development and Fisheries (MADRP)
Importance of subsidies/aids on the final output of the holding	Statistics Portugal (INE)
Sources of the income of the sole holder's household	Statistics Portugal (INE)
Continuity of the agricultural holding	Statistics Portugal (INE)

The determination of the final version of the national characteristics to be included and the formulation of mandatory questions pursuant to Community legislation resulted from contacts with a number of entities, which contributed to defining the variables that would provide relevant statistical data with no excessive statistical burden on respondents.



Contacts

Characteristics that were not collected

From the list of mandatory characteristics pursuant to Community legislation, several were identified whose prevalence is quite low (non-significant) or even zero (non-existent).

Characteristics that were not collected for being non-existent (NE):

- Sugar beet (excluding seed) – organic farming;
- Payments linked to the Water Framework Directive;
- Animal welfare payments;
- Animal housing - laying hens: battery cage with stilt house;
- Storage facilities for liquid manure;
- Cover of storage facilities for liquid manure.

Characteristics that were not collected for being non-significant (NS):

- The legal and economic responsibility for the holding is assumed by one or more natural persons who is/are a partner, where the holding is a group holding;
- Hops;
- Cotton;
- Soya;
- Linseed (oil flax);
- Other oil seed crops;
- Flax;
- Hemp;
- Other fibre crops;
- Raisins;
- Permanent crops under glass;
- Animal housing – Cattle – Other;
- Equipment used for renewable energy production – Other types of renewable energy sources.

In order to not compromise EU data, and according to Eurostat suggestion, these characteristics were transmitted as “0”.

The characteristics “Support for rural development – Meeting standards based on Community legislation” and “Support for rural development – Natura 2000 payments for agricultural area” were not identified in the legislation as non-existent (NE). However, data collection from the entity managing the rural development programme (ProDeR) made it possible to ensure that, in the established reference period, these measures were not implemented, wherefore these characteristics were not collected.

Furthermore, although being listed as non-significant (NS), the following characteristics were collected:

- Cereals for the production of grain (including seed) – organic farming;
- Dried pulses and protein crops for the production of grain (including seed and mixtures of cereals and pulses) – organic farming;
- Potatoes (including early potatoes and seed potatoes) – organic farming;
- Oil seed crops – organic farming;
- Other crops (fibre crops, etc.) – organic farming;
- Durum wheat;
- Other cereals for the production of grain;
- Sugar beet (excluding seed);
- Tobacco;
- Rape and turnip rape;
- Aromatic plants, medicinal and culinary plants;
- Other industrial crops not mentioned elsewhere;
- Berry species;
- Mushrooms;
- Genetically modified crops;
- Other livestock;
- Equipment used for renewable energy production – wind;
- Equipment used for renewable energy production – biomass;
- Equipment used for renewable energy production – of which bio-methane;
- Equipment used for renewable energy production – solar;
- Equipment used for renewable energy production – hydro-energy;
- Total cultivated area irrigated at least once during the previous 12 months – rape and turnip rape;



PT Characteristics -
NE and NS

Reference period

There are various reference periods, depending on the variable to be collected (Table 3).

Table 3 – Reference date/period of the characteristics

Characteristics	Reference date/period
Related to area and labour force	Crop year 2008/2009, starting on 1 November 2008 and ending on 31 October 2009
Livestock and some characteristics related to the sole holder's household	On the day of the interview
Related to animal grazing, animal housing, manure application and manure storage and treatment facilities	Last 12 months
Related to irrigated area, soil analysis, landscape features and support for rural development	Last 3 years

Changes in the definitions of variables affecting the comparability of data with previous operations

No changes were introduced to the definitions of variables that would compromise comparability with previous statistical operations.

Implementation Manual of the definitions of the farm structure survey and the survey on agricultural production methods – version used

Since Portugal was one of the first countries to hold the Agricultural Census (and to start the respective preparatory work), it was also one of the main contributors to the Manual, given that the analyses of the document, the various contacts with external entities and the tests meanwhile performed gave rise to technical questions, mainly related to concepts in need of clarification. The latest version used during the preparation/organisation of the RA 09 was the CPSA/SB/652. rev. 5.

It should be noted that subsequent versions (CPSA/SB/652. rev. 6 and CPSA/SB/652. rev. 7) are not contrary to the version used, but only clarify concepts and/or scopes.

Questionnaires

Three different questionnaires were designed, one for the Mainland and one for each Autonomous Region (Azores and Madeira). Although overall similar, they reflect a number of regional specificities, notably as regards the existence/separate identification of certain temporary crops (sugarcane, proteaceae, sweet potato or yam), permanent crops (subtropical fruit and tea), or machinery and equipment.

For the Mainland questionnaire, in addition to a set of specific questions for each agricultural region, specific validation rules were also implemented for each region, so as to identify and validate certain characteristics.



2.3 ORGANISATION

Pilot survey

The purpose of the pilot survey was to test the questionnaire (in particular its navigability, the formulation and degree of difficulty of questions, the reliability of responses and the inquiry time) and the collection model (as regards the collection structure, IT architecture and software application, logistics, performance of interviewers/staff using laptops to record data electronically and payment models). It was conducted in two stages: RA 09 questionnaire test (stage 1) and RA 09 pilot survey (stage 2).

The RA 09 questionnaire test took place between March and May 2009, and its main purposes were:

- To test questionnaires, in order to compare two distinct versions (traditional questionnaire vs “script” questionnaire), to select one of them to be used in the real operation;
- To test a few components of the data collection model, specifically the computer recording of agricultural data by interviewers;

- To assess the recording and validation models of SAGR (tailor-made software application to support the agricultural survey system of Statistics Portugal).

All agricultural regions in the country were covered and 39 interviewers involved, who were responsible for testing a sample of 1,229 holdings.

Table 4 – RA 09 questionnaire test: Number of holdings and interviewers

Regional coordination body	Agricultural region	Holdings (No.)	Interviewers (No.)
Porto Norte	Entre Douro e Minho Trás-os-Montes	298	10
Coimbra Centro	Beira Litoral Beira Interior	301	10
Lisboa Lisboa e Vale do Tejo	Ribatejo e Oeste	150	5
Évora Alentejo	Alentejo	150	5
Faro Algarve	Algarve	120	2
Regional Statistical Office of the Azores Autonomous Region of the Azores	Azores	90	3
Regional Directorate of Statistics of Madeira Autonomous Region of Madeira	Madeira	120	4
	National	1 229	39

Source: Pilot survey – stage 2 (IPRA09) – Training of Trainers (May 2009)

The RA 09 pilot survey was held from May to August 2009, and targeted at conducting tests to the SAGR application and the data collection model.

The RA 09 pilot survey covered two municipalities (Barcelos and Torres Vedras) in two agricultural regions (Entre Douro e Minho (EDM) and Ribatejo e Oeste (RO)), to a total of 3,200 holdings. Teams were established with supervisory staff (two section managers and nine local technical staff members), interviewers (47 interviewers using laptops and 12 exclusive face-to-face interviewers) and one staff member using a laptop.

Table 5 – RA 09 pilot survey: Number of holdings and human resources involved

Regional coordination body	Agricultural region	Municipality	Holdings (No)	Human resources (No)					
				Section Managers	Local Technical Staff	Interviewers			Data entry staff
						Total	With data entry tasks	Exclusive	
Porto Norte	Entre Douro e Minho	Barcelos	1 200	1	4	22	22	0	0
Lisboa Lisboa e Vale do Tejo	Ribatejo e Oeste	Torres Vedras	2 000	1	5	37	25	12	1
National			3 200	2	9	59	47	12	1

Source: Pilot survey – stage 2 (IPRA09) – DRI National Report (August 2009)

The two tests involved: defining samples, preparing documents (questionnaires, methodological document, collection procedures manual, support manual, training manual and data collection supporting documents), recruiting and selecting teams, training, data collection, recording, validation and analysis, output assessment and operation reports, with an allocated €136 thousand.

These tests served as a basis for decision-making and/or correcting a number of weaknesses prior to conducting the RA 09.

The main conclusions stemming from the tests were:

- Choice of the type of questionnaire to be used (“conventional questionnaire”);
- Identification of the main weaknesses to be corrected in the questionnaire and instruction manual (changes in the content and graphic appearance), and in the IT software application (correction of/change in a few validation rules, decision as to the most effective/suitable troubleshooting mechanism for the questionnaire recording stage);
- The recording of data collected by interviewers is possible in agricultural inquiries, functioning as “self-training”. The IT software application proved to be a user-friendly tool for interviewers;
- The “number of holdings x interviewer x day” ratio (2.5) proved to be suitable;
- The average price per holding was defined according to the following criteria: reference value (travel and contact time, interview time, recording time, bands of kilometres travelled, and number of holdings per travel (2.5 holdings/travel – RA 09 pilot survey – stage 2);
- Fieldwork organisation proved to be functional, despite assuming the involvement of a chain of collection with various elements incorporated at different levels.

Data collection mode

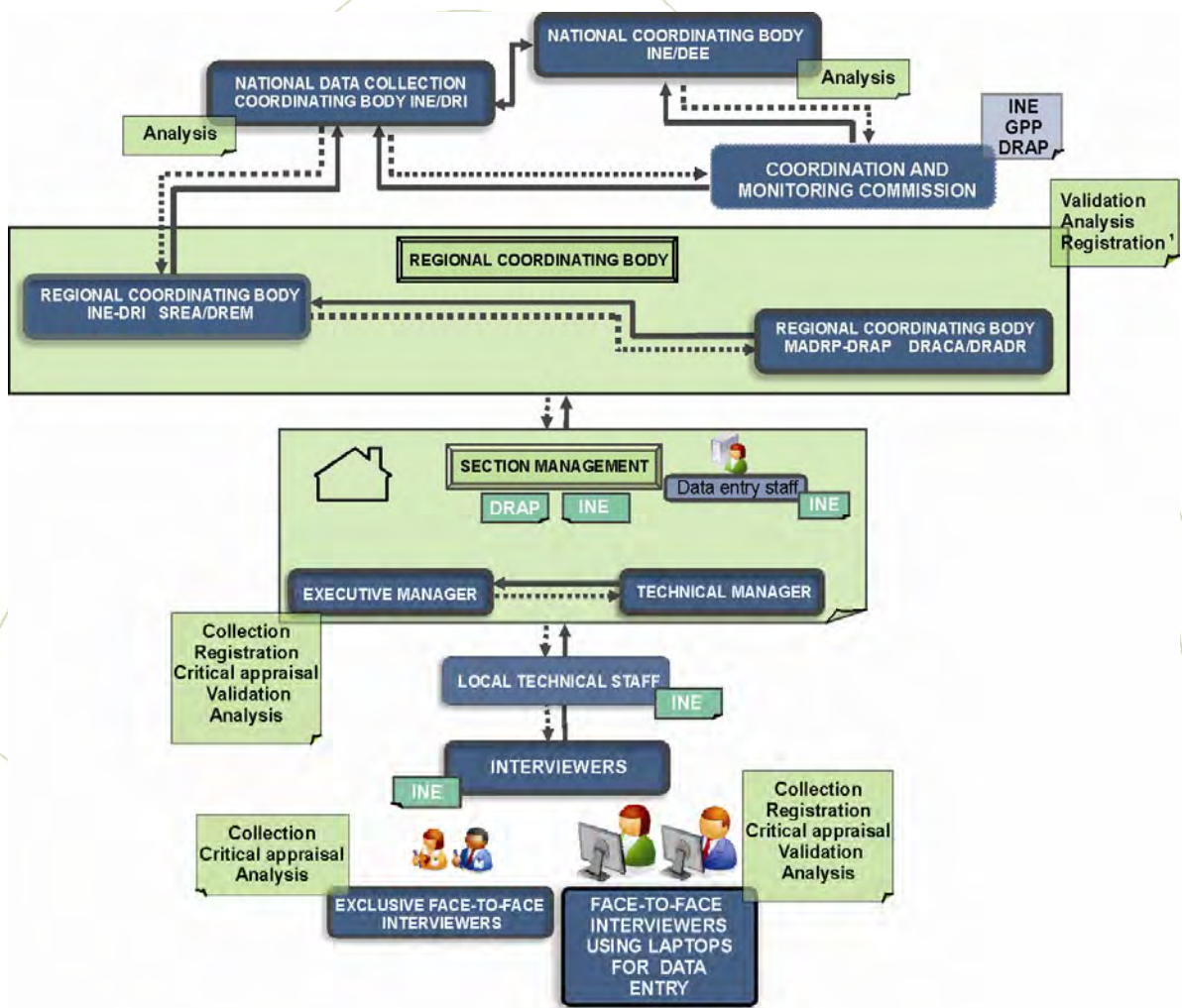
The RA 09 data collection model focused on the collection services, with the coordination and technical support structure and coordination upstream, and field teams downstream. Illustration 1 shows the organisational structure of the statistical operation.

Interviewer

The data collection model covered two types of interviewer – the interviewer using a laptop to record data electronically and the exclusive face-to-face interviewer. The former, in addition to the collection, critical appraisal and analysis of data consistency – jointly with the work undertaken by the latter – was also responsible for data recording, validation, analysis and confirmation/correction in computer-readable format. These interviewers received guidance from the local technical staff member and when their work was finished they considered the questionnaires to be completed.

Interviewers had a document (the “Credential”) proving to agricultural holders/respondents that they were Statistics Portugal interviewers.

Illustration 1 – RA 09 – Organisational structure



Source: Pilot survey – stage 2 (IPRA09) – DRI National Report (August 2009)

Local technical staff member (Portuguese acronym: TL)

Their task in the chain of collection was to guide and monitor data collection, recording and analysis by their interviewer team, acting as the liaison between interviewers and the section manager. The local technical staff member was further responsible for:

- ensuring information sessions for interviewers;
- performing a critical appraisal of data collection by exclusive face-to-face interviewers before data were made available for computer recording;
- analysing the information recorded and its alignment with local circumstances, with the possibility of returning questionnaires to interviewers whenever they were considered to have errors and/or information that was not in line with local circumstances;
- supporting and/or solving the difficulties experienced by interviewers in the performance of their tasks;
- gathering all documents necessary for paying the interviewers;
- preparing meetings and drafting periodical monitoring reports on the work.

Staff member using a laptop to record data electronically

Responsible for recording and validating data collected by exclusive face-to-face interviewers and, in cooperation with the section manager, for labelling questionnaires as “Concluded”. As a result of analyses made by local technical staff and/or section managers, they could also have to correct the recorded data.

Section manager (Portuguese acronym: GN)

Responsible for guiding and monitoring data collection, recording, validation and analysis, as well as for the organisational logistics and administrative management at their section level. They ensured information sessions for local technical staff and staff using laptops, and, in cooperation with the regional coordinating body, the allocation of the different intervening parties to the SAGR chain and the distribution of work to the local technical staff, interviewers and staff using laptops. They ensured the management of questionnaire transfer, notably by reallocating questionnaires at the level of the collection section and between this section and other sections of the region or of other regions. They contributed to overcome the difficulties shown by the local technical staff and assessed the quality of the information provided by them, being able to hand them back certified questionnaires. They were responsible for preparing meetings and drafting periodical monitoring reports on the work. Also, they collected and validated all documents necessary for paying the interviewers, previously validated by the local technical staff.

Regional coordinating body (Portuguese acronym: CR)

The regional coordinating body was composed of two entities: the regional coordinating body of Statistics Portugal and the regional coordinating body of the Regional Directorates of Agriculture and Fisheries. These were responsible for interlinking the respective contributions in terms of recruiting, selecting and training human resources, effectively establishing shared intervention in terms of operational management. The regional coordinating body of Statistics Portugal ensured coordination of the operation in each region, being responsible for compliance with the respective budget (upon final validation of collection structure expenses). The technical staff forming the regional coordinating body was the so-called regional information technical staff.

Regional information technical staff (Portuguese acronym: TIR)

Responsible for guiding and monitoring data collection, recording, validation and analysis at regional level. They ensured information sessions for section managers, and overcame difficulties these considered to be insurmountable. They prepared periodical monitoring reports on the work at regional level, as well as a regional report on the operation. In addition, they collected and validated all documents supporting the processing of the wages of section managers and local technical staff, and the payment of interviewers and staff using laptops.

National coordinating body (Portuguese acronym: CR)

Composed of representatives of the Economic Statistics Department and the Data Collection Department – organisational units of Statistics Portugal – with the responsibility, in addition to defining the organisational and logistical structure of the statistical operation, of monitoring works, thereby gauging the need to intervene in order to solve critical situations. It also assumed responsibility for the project's budget control.

Coordination and Monitoring Commission (Portuguese acronym: CCA)

Composed of appointed representatives of Statistics Portugal (Economic Statistics Department and Data Collection Department), the Planning and Agro-Food Policies Office of the Ministry of Agriculture, Rural Development and Fisheries, and the Regional Directorates of Agriculture and Fisheries.

Its responsibility was to monitor works by assessing, through monitoring, the need for intervention to overcome possible critical situations, paving the way to overcome the difficulties in their origin.

Structure of the chain of data collection

The collection structure was initially sized based on the number of agricultural holdings forming the farm register, the size of the geographical area of intervention of teams, and, at the upper levels of the chain of collection, the profile and availability of human resources.

As the operation progressed there was a need to make adjustments, wherefore the final chain of collection had the following structure:

Table 6 – Chain of collection per agricultural region

Agricultural Region	TIR	GN	GN/TIR	TL	TL/GN	Interviewers			Int./TL	Data entry staff	Excl./Data entry staff	Total HR
						w/data entry	Excl.	Total				
Entre Douro e Minho Trás-os-Montes	7	14	2.0	69	4.9	541	8	549	8.0	1	8.0	640
Beira Litoral Beira Interior	7	15	2.1	57	3.8	471	87	558	9.8	7	12.4	644
Ribatejo e Oeste	4	6	1.5	25	4.2	173	70	243	9.7	8	8.8	286
Alentejo	4	10	2.5	16	1.6	135	22	157	9.8	4	5.5	191
Algarve	4	4	1.0	8	2.0	47	25	72	9.0	1	25.0	89
Mainland	26	49	1.9	175	3.6	1,367	212	1,579	9.0	21	10.1	1,850

Agricultural Region	TIR	GN	GN/ TIR	TL	TL/ GN	Interviewers			Int./ TL	Data entry staff	Excl./ Data entry staff	Total HR
						w/data entry	Excl.	Total				
Azores	1	8	8,0	6	0.8	49	10	59	9.8	1	10.0	75
Madeira	4	2	0,5	8	4.0	67	13	80	10.0	1	13.0	95
Portugal	31	59	1,9	189	3.2	1,483	235	1,718	9.1	23	10.2	2,027

The number of agricultural holdings and collection services per agricultural region were distributed as follows:

Table 7 – Number of holdings and collection services per agricultural region

Agricultural Region	Holdings (No.)	Section Managements (No.)	Holdings by section (No.)	Holdings by interviewer (No.)
Entre Douro e Minho Trás-os-Montes	184,938	14	13,210	337
Beira Litoral Beira Interior	155,016	12	12,918	278
Ribatejo e Oeste	65,801	6	10,967	271
Alentejo	44,758	5	8,952	285
Algarve	19,016	2	9,508	264
Azores	21,872	8	2,734	371
Madeira	23,778	2	11,889	297
Portugal	515,179	49	10,514	335

Overall, each service was responsible, on average, for 10,514 agricultural holdings, and each interviewer for approximately 335 holdings.

In terms of teams, each regional information technical staff member was responsible, on average, for around two section managers, and each for three local technical staff members, on which teams formed by around nine interviewers were dependent.

With regard to the work of exclusive face-to-face interviewers, each staff member using a laptop was responsible, on average, for recording the questionnaires of 10 exclusive face-to-face interviewers (3,064 questionnaires).

Geographical distribution/organisation

The field structure was composed of 49 services distributed across the country, 279 staff supervising a team incorporating 1,718 interviewers collecting data on 515,179 agricultural holdings (the farm register having initially covered 506,840 holdings), and 23 staff members using laptops to record data electronically.

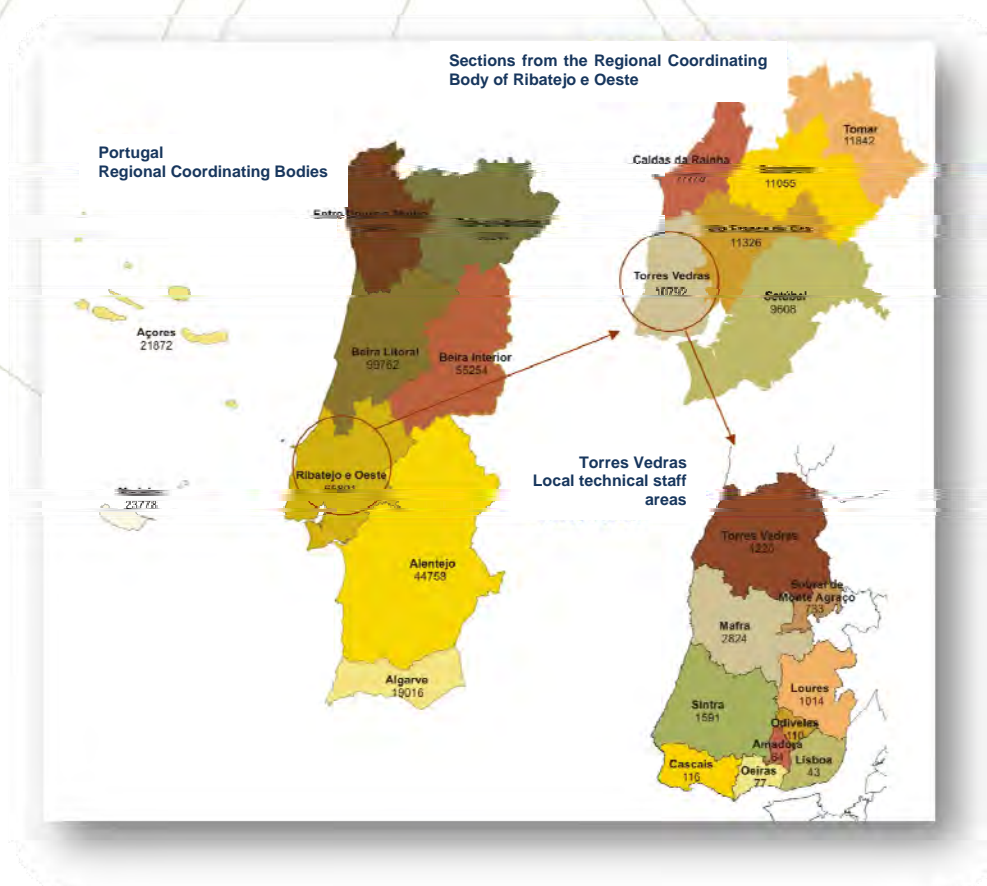
With regard to the geographical distribution of agricultural holdings, it is worth mentioning that their location did not necessarily coincide with the geographical distribution of work, i.e. the location of interviews, there having been a total of 5,514 inter-regional transfers of holdings (3,332 for the Ribatejo e Oeste region, due to a relevant number of holders residing in their area of responsibility).

Table 8 – Inter-regional transfers of holdings

Agricultural Region	Entre Douro e Minho	Trás-os-Montes	Beira Litoral	Beira Interior	Ribatejo e Oeste	Alentejo	Algarve	Azores	Madeira
Entre Douro e Minho		39	25	1	43	1	0	0	0
Trás-os-Montes	891		153	83	454	5	7	2	1
Beira Litoral	91	8		26	317	5	5	0	0
Beira Interior	74	65	145		877	11	10	1	0
Ribatejo e Oeste	30	4	89	15		73	3	1	0
Alentejo	34	9	100	40	1,404		90	0	0
Algarve	2	0	9	0	237	32		1	0
Azores	0	1	0	0	0	0	0		0
Madeira	0	0	0	0	0	0	0	0	
Portugal	1,122	126	521	165	3,332	127	115	5	1

With a view to facilitating the illustration of the geographical organisation model in the RA 09, the map of Portugal is shown below, with the regional coordinating bodies of the different agricultural regions. As an example, the collection services forming the regional coordinating body of the Ribatejo e Oeste region are identified, in particular the collection service of Torres Vedras with its municipalities (each geographical division level is associated with the respective numbers of existing agricultural holdings).

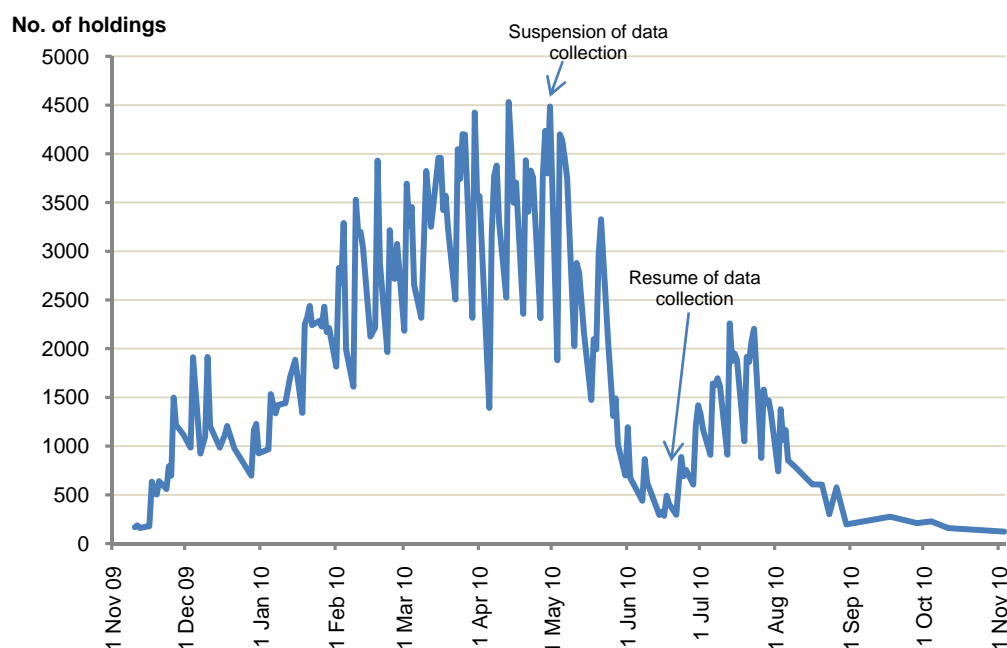
Illustration 2 - Data Collection Model in terms of Geographical Distribution



Hence, and considering the two stages, the pilot survey of the RA 09 had virtually no interruptions and was held between 17 March and 21 August 2009.

Collection was suspended on 1 May 2010 due to budgetary difficulties, solved only in mid-June, and was resumed on 16 June. This interruption caused strong disturbances in the dynamics observed in collection up until then. Meanwhile, the service provision contracts between several staff members and Statistics Portugal expired and were not renewed. Therefore, once work was resumed, work levels were quite lower than before, and the collection period was thus extended to the end of October 2010.

Chart 1 - Daily record of holdings during the data collection phase of RA 09



2.5 LIST OF PRODUCERS

Population

The population includes the agricultural holdings existing in Portugal.

Definition of agricultural holding

Agricultural holdings are techno-economic units where there is common use of inputs (labour, machinery, buildings, land, etc.) and that cumulatively:

- Produce agricultural products or maintain in good agricultural and environmental conditions land which is no longer used for production purposes (as set forth in Regulation (EC) No 1782/2003);
- Reach or exceed a specific size (minimum limit);
- Are in a specific identifiable location, even when their area covers more than one commune or even more than one municipality;
- Are operated under the single management of an agricultural holder, who assumes substantive decision-making.

The size conditions that agricultural holdings must meet are, in the following order:

- To have, in the Mainland, at least 1 hectare (ha) of Utilised Agricultural Area – UAA (arable land + kitchen garden + permanent crops + permanent grassland). In the Autonomous Regions limits are lower, the minimum UAA being 0.1 ha;
- Minimum area (or production) limits for at least one of the following crops:

Crops	Threshold	
	are	m ²
Flowers and ornamental plants (excluding nurseries)	5	500
Crops under glass or other (accessible) protective cover	5	500
Nurseries	5	500
Aromatic, medicinal and culinary plants	5	500
Market gardening fresh vegetables	10	1 000
Arable land seed and seedlings	10	1 000
Industrial crops (excluding aromatic, medicinal and culinary plants)	20	2 000
Orchard	20	2 000
Vineyard	20	2 000
Olive plantation	50	5 000
Potatoes (do not include potatoes from market gardening and kitchen gardening)	50	5 000
Open field fresh vegetables	50	5 000

- Existence, on the day of the interviewer's visit, or production in the crop year 2008/2009, of at least:

Animals	Threshold	
	Existence	Production
Breeding bulls	1	
Cows (exclude work animals)	1	
Bovine animals with 2 years old and over (exclude work animals)	2	
Fattening pigs	3	
Breeding sows	1	
Ewes	6	
Goats	6	
Breeding female rabbits	10	
Laying poultry and breeding poultry (chickens, turkeys, ducks, geese and guinea fowls)	100	
Inhabited hives and traditional cork hives	10	
Breeding ostriches	2	
Breeding quails	500	
Bovine animals		5

Animals	Threshold	
	Existence	Production
Pigs		5
Geese		250
Turkeys		250
Guinea fowls		250
Broilers		500
Ducks		500
Ostriches		15
Quails		10 000

These thresholds were applied in both surveys (FSS and SAPM) except for the animal housing characteristics for which it was considered the thresholds included in the Annex II of the Regulation (EC) No 1166/2008:

- Bovine animals - 10 head;
- All pigs - 50 head;
- Breeding sows - 10 head;
- All poultry - 1000 head.

As the survey progressed, a number of agricultural holdings in the list of producers might be considered as non-existent or in no enquiry conditions. This included, in particular, those that were incorporated into other holdings, whose agricultural area or animal houses went on to have another type of (non-agricultural) utilisation, those that, despite maintaining some sort of agricultural activity, lost the enquiry limits, or those that were double-counted in the list of producers.

List of producers

Within the scope of the RA 09 census operation a list of producers was prepared, as updated as possible, to support fieldwork.

To prepare the list of producers use was made of statistical and administrative sources, and quality criteria were defined for its construction.

The result was a table containing 506,840 agricultural holders, with the following structure:

Variable	Description
Source	Holder: source that survived
Key_Source	Holder: code associated with the producer (EA, NPC or N_INGA)
NIF	Holder: Individual or society Tax Identification Number
Name	Holder: name
DD_CC_FF	Location of the holding: code for district_municipality_commune
Mor_dd_cc_ff	Address of the holder: code for district_municipality_commune
CP4_CP3	Zip code_Auxiliar zip code

Variable	Description
Address	Holder: address
City/village	Holder: city/village
Telf1_ Telf2	Holder: phone1_phone2
E-mail	Holder: e-mail
Fax	Holder: fax

List of producers - sources

To obtain the list of producers, and with reference to the agricultural sample base – an agricultural holdings base to support agricultural surveys – ad hoc cross-checks were made with statistical files (statistical units file and specific surveys), with data from administrative sources, i.e.:

- Financing Institute for Agriculture and Fisheries (Portuguese acronym: IFAP)
- Diesel – Directorate General for Agriculture and Rural Development (Portuguese acronym: DGADR)
- Institute of Vineyard and Wine (Portuguese acronym: IVV)

Characterisation of each source:

Statistical files

SOURCE: Agricultural sample base (Portuguese acronym: BAA)

Responsibility: Statistics Portugal

Coverage: All agricultural holders

Geographical scope: Mainland, Autonomous Region of the Azores, Autonomous Region of Madeira

Size: 416,362 holders

Reference point: 1999 to 2008, and may vary depending on updates by surveys or administrative sources

SOURCE: Statistical units file

Responsibility: Statistics Portugal

Coverage: All companies and self-employed people

Geographical scope: Mainland, Autonomous Region of the Azores, Autonomous Region of Madeira

Size: 977,213 registrations in 2008

Reference point: online (2008 and 2009)

Administrative sources

SOURCE: IFAP

Responsibility: Financing Institute for Agriculture and Fisheries

Coverage: Agricultural holders that actually received aid in the reference year

Geographical scope: Mainland, Autonomous Region of the Azores, Autonomous Region of Madeira

Size: 211,434 holders in 2007 and 203,294 in 2008

Reference point: Crop years 2006/2007 and 2007/2008 (autumn / spring)

SOURCE: DIESEL

Responsibility: Directorate General for Agriculture and Rural Development

Coverage: Agricultural holders and/or forestry producers and lessors owning eligible diesel-using equipment intended for agricultural and/or forestry production. Beneficiaries of irrigation equipment have to register the UAA by presenting the parcels that have been declared.

Geographical scope: Mainland. There are also benefits for agricultural diesel in the Autonomous Region of the Azores, but the administrative processes are distinct

Size: 139,230 holders/producers in 2008 and 142,210 holders/producers in 2009

Reference point: 2008 and 2009 calendar years

SOURCE: VINEYARD REGISTER (IVV)

Responsibility: Institute of Vineyard and Wine

Coverage: Wine parcels

Geographical scope: Mainland

Size: 171,760 holders

Reference point: online (2008)

Other sources

In addition, use was made of files with specific information from the Autonomous Region of Madeira and, on an ad hoc basis, information scattered in files from other statistical surveys of the Economic Statistics Department, notably the inquiry populations of statistical operations targeted at poultry farms and nurseries.

List of producers - reference period and update process

The list of producers became available at end-August 2009. Its preparation occurred in two distinct periods:

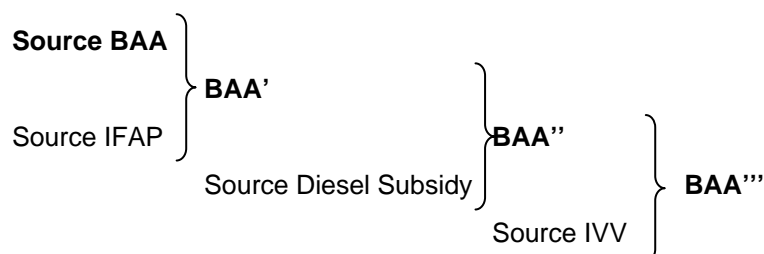
- 6 March 2008 / 30 September 2008
- 15 April / 21 August 2009

In the process of updating and rendering the different available sources compatible, Statistics Portugal used a tool developed in QualityStage, a data quality management application. This application supported the implementation of processes within the scope of the standardisation and consolidation of names and addresses.

Based on the use of the QualityStage tool, a sequential process was established to compare sources, two by two. After the definition of survival criteria, this gave rise to provisional lists of producers.

The provisional result is compared with a new source, until a final consolidated list of producers is obtained (BAA’’’).

The sequential scheme is as follows:

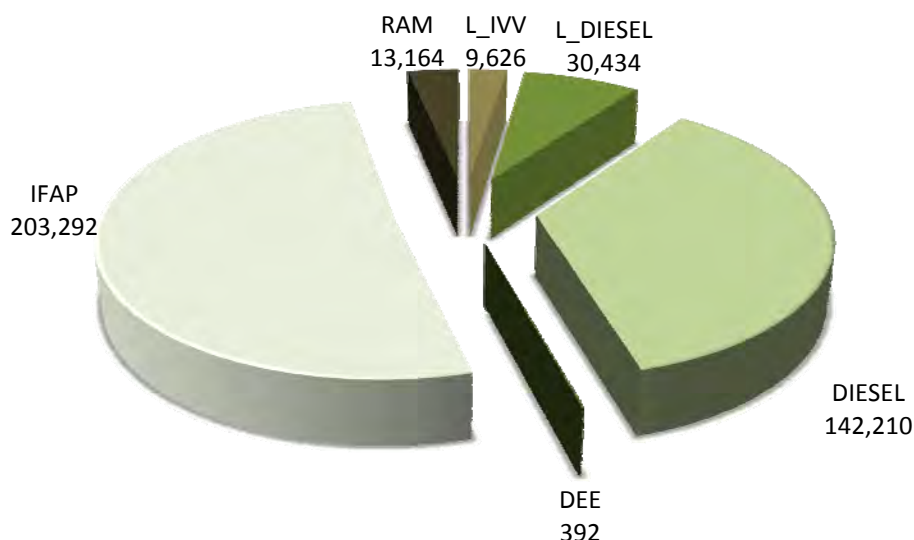


It was deemed necessary to define survival rules for the “selection” of the producer who subsists given a group of “potentially” equal producers; essentially, the rules are related to the quality/timeliness associated with each source.

In the 2009 process the list was updated with the latest data obtained from the Directorate General for Agriculture and Rural Development, the Financing Institute for Agriculture and Fisheries, the Autonomous Region of Madeira, and also available in the Economic Statistics Department.

As an illustration, the following chart summarises the data volume that was subject to comparison, by source:

Chart 2 – Distribution of holders by type of source



Legend of the source:

- L_IVV: entries on 2008 list, source that survived: IVV
- L_DIESEL: entries on 2008 list, source that survived: DGADR
- IFAP: entries 2009, source: IFAP
- RAM: entries 2009, source: DREM
- DIESEL: entries 2009, source: DGADR
- DEE: entries 2009, source: Statistical Surveys DEE (TQRA_09 and others)

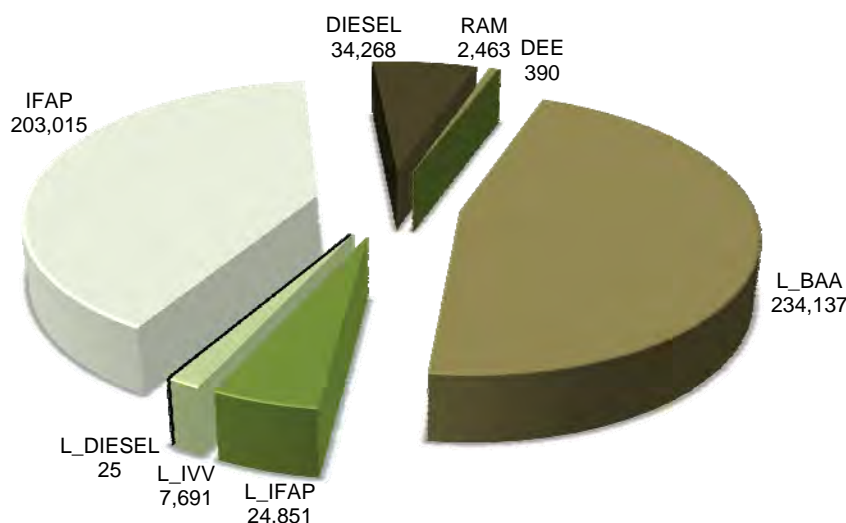
List of producers - final quality analysis

Following implementation of the QualityStage software and definition of survival rules for producers, a provisional list was obtained, which was subject to various types of analyses, as a result of the enhancement, improvement and update of information:

- (a) Spelling correction of names, addresses and cities, undetectable in the standardisation made by the software application;
- (b) Construction of Access queries to detect and eliminate possible double counting that may persist: same names/District/Municipality/Commune (DT/MN/FREG)/Tax identification number; names/telephone/ DT/MN/FREG/address; etc.
- (c) Comparison with data from the statistical units file to complement registers with missing information, in particular names, incomplete or unknown addresses, DT/MN/FREG/4 and 7-digit postal_code;
- (d) Update of the DT/MN/FREG code of the holding and the producer with current territorial referencing (Portuguese acronym: REFTER) codes, ensuring completion of all fields;
- (e) Assignment of cities of the Portuguese Mail Services (CTT) when there is a common 7-digit DT/MN/FREG/postal_code key between the two bases of comparison;
- (f) Completion of nil postal codes through the DT/MN/FREG link with the CTT table for which there is a direct match;
- (g) Replacement of legal person identification numbers started with 8xx by new numbers, started with 1xx or 2xx;
- (h) Filtering of telephone characters and elimination of telephones without 9 digits;
- (i) Elimination of the completion of the address field, whenever the address and city fields were exactly alike;
- (j) Implementation of additional criteria to eliminate residual holdings. It was assumed that holdings gathering the following characteristics in 1999 had most likely disappeared:
 - They belonged to elderly sole holders (≥ 65 years);
 - There was no family agricultural labour force (beside the spouse) working at least 50% of the agricultural activity time in the holding;
 - They did not employ permanent workers.

As a result of this process a list of producers was obtained, with 506,840 registrations and the following breakdown:

Chart 3 – Distribution, on the list of producers, of the holders by type of sources

**Legend of the source:**

- L_IFAP: entries on 2008 list, source that survived: IFAP
- L_BAA: entries on 2008 list, source that survived: BAA
- L_IVV: entries on 2008 list, source that survived: IVV
- L_DIESEL: entries on 2008 list, source that survived: DGADR
- IFAP: entries 2009, source: IFAP
- RAM: entries 2009, source: DREM
- DIESEL: entries 2009, source: DGADR
- DEE: entries 2009, source: Statistical Surveys DEE (TQRA_09 and others)

After the start of the census operation fieldwork there was a need to adjust the list with 2,941 producers, 2,710 from the IFAP file with the bovine livestock registered in the national bovine identification and registration system (Portuguese acronym: SNIRB), all from the Azores, and 231 from the vineyard file of the Madeira Wine, Embroidery and Handicraft Institute (IVBAM), all from Madeira.

In the course of the RA 09, 5,398 new agricultural holdings were registered, i.e. holdings that were not included in the initial list of producers nor in the updates meanwhile made.

Changes in the definition of agricultural holding affecting data comparability with previous operations

There were no changes in the definition of agricultural holding, wherefore data comparability with previous operations is perfectly possible.

2.6 TYPE OF SURVEY

The RA 09 is an exhaustive survey, even for characteristics referring to other gainful activities carried out by the labour force and for the characteristics of the survey on agricultural production methods, which pursuant to Community legislation could be held as sample survey.

2.7 SAMPLING, COLLECTION AND RECORDING

2.7.1 Sample design

Not applicable

2.7.2 Collection and recording

The survey was conducted through face-to-face interviews, and collection was based on paper questionnaires. For the first time in Portugal in terms of agricultural area surveys, most interviewers (86.3%) were also responsible for the recording of data on the laptops they were given.

RA 09 management and recording application

A generic application was developed, standardisable by survey (set of validation items and rules), to support the RA 09 and agricultural direct collection statistical operations in the next decade.

The application is composed of the following modules:

- Management of the survey. Import of validation items and rules;
- Management of agricultural holdings. Import and consultation of the sample. Formulation of monitoring lists;
- Management of the chain of collection. Assignment of user profiles and allocation of agricultural holdings to interviewers;
- Management of questionnaires. Includes the recording module;
- Payments. Introduction of generic and specific variables to prepare payment slips;
- Data analysis. Totalisers, ad-hoc selections and comparison with external sources;
- Maps;
- Synchronisation (between the interviewers' laptops and the central database).

Software engineering was carried out with recourse to outsourcing. IT specifications were made in three months and were developed in about a year.

A web application was developed with a central environment targeted at survey management and analysis, and a local environment on laptops with 3G dongles, targeted at questionnaire recording and validation by interviewers. At local recording level, an offline solution was chosen, for swiftness purposes and also for lack of broadly-based coverage by 3G dongles. 3G dongles were used in the recording to synchronise recorded data with the central database, for email access and the updating of the software application itself.

To control access to the operating system a new version of a software application of Statistics Portugal (WebInq) was developed, consisting of a shell to control access to the disk, the web and the email by external users who used desktops and laptops of Statistics Portugal.

Hardware

Hardware used:

- 1 web server/application server (virtual machine, 4 CPU, 4 Gb ram memory)
- 1 database server (16 Gb ram memory)
- 81 desktops (section managers and staff using laptops)
- 188 laptops (local technical staff)
- 1,220 laptops (interviewers)

Software

Software used:

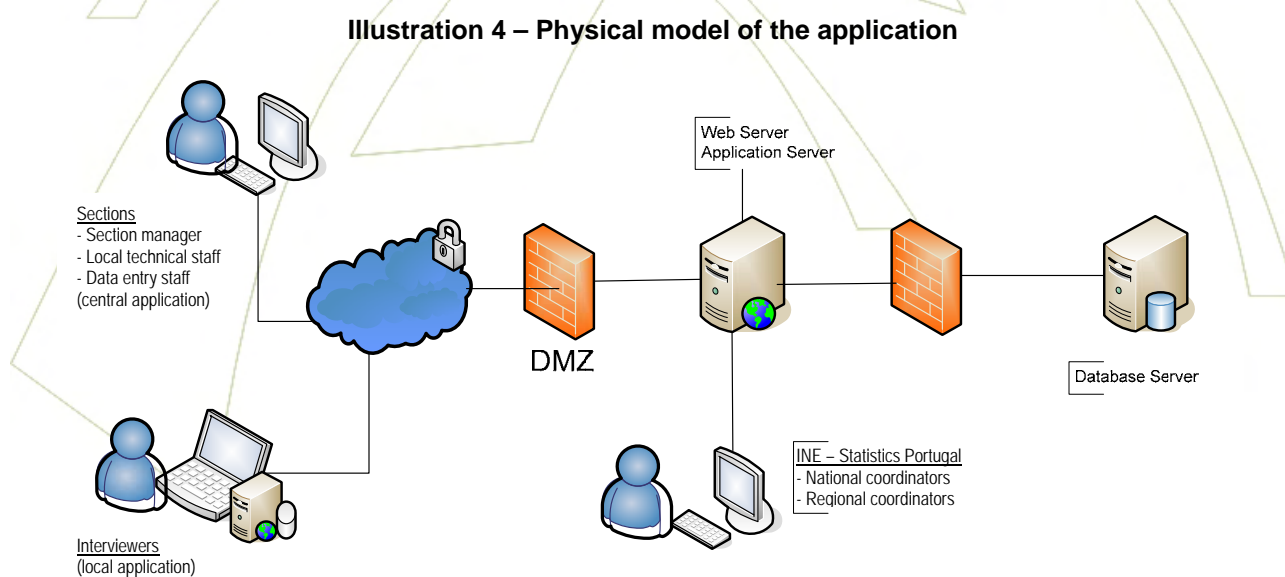
- Java
- Oracle 10 and Oracle Express

Communications

Communications used:

- 3G dongles

Software architecture



Strengths of the collection and recording application

Summary of the main strengths of the application:

- Solution that may be used in other statistical operations;
- Recording by interviewers. Correction of errors by interviewers;
- Validation rules editor. Time saving in the programming and testing of rules;
- Selection editor (ad-hoc queries). Research by users with no need for programming;

- Update of the local online application;
- Advantages inherent in a web application (broadly-based access, central application update, centralised database, online output).

Weaknesses of the collection and recording application

Likewise, the main difficulties observed in the use of the collection application/model were:

- Difficulty in IT support due to the quantity and dispersion of equipment;
- As the application was simultaneously for data recording, management and analysis, difficulty in controlling requests that were too slow and the period when they were carried out, which sometimes undermined application performance;
- The need for offline recording by interviewers required a synchronisation process with the difficulties inherent in conflict management and 3G coverage failures.

2.7.3 Use of administrative data sources

In the RA 09 use was made of administrative data both in the creation of the list of producers and in output validation.

Information from administrative data sources for the creation of the list of producers

The list of producers resulted from crossing the agricultural sample base (based on the 1999 General Agricultural Census and updated on the basis of agricultural surveys and other sources) with data from administrative sources.

Table 9 – Administrative data sources used to build the list of producers

External source	File	Correspondence between the INE's definition of holding and the one from the external source
Financing Institute for Agriculture and Fisheries (IFAP) – IACS	Holders that received payments under the common agricultural policy from IFAP in 2009	Theoretically there are no significant differences between the concepts of INE and IFAP. However, often the beneficiaries of IFAP and holders don't have a perfect match (e.g.: one holding may correspond to two or more beneficiaries of IFAP, when/if different household members apply for aid).
	SNIRB (National System of Identification and Registration of Bovines) – bovine keepers at national level	There are differences between the "holding" of SNIRB and "holding" of INE (e.g., one holding may correspond to two or more holdings of SNIRB).
Institute of Vineyard and Wine (IVV)	Grape growers in the vineyard register	Theoretically there are no significant differences between the concepts of INE and IVV.
Directorate General for Agriculture and Rural Development (DGADR)	Beneficiaries of 2009 diesel subsidy	Theoretically there are no significant differences between the concepts of INE and DGADR.

Data from administrative data sources for output validation

Table 10 shows the administrative sources used to compare the recorded items.

Table 10 – Administrative data sources used for comparisons

External data source	File
Financing Institute for Agriculture and Fisheries (IFAP) – IACS	Area declared by the holders that received payments under the common agricultural policy from IFAP in 2009
	Cattle registered in SNIRB in November 2009
Institute of Vineyard and Wine (IVV)	Vineyard area of the register
Directorate General for Agriculture and Rural Development (DGADR)	Area and equipments declared by the beneficiaries of 2009 diesel subsidy
Madeira Wine, Embroidery and Handicraft Institute (IVBAM)	Vineyard area of the register of Madeira Autonomous Region
Portuguese Geographic Institute (IGP)	Area of the commune

2.8 SPECIFIC TOPICS

2.8.1 Common land

Methodology

In Portugal there is land owned and managed by local communities, the so-called common land. Common land are common adjacent grounds for agricultural, forestry, silvo-pastoral or apicultural uses, notably cattle grazing, cultivation, harvesting of wood and scrub, etc. For the purpose of representation, planning, management and auditing, they have an assembly of counterparts, a governing board and an auditing commission. In general, the governing board is composed of a group of inhabitants of the commune where the common land is located, and may also be managed by the commune office. The right to use the common land is restricted to counterparts according to customs. As a rule, it has no permanent workers or livestock.

In line with the decisions taken at the FSS WG meeting on 21-22 September 2009, common land should be recorded using one of the following three methods (by priority according to the following order):

1. In proportion to its use by each holding. In this method, common land area used by a holding would be included in its UAA (taking care to avoid double counting);
2. As “common land agricultural holding”, as long as the techno-economic unit fulfils the agricultural holding definition criteria;
3. Indication, for the most relevant geographic level (e.g. NUTS 3), of the total area of common permanent grassland.

Following the method already used in previous farm structure surveys, Portugal adopted method 2 and considered common lands as agricultural holdings.

The questionnaire used to survey common land was that used for any other holding. The common land option was included in the legal personality of the holding.

Illustration 5 – Question on the legal personality of the holding (Mainland RA 09 questionnaire)

25 – LEGAL PERSONALITY OF THE HOLDING

Legal personality of the holding 2500

CODES FOR THE LEGAL PERSONALITY OF THE HOLDING

Natural person (Sole holder) with major use of family members on farm work.....	= 1
Natural person (Sole holder) with major use of non-family labour.....	= 2
Legal persons (include group holdings).....	= 3
Common land managing party.....	= 4
Other (cooperative enterprises, associations, fundations, monasteries, convents, seminars, private schools.....)	= 5

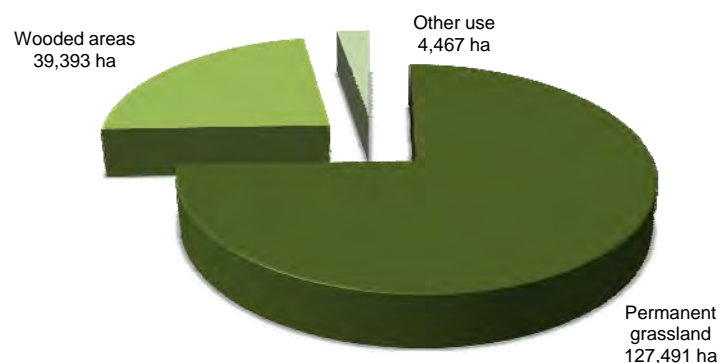
The main concern was to avoid double-counted areas in the common land and in the holdings of holders using common land. The focus was on training, interviewers having been alerted to these situations. Data analysis, throughout the collection, allowed for the control, detection and correction of those cases where there was double counting.

Moreover and in order to avoid some constraints that occurred in the previous FSS, since the beginning these holdings earned special attention by the field team and all of them were cross checked with integrated IACS/Land Parcel when it was available and geographical area of the commune.

Output

The RA 09 computed 368 common lands, with a total area of 171,351 ha. Land use is broken down as follows:

Chart 4 – Land use of common land - RA 09



As seen, approximately 75% of the total area of common land is permanent grassland and 23% is woodland, confirming the silvo-pastoral orientation of most of these holdings. Over 7% of the country's permanent grassland area (clean land and under forest cover) is common land.

With regard to the 2007 farm structure survey there is an increase in the number of holdings (+9%), but a decrease in the total area (-12%).

Table 11 – Common land on FSS 07 and on RA 09

Common Land	FSS 07	RA 09	Variation
Holdings (No.)	338	368	+30
Total area (ha)	193,699	171,351	-22,349

These changes may be chiefly accounted for by two reasons:

- The type of survey held in 2007 (sample survey), and the extent to which the sample basis or the sample design were out of date;
- The difficulty in quantifying precisely the areas of these holdings. Common land extends throughout large open hilly mountainous areas, with poor soils and pastures or forest land, and it is often very difficult for the common land governing board itself to indicate the area in a precise manner.

2.8.2 Geo-referencing of agricultural holdings

The Statistics Portugal spatial data infra-structure to support statistical activity does not incorporate specific geographic data to delimit or position agricultural holdings. In this context, the geo-referencing of agricultural holdings observed in the RA 09 was carried out according to the following methodology:

Assumptions

- Non-existence of coordinates for agricultural holdings;
- Existence of coordinates for the commune's centroids of the polygons;
- For reasons of statistical confidentiality, the coordinates for the representative point of the agricultural holding geo-referencing are likely to undergo a degradation of 5 minutes of arc (5').

Premise

- The Earth is a sphere with a radius of 6,400,000 m.

Geographic data

- Official Administrative Map of Portugal (Portuguese acronym: CAOP 2010), with the following geographic referencing:
 - Mainland: ETRS89 / PT-TM06
 - Archipelagos of the Azores and Madeira : ITRF93 / UTM

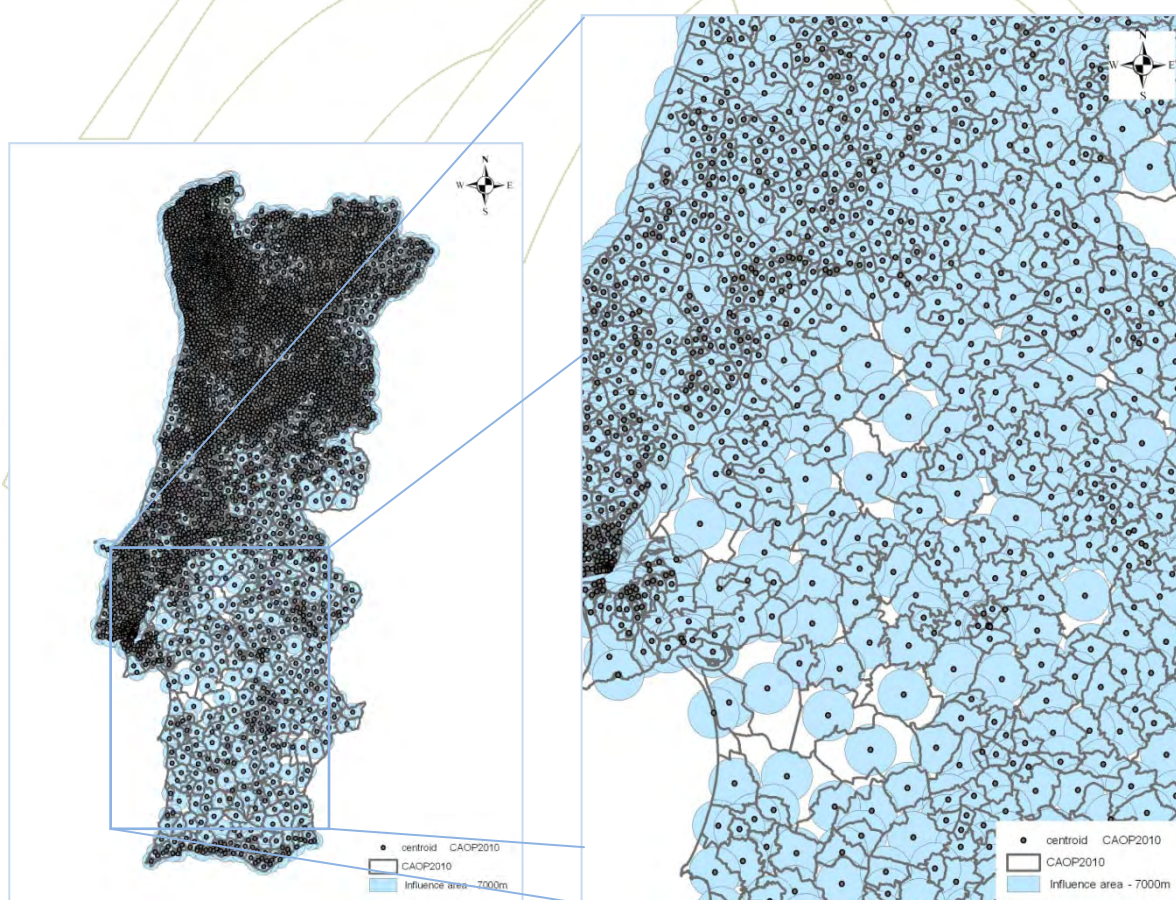
Calculations

- For different latitudes, the value corresponding to 5 minutes of arc (5') was calculated in linear units;
- Generation of a geometry of circles considered to be the area of influence in relation to the commune centroids;
- Overlay between the commune polygons and the areas of influence of centroids.

Output

- Geo-referencing of the agricultural holding through the commune centroid in those cases where the area of influence of centroids intersect the administrative boundaries of the commune;
- Txt file containing coordinates for CAOP 2010 commune centroids;
- Images:

Illustration 6 – Overlay between the polygons of the communes and areas of influence of the centroids (overview and detail)



2.8.3 Volume of irrigation water

MECAR - Methodology to estimate irrigation water in Portugal

MECAR resulted from a partnership between Statistics Portugal and ISA/CENTROP (Instituto Superior de Agronomia/Centros de Estudos Tropicais para o Desenvolvimento). After a comparative approach of different alternative methodologies, the utilisation of estimation models based on the soil-water balance was considered as the most suitable way to achieve the objectives proposed.

The methodology relied on soil-water balance, obtained through the ISAREG mathematical model (Teixeira and Pereira, 1992 and Teixeira, 1994), which is based on the FAO procedure (Doorenbos and Pruitt, 1977 and Doorenbos and Kassam, 1979), to determine crop water needs, to which efficiency loss correction factors are applied, deriving from the characteristics of the irrigation systems used and of irrigation conditions, in particular management by their owners.

This programme requires a set of initial data, particularly on soils, actual precipitation, evapotranspiration, crops and water content in the soil.

The simulation for each of the different meteorological conditions considers a representative soil texture and the respective crops in each of these areas. The ISAREG model gives an indication through the soil-water balance of the volume of irrigation water for each crop under the simulated conditions. Obviously, this value does not include water losses in the irrigation system, wherefore these will be subsequently allocated to the respective irrigation efficiency.

Hence, the value generated by the model for each crop must correspond to a level of irrigation efficiency, resulting from the characteristics of the irrigation system and the technical capabilities of farmers.

Once the area of each agricultural holding is obtained, a value is generated indicating the corresponding volume of irrigation water.

The methodology adopted was approved by Eurostat, with the final report accepted on 18 November 2009, having received a financial grant from the Community.



MECAR Report

Efficiency of irrigation systems

The following irrigation methods were considered:

- *Surface or gravity irrigation* includes flow irrigation, irrigation in traditional or modern basins, furrows, ditches and by flowing, such as lima irrigation;
- *Pressure irrigation*, in which the water is led under pressure through pipes of different diameters, includes (fixed or towable) sprinkler irrigation, water cannons, centre pivots and linear move systems;
- *Localised irrigation* includes drip irrigation, in which the water is supplied drop by drop at appropriate intervals, and micro-sprinklers, in which the water is supplied to small land areas (circular or circle sectors).

Taking into account the different irrigation systems and that their efficiency changes within certain ranges, depending on the quality of the equipment, local conditions and the respective management, the available bibliographic references were consulted. A value was then set for each irrigation system, indicative of the national reality, and corresponding to equipment under good operating conditions and without any particular restrictions, which may be deemed to be the potential efficiency (E_p) in each irrigation system.

Table 12 – Indicative values of the efficiency of the irrigation method

Irrigation method			Indicative values referred on bibliography (%)	Values adopted E_p
SURFACE IRRIGATION	Furrows	Traditional	50-90 ¹ 30-70 ² 40-70 ³	65%
		Modern	70-75 ⁴ 60-70 ⁵ 60-90 ¹ 60-75 ⁶ 65-85 ³	75%
	Other	<i>Lima irrigation</i>	-	50%
		Basins (excluding rice fields)	60-85 ⁴ 80 ⁵ 60-95 ¹ 80-90 ⁶ 45-90 ³ 75 ⁷	80%
		Ditches	60-75 ⁴	70%
PRESSURE IRRIGATION	Sprinkler irrigation	Towable sprinkler irrigation	65-85 ⁴ 70-80 ⁵ 65-95 ⁸ 72-88 ⁹ 65-80 ¹ 65-75 ⁶ 65-85 ¹⁰ 65-75 ² 65-80 ³	75%
		Fixed sprinkler irrigation	65-85 ⁴ 70-80 ⁵ 65-95 ⁸ 72-88 ⁹ 70-85 ¹ 70-80 ⁶ 70-85 ¹⁰ 70-80 ² 65-85 ³	75%
	Water cannons	60-70 ¹ 60-70 ⁶ 60-75 ¹⁰ 65-75 ² 55-70 ³	70 %	

Irrigation method		Indicative values referred on bibliography (%)	Values adopted <i>Ep</i>
Localised irrigation	Pivot	80 ⁵ 70-95 ¹ 75-90 ⁶ 67-90 ¹¹ 75-90 ¹⁰ 70-85 ² 65-85 ³	85%
	Drip irrigation	75-90 ⁴ 80-90 ⁵ 85-95 ¹² 75-95 ¹ 75-90 ⁶ 85-90 ¹⁰ 70-90 ² 80-90 ³	90%
	Micro-sprinklers	70-86 ¹¹ 85-90 ¹⁰ 70-85 ² 85-95 ³	85%

¹Rogers *et al*, 1997 ; ²Smajstrla *et al*, 2002; ³Keller et Bliesner (1990), Wolters et Keller (1992); ⁴Merriam & Keller, 1978; ⁵Larry G. James, 1988; ⁶Kenneth H. Solomon, 1988; ⁷Burt *et al*, 1999; ⁸Redfield, 1952 e 1953; ⁹Claude Pair, 1986; ¹⁰Clemmens, 2000; ¹¹Edkins, 2006; ¹²Raposo, 1996 (see bibliography on MECAR report)

Potential irrigation efficiency correction factors

Considering that potential efficiency can only be reached under conditions corresponding to a good dimensioning of the whole irrigation system and its appropriate management, it was deemed possible to characterise the quality of such management by means of indicators inherent in farmers and agricultural holdings, based on agricultural surveys.

In this vein, a range of indicators were selected and subsequently weighted and quantified, making it possible to define different efficiency levels and therefore to correct potential efficiency, adjusting it to actual efficiency, close to that obtained by farmers.

The indicators described below were the most representative, reflecting the farmers' capacity to manage the irrigation system.

1) Legal personality of the holding

Autonomous sole holders - natural persons who, permanently and predominantly, resort to their own activity or the activity of the members of their household in their agricultural holding, with or without exceptional recourse to employees.

Businessmen - natural persons who, permanently and predominantly, resort to the activity of employees in their agricultural holdings.

Group holdings - all corporations set up according to the commercial and civil codes, including group holdings: joint-stock companies managed by natural persons (holders) being a group of partners, who jointly manage an independent agricultural holding or group holdings (usually one per each person). They may appoint one of the members to manage the holding.

Other types of legal personalities of holdings - all agricultural holders who are legal persons not belonging to the above categories: State and Public Persons, Common land and Other Entities.

2) Age

3) Educational attainment

The highest grade completed within the most advanced level attended in the educational system of the country where education was received; for those who are still studying, the grade considered is the degree immediately below the current level.

4) Agricultural vocational training

Activities chiefly aimed at acquiring the required theoretical/practical skills, knowledge and abilities for the exercise of the functions of a specific profession or task in agriculture.

Exclusively practical training - exclusively acquired through practical work on one or more agricultural holdings.

Basic training (training courses) - training obtained via agricultural vocational training courses at a Vocational Training Centre or another appropriate place, and limited to certain agricultural or cattle breeding related areas. Courses may be of short or long duration.

Full agricultural training – training courses continuing for the equivalent of at least two years full-time training after the end of compulsory education and completed at a secondary school, an agricultural college or university, and including subjects such as agriculture, viticulture, pisciculture, veterinary science, agricultural technology or an associated subject.

Weighting factors

The different indicators were not assumed to have identical importance for the selection of the “correction factor”, wherefore they were assigned differentiated weights:

Table 13 – Relative weight of the different indicators

Indicator	Relative weight
Legal personality of the holding (NJUR)	10
Age (ID)	15
Scholarship level (NESC)	35
Agricultural training (FPA)	40

Classification via the correction factor would correspond to three efficiency levels:

Level 1 – low efficiency

Level 2 – average efficiency

Level 3 – high efficiency

where survey variables related to agricultural holdings should assume the values in the following table:

Table 14 – Efficiency levels by legal personality of the holding

Legal personality of the holding - NJUR	Efficiency level
<i>Sole holder using mostly family members on farm work</i>	1
<i>Other</i>	2
<i>Sole holder using mostly non family labour</i>	3

and when related to managers, the values below:

Table 15 – Efficiency levels by age of the manager

Age - ID	Efficiency level
<i>> 65 years old</i>	1
<i>From 45 to 64 years old</i>	2
<i>< 45 years old</i>	3

Table 16 – Efficiency levels by scholarity level of the manager

Scholarity level of the manager - NESC	Efficiency level
<i>Primary or pre-primary education</i>	1
<i>Non-agricultural secondary or tertiary education</i>	2
<i>Agricultural secondary or tertiary education</i>	3

Table 17 – Efficiency levels by agricultural training of the manager

Agricultural training of the manager - FPA	Efficiency level
<i>Only practical agricultural experience</i>	1
<i>Basic agricultural training</i>	2
<i>Full agricultural training</i>	3

Calculation method

In order to calculate the total volume of irrigation water, and in addition to obtaining the agricultural holding area (A_{exp}) and the efficiency of the irrigation system, the efficiency correlation factor should be calculated.

In line with the foregoing point, the efficiency level (EFI) is calculated according to the following formula:

$$EFI = \frac{NJUR \times 10 + ID \times 15 + NESC \times 35 + FPA \times 40}{100}$$

And it is considered that:

- If $EFI < 1.5$, efficiency is low - Level 1;
- If $1.5 \leq EFI < 2.5$, efficiency is average - Level 2;
- If $2.5 \leq EFI \leq 3.0$, efficiency is high - Level 3.

Hence, according to the level obtained from the efficiency level result, the correction factors (F_c) will be 90%, 95% and 100% respectively, to be multiplied by the potential efficiency of the irrigation system (E_p), according to Table 7.

Table 18 – Correction factor according to the calculated efficiency level

Level 1 – low efficiency	$E_p \times 0.90$
Level 2 – average efficiency	$E_p \times 0.95$
Level 3 – high efficiency	E_p

Therefore, the irrigation efficiency (E_r) is given by $E_r = E_p \times F_c$, and hence the **total irrigation volume** (VR) will be:

$$VR = \frac{V_r}{E_r}$$

where V_r represents the simulated irrigation water volume.

2.8.4 Other specific topics

2009, covering most of the reference period for the majority of characteristics surveyed in the RA 09, was characterised by temperatures close to the average values (1971-2000). With regard to the amount of precipitation, the recorded values were slightly lower than normal (1971-2000), with an ensuing classification as a normal to dry year. Hence, it is relatively safe to say that weather conditions in the reference period did not introduce significant changes in agricultural practices in the crop year under review, compared with a regular year.



Annual Climate
Characterization 09

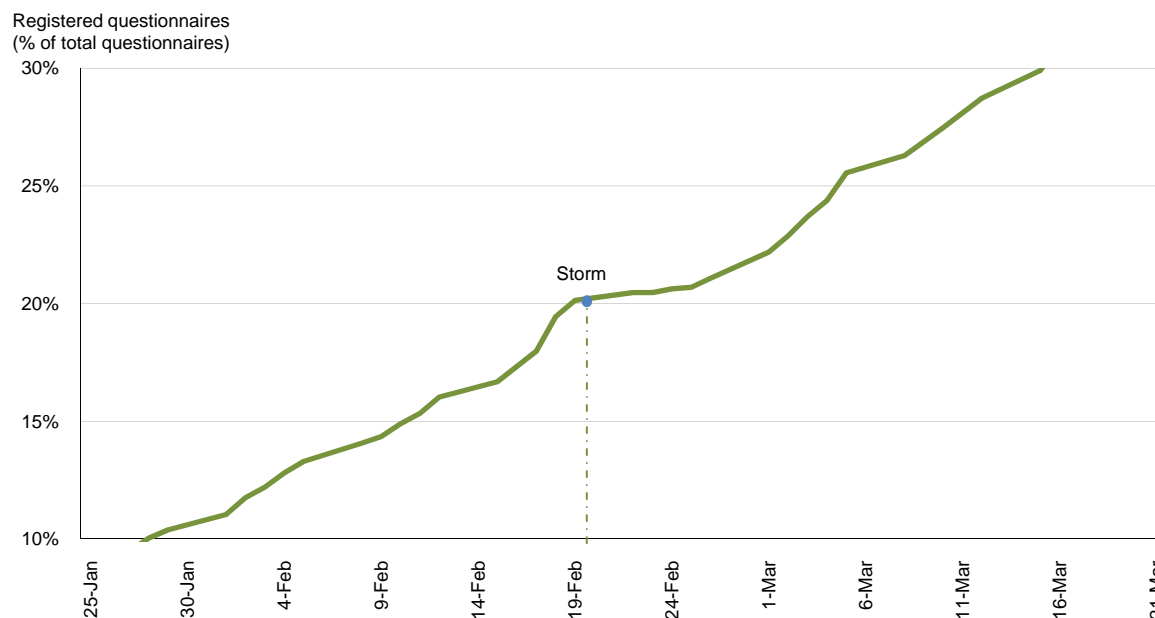
The Portuguese Meteorological Institute classified 2010 – during which most data collection took place – as the rainiest of the decade (2001-2010). This is a further difficulty in the data collection process, particularly due to the restrictions posed to the trips of interviewers (their productivity decreased when precipitation was high) and the availability of holders (when the rain stopped, they used the opportunity to make up for lost time due to rainy days, and thus were not available to receive interviewers).



Annual Climate
Characterization 10

On 20 February 2010 extreme adverse weather conditions in the [Autonomous Region of Madeira](#) (with precipitation in Funchal reaching 114.3 mm in only 6 hours) conditioned collection for about one week, given that road traffic was severely affected. Transit in some of the island's main routes was very difficult or even impossible, due to a constant risk of collapse. However, this temporary suspension of collection did not particularly affect the pattern of work observed throughout the remainder of the operation, with Madeira even being one of the first regions to conclude collection.

Chart 5 – Data registry in Madeira: influence of the storm of 20 February 2010



2.9 MEASURES TO INCREASE THE RESPONSE RATE

Promoting and advertising the statistical operation

With a view to raising awareness among the population to the importance of this operation, and in addition to advertising it in the main national media (television, radio, newspapers), leaflets were distributed and posters displayed in locations of public interest (Regional Directorates of Agriculture and Fisheries, treasury offices, social security centres, health centres, post offices, local councils, commune offices, etc.) and in areas where this operation was expected to have a greater impact on agricultural holders (Azores, Centro Region). At local level, this operation was also advertised in churches and other places of worship.

Before the interviews, due to the high costs involved and also the fact that the files with the contacts of agricultural holders had not been updated, no letters (circular letters) were sent to agricultural holders informing them on the statistical operation, its purposes, the importance of their cooperation, and the date of the interviews.

Priority of data collection

- Holdings with a location other than the address of the holder – prior to the interviews, interviewers identified the agricultural holdings that had been allocated to them and which were located in a commune other than that of the holder's address. Priority was given to these interviews, especially those located in different agricultural areas. It was thus ensured that the questionnaire would be transferred accordingly and the interview made in due time. In addition, this procedure also permitted

to avoid the possibility of the holder returning to the agricultural holding, leading to a new transfer of the questionnaire. Priority contact with these holders could also in a first instance avoid the transfer of the respective questionnaires.

- Large holdings and/or holdings with significant activity in their location area – the evaluation of the holdings' size, as well as the importance of their activity in the respective geographical area, were two crucial factors for interview priority.

Prior scheduling of the interview

With a view to enhancing the success of the interview, in particular the required availability of the agricultural holder to respond to the interview on a single occasion, where possible, the interviewer made an appointment with the agricultural holder. It was thus possible to avoid, for instance, incomplete collection of data, additional visits, and unnecessary further availability for concluding the collection/interview.

“I have been here” message

As this was a census operation, reminders were adopted insisting on the need for making the interview and obtaining the necessary information. Therefore, in those cases where interviewers visited the address of the holder or agricultural holding, but could not get in touch with the holder, they left the message “I have been here”, i.e. the indication that they had visited the holding/address of the holder, and informing of a date for a new contact. This was intended to speed up the process, permitting the interviewer to establish a future contact with the holder in order to obtain response.

Interview techniques

With a view to raising the awareness of interviewees, leading them to cooperate and supply the required information, during the interviews interviewees were always informed about the purpose of the survey. They were persuaded, motivated and clarified regarding the importance of their cooperation. Where necessary, interviewers always sought to provide the required explanations, showing dependability and availability. In order to ensure the confidentiality and reliability of data, no third persons were allowed during the interviews, except where that was required by the person responsible for the information supplied.

Reminder that a response must be given

Whenever an interview could not be made, irrespective of the reason (impossibility to locate the holding or to contact the holder, absence of the interviewee, refusal by the holder to answer the interview), every effort was made to reverse the situation. The interviewer could resort to the local technical staff member. The interview would be considered non-achieved only after such conclusion had been drawn by higher hierarchical members in the chain of collection, and the decision communicated to the local technical staff member.

Obtaining alternative contacts

In addition, obtaining alternative contacts whenever it was impossible to contact the holder proved to be quite an important asset in terms of recovering missing interviews.

Payment of non-achieved interviews

The actual payment of non-achieved interviews was a further incentive for the interviewer to take all necessary steps to obtain the interview.

Treatment of refusals – Reminders until interview was considered non-achieved

In those cases where the reason for not making the interview (non-achieved interviews) was refusal, the interviewer tried to reverse the situation, insisting, in person and accompanied by the local technical staff member, on the need for the agricultural holder, or the responsible person, to supply the information required.

When it was not possible to reverse the situation at this level, the section manager was informed and indicated the subsequent step. If the situation remained unchanged (non-achieved interview), the section manager would follow the procedures in force, and request guidance to the regional coordinating body. This body would be responsible for any decision on the impossibility of conducting the interview. This decision alone made it possible to record a questionnaire to an agricultural holding as a non-achieved interview.

Treatment of refusals – Circular letter

In the cases of refusal confirmed by the regional coordinating body, a circular letter was sent to the holder/person responsible for supplying the information, informing them of the mandatory nature of the response and the fines to which they were subject in case of non-compliance with the legal obligation (according to Article 4 (1) of Law No 22/2008 of 13 May and Article 4 (5) of Decree-Law No 166/2007 of 3 May). This made it possible to reverse a number of refusals, especially in the Autonomous Region of Madeira and Ribatejo e Oeste. In view of this particular output and the fact that the final number of non-achieved interviews due to refusal was rather low at national level (4% of non-achieved interviews, accounting for 0.02% of total agricultural holdings), it was decided that no legal action would be taken.

Back-up teams

An exhaustive review of non-achieved interviews and of the geographical areas lacking the most interviews was carried out near the end of the RA 09, in order to close the operation. Back-up teams were created for this purpose, comprising some of the best staff/interviewers, whose performance had proven relevant during the RA 09. Considering that obtaining data for this operation implied a high level of difficulty, associated with the fact that some interviewers originated from other regions (and were therefore out of their “work place”), these teams received, as motivation, higher payments than initially defined and/or an additional percentage regarding work achieved (“Additional payment”).

Against this background, holdings where conducting interviews was a priority were further identified, in line with pre-established criteria (based on their size – total area and UAA – and/or the relevance of a given activity carried on in the agricultural holding with an impact on aggregate data of the respective location).

3. PRECISION AND RELIABILITY OF COLLECTED DATA

3.1 DATA PROCESSING, ANALYSIS AND ESTIMATION

3.1.1 Estimation and sampling errors

Not applicable.

3.1.2 Other errors

For budgetary reasons the RA 09 did not include the planned quality survey, wherefore it was not possible to estimate coverage errors (affecting statistical units that had been omitted, unduly enumerated or double-counted) and content errors (chiefly resulting from wrong or inconsistent replies, or the impossibility to obtain the required information due to poor performance of the interviewer or wrong interpretation of the questionnaire).

Coverage errors

As the RA 09 was a census operation, its purpose was to survey all Portuguese agricultural holdings. In view of the possibility that the RA 09 farm register might not be exhaustive, the necessary steps were taken to identify holdings not included therein – new agricultural holdings – thereby ensuring an exhaustive coverage of data collection. For this purpose, during an interview with a holder in their list of agricultural holdings, or through other contacts, interviewers would ask about the existence of other holders with geographically close holdings. Subsequently, they would check whether such holders were included in their list, and, if not, they would collect information enabling them to enter into contact with the holders in question. They would then report that information to the local technical staff.

Whenever the holder/person responsible for the information supplied mentioned that the agricultural holding under survey had been rented/leased to a harvester (seasonal lease), interviewers had to identify the harvester in question, seeking to obtain information leading to their identification. A more exhaustive coverage of data collection was hence ensured.

Content errors

As regards content errors, the methodology used to avoid/minimise incorrect and/or incomplete data included:

- Interview techniques (interpretation of the questions) – questions would be posed to the interviewee in a way to avoid personal interpretations;
- Outline of the agricultural holding – on the occasion of the interview, the interviewer would always prepare an outline of the agricultural holding characterising it correctly, to be used as an auxiliary tool in subsequent analyses. The outline would be duly identified and attached to the questionnaire;

- Entry of “Observations” – the “Observations” field of the questionnaire should include all information deemed relevant by the interviewer, which would help to validate and analyse collected data after the interview. This prevented questionnaires from being returned and/or avoided subsequent contacts with the interviewee to confirm/justify the information.

3.1.3 Treatment of incorrect or missing data

Questionnaire returned by the chain of collection

In addition to the interviewer, the questionnaire was analysed by different profiles in the RA 09 chain of collection (see 3.1.4 – Data control), implying its return in case of error and/or information misaligned with local circumstances. This led to a more thorough analysis/validation. Returning the questionnaire to the interviewer and identifying the reasons avoided the perpetuation of possible errors and erroneous interpretations of the concepts.

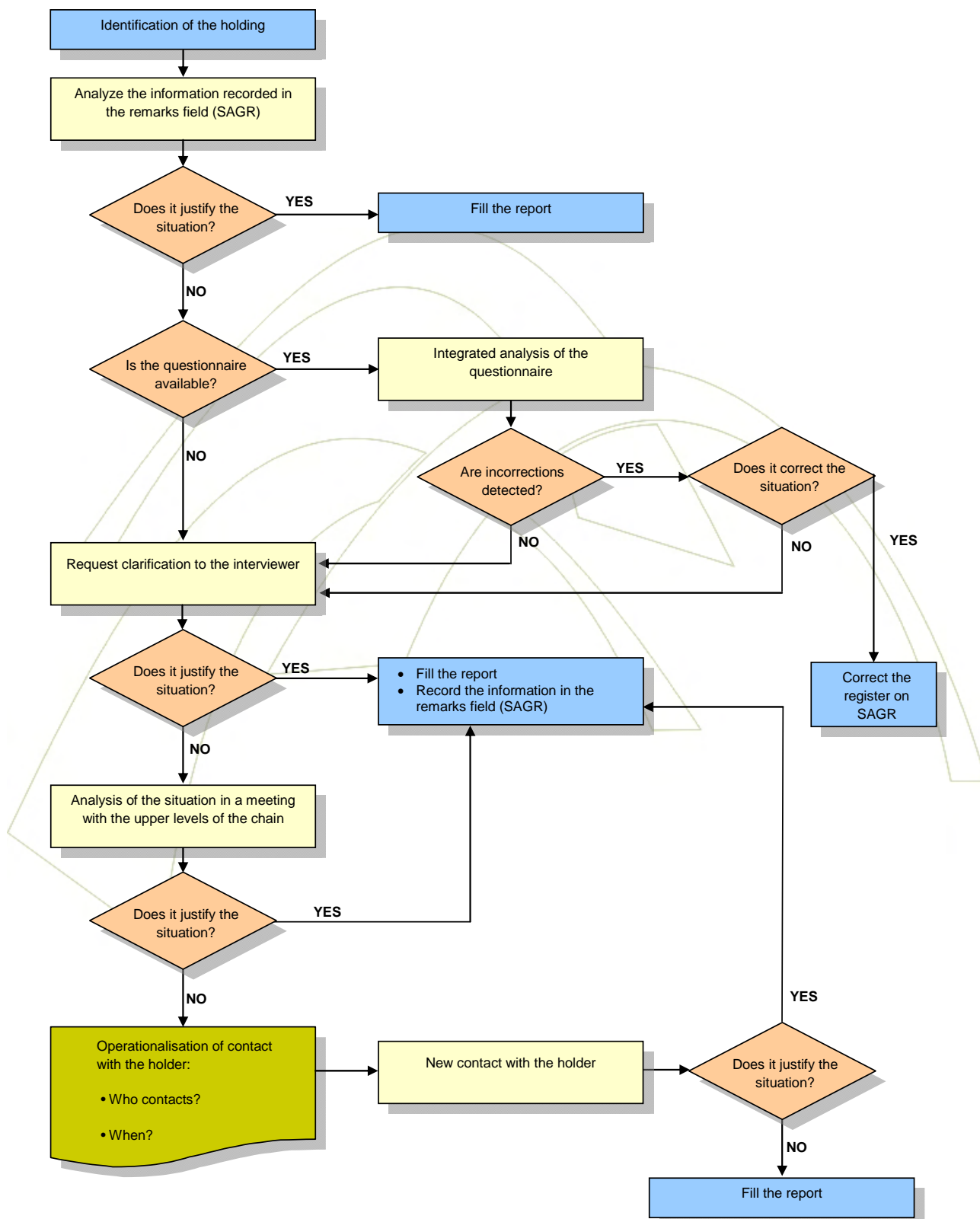
Regular meetings involving the collection structure

Meetings carried out at the different levels of the RA 09 chain of collection facilitated information flows among them. Discussing the main issues/problems arising from the work developed made it easier to standardise the criteria to solve similar situations.

Procedures to confirm/correct microdata

The illustration below outlines the procedures to be followed when incorrections are detected or when questions raise doubts. The solution may involve confirming the situation after analysis of the “Observations” field, in a simpler case, or a new contact with the holder, in the most complex case.

Illustration 7 – Procedures to confirm/correct microdata, conducted by data collection chain



3.1.4 Data quality control

Data validation in SAGR – Interviewer/staff member using a laptop to record data electronically

As mentioned above, the interviewer's functions include data analysis, especially as regards consistency and alignment with local circumstances. Moreover, interviewers/staff using laptops also record, validate and review data in computer-readable format. In order to assist them in this function, 2,146 validation rules were created for recorded data, by resorting to the validation rules editor of SAGR. This editor makes it possible to centrally create strings of rules, which are transferred to the laptops of interviewers/staff using laptops, whenever the latest central version of the rules does not coincide with the version installed on the laptop. This led to good dynamics in data recording control mechanisms. A number of fine-tuning interventions and updates were made to the original rules in the course of the operation.

Validation rules triggered errors, which can be broken down into three large groups:

- Intrinsic errors (8) – those usually associated with the introduction of characters that are not accepted in specific recording fields, especially those related to the identification of the holder (e.g. characters not accepted in names, addresses, etc.). Any one of these errors prevents the questionnaire from being recorded;
- Fatal errors (1,375) – this type of error enables the questionnaire to be recorded; however, its validation will undoubtedly result in the questionnaire being labelled as incorrect, which prevents its conclusion. These errors can be mandatory errors (non-compliance with the compulsory filling-in of a certain field; e.g. legal personality not filled in), consistency errors (if a certain field is/is not recorded, another field must be/does not have to be filled in; e.g. existence of irrigated area, where the field irrigated land had not been filled in), arithmetic errors (wrong totals; e.g. wrong total cereal), range errors (data must be included within a certain range, or cannot attain a certain value; e.g. rice fields in Entre Douro e Minho), or sequential errors (non-sequential filling-in of certain fields; e.g. non-sequential filling-in of members of the holder's household). Correction of these errors is mandatory;
- Warning errors (693) – this type of error enables the questionnaire to be recorded and concluded. These errors may also be of the following types: range errors (e.g. rice field in the Algarve or rice exceeding 50 acres in Beira Litoral), consistency errors (e.g. the holding has an irrigation system and does not record irrigated land), non-filling-in errors (e.g. the telephone was not filled in), and variable ratio errors (e.g. irrigated land of temporary crops exceeding 4 times or $\frac{1}{4}$ smaller than the average irrigated land over the last 3 years). These errors basically play a warning role, and the interviewer/staff member using a laptop will analyse the data triggering errors and confirm or correct them.

Validation may be broadly based, covering the whole national territory (393), or be restricted to the Mainland (517), Madeira (518), the Azores (164) or specific agricultural regions (554).

Errors in SAGR were automatically triggered during the data recording procedure, enabling the staff member using a laptop to immediately correct/analyse data.

Illustration 8 – Example of the list of errors triggered during the data recording procedure (only available in Portuguese)

ERROS DE ERRO

- 0002 - F. A data é inválida
- 0003 - A. Não tem assentamento
- 0005 - A. NIF/FARMACIA sem preenchimento
- 0014 - A. Designação da via/rua sem preenchimento
- 0017 - A. Número de porta/letra/condomínio, sem preenchimento
- 0019 - A. Área do piso sem preenchimento
- 0020 - A. Lado, para, tipo, sem preenchimento
- 0021 - A. Lugar ou localidade sem preenchimento
- 0022 - F. Designação da via/rua do lugar/localidade sem preenchimento
- 0023 - F. Código postal sem preenchimento
- 0027 - A. Código postal/insulense com o município de morada
- 0028 - F. Morada nacional, sem país estrangeiro
- 0029 - A. País preenchimento do telefone
- 0040 - F. Morada da exploração sem preenchimento
- 0042 - F. Número de contacto sem preenchimento
- 0067 - F. Continuação sem indicação da continuação da exploração sem preenchimento
- 0069 - F. Endereços agrícolas de telefonia móvel, de telemóvel e de telemóvel, sem preenchimento
- 0072 - F. Preenchimento do tipo de edifício sem número
- 0073 - F. Indicação do tipo de terreno sem preenchimento de sua designação

After the correction of fatal errors and the analysis of warning errors (reflected in confirmations and/or corrections of recorded data), interviewers, where they considered their work to have been concluded regarding the questionnaire/holding in question, would label it as “Concluded” in SAGR (afterwards, they would inform local technical staff members that the recorded information was ready to be analysed).

Local technical staff member

This staff member analysed the data recorded by interviewers and staff using laptops (to detect possible inconsistencies in data collected and recorded, or the incorrect implementation of concepts or misalignment with local/regional circumstances). An analysis was made of the information in the questionnaires labelled as “Concluded”, and, for the purpose, the local technical staff member could/should resort to the Error Report, the Validate function, the Selection module and/or the Comparison with other Sources module.

Illustration 9 – Example of the error report (only available in Portuguese)

Rubrica	Índice	Erro	Mensagem de erro
1	---	0002	F - A data é inválida
1	---	0004	A - NIF sem preenchimento
1	---	0006	A - NIFAP/NINGA sem preenchimento
1	---	0008	F - Nome sem preenchimento
1	---	0035	A - Sem preenchimento do telefone
1	---	0048	F - Horário de contacto sem preenchimento
1	---	0057	A - Alteração do(s) indicativo(s) do telefone do responsável pela informação
1	---	0067	F - Exploração sem indicação da condição da exploração e sem ser inexistente
1	---	0068	F - Exploração agrícola da lista/amostra ou nova/filha e sem indicação da condição da exploração
201	1	2222	F - daed

Whenever the questionnaire was considered to not fulfil the conditions to be labelled as concluded, the local technical staff member would return it to the interviewer (Return to the field). After a critical appraisal and analysis of the information, this staff member would certify the questionnaire (thereby signalling that their work had been concluded and the questionnaire was ready to be analysed by the section manager).

Section managers

Section managers analysed the information to detect possible inconsistencies in data collected and recorded, as well as incorrectly implemented concepts or misalignments with local/regional circumstances. An analysis was made of the information contained in the questionnaires certified by the local technical staff member (those that they deemed ready to be analysed by the section manager). For the purpose, the section manager could/should resort to the Error Report, the Validate function, the Selection module and/or the Comparison with other Sources module. The section manager could introduce corrections/changes, return it to the local technical staff member (Return to lower level) or, in case the latter were absent, to the interviewer (Return to the field). After a critical appraisal and analysis of the information, the section manager would certify the questionnaire (thereby signalling the regional coordinating body that their work had been concluded and the questionnaire was ready to be analysed).

Regional coordinating body

After analysis, the regional coordinating body could return the questionnaire to the section manager, who could resort to the local technical staff member, only if necessary for contacting the person responsible for the information supplied.

National coordinating body

In the course of the operation, the national coordinating body, similarly to the other elements in the data collection chain structure of the RA 09, prepared regular analyses of data collected and, in order to complement and support regional analyses, submitted the output to be validated at the different levels in the chain of collection. As a result, the analyses implied the justification or correction of data collected. For different geographic levels, it usually covered information regarding:

- Comparison with other sources;
- Frequency of errors;
- Maximum permissible errors;
- Selections;
- Totalisers.

The attached files show examples of analyses sent by the national coordinating body to the regional coordinating bodies.



Example Analysis of
Maximum (only PT)



Example Totals
Analysis (only PT)



Example Comparison
Sources (only PT)



Example Frequency
of Errors (only PT)

3.2 OUTPUT EVALUATION

Collected data should be subject to a critical appraisal according to the guidelines defined in the control manual (document provided to the chain of collection and containing, for each question, the procedures to be adopted for a preliminary control of data collection, especially identifying compulsory questions, relationships among variables, etc.). In turn, the consistency of collected data should be analysed in line with the provisions of the [Instruction Manual](#) and its alignment with local circumstances. Questionnaires should be recorded, validated and analysed in computer-readable format (in SAGR), according to the Control Guide and the Procedures Handbook.



Control Guide (only
PT)



Procedures
handbook (only PT)

In addition to validating the information registered through warning and fatal errors, aggregate data and microdata in the RA 09 were also analysed. Information was analysed through the SAGR software application, by using features specifically developed for the purpose, in particular: totalisers, selections of holdings and comparison with external sources (microdata and aggregate data).

Totalisers

The analysis of totalisers, i.e. aggregate information per geographic level, is essential to evaluate the consistency of collected data vis-à-vis local circumstances. Totalisers of the different geographic levels were analysed according to profiles in the chain of collection, thereby ensuring that an analysis would be carried out for all geographic levels.

Table 19 – Geographical level of analysis by profile of the data collection chain

Geographical level	Profile of the data collection chain
National	CN
Agricultural region	CN, CR
District	GN
Municipality	GN, TL
Commune	GN, TL

Selections

This means the search for holdings according to selected conditions, with a view to detecting incorrections in data collection. The critical appraisal of aggregate data made it possible to obtain elements for the analysis of microdata, particularly in the identification of overvalued variables and high variable values – maximum permissible errors. Selections were frequently based on the existence of a given warning error (so as to identify potential systematic errors made by interviewers) and were especially adjusted to local agricultural specificities, i.e. a dynamic process. Depending on the situation to be observed, selections should quite often be implemented at the commune level. As a result, local technical staff members would present a number of selections applicable in their field of action to section managers, who, in turn, should adopt an identical procedure with regard to the regional coordinating body. These groups of selections would then be analysed by the regional coordinating body, which would evaluate whether or not its scope should be widened to the national level, informing the national coordination accordingly.








Comparison with external sources

The comparison of recorded data with other sources was instrumental for validating the information. In effect, in an exhaustive statistical operation, large negative deviations (possibly related to coverage or content errors) from the figures obtained from other sources are not justifiable, neither is the fact that a certain variable is much higher (possible evidence of incorrections in data collection or the existence of administrative data assumptions hindering comparability with a high confidence level).

SAGR incorporates a module for comparison with external sources. In the course of the operation, it allowed for the comparison of recorded data with other sources at aggregate data level (RA 09 and external source totalisers), of aggregate data based on microdata (RA 09 common holdings and external source totalisers) and of microdata (RA 09 common holdings and external source).

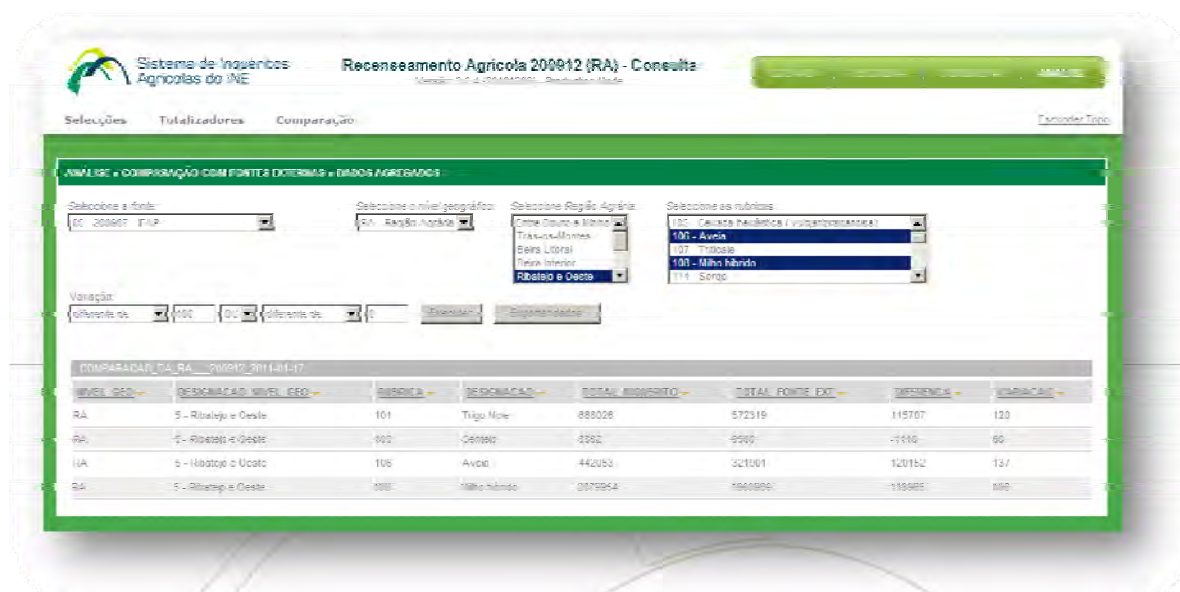
Table 12 shows the information sources uploaded to SAGR, as well as the respective comparison level and items.

Table 20 – Data sources on SAGR

Data Source	Source	Comparison level	Variables for comparison
Statistics Portugal (INE)	Agricultural Census 1999	Aggregated data	Permanent crops areas, UAA and total area  Variables for comparison RGA99
Financing Institute for Agriculture and Fisheries (IFAP) – IACS	Area declared by the holders that received payments under the common agricultural policy from IFAP in 2009	Aggregated data; Microdata	Temporary e permanent crops areas, permanent grassland and UAA  Variables for comparison IFAP
	Cattle registered in SNIRB in November 2009	Aggregated data; Microdata	Cattle  Variables for comparison SNIRB
Institute of Vineyard and Wine (IVV)	Vineyard area of the register	Microdata	Total area of vineyard  Variables for comparison IW
Directorate General for Agriculture and Rural Development (DGADR)	Area and equipments declared by the beneficiaries of 2009 diesel subsidy	Aggregated data; Microdata	Temporary crops areas, total area and tractors  Variables for comparison DGADR
Madeira Wine, Embroidery and Handicraft Institute (IVBAM)	Vineyard area of the register of Madeira Autonomous Region	Aggregated data; Microdata	PDO areas  Variables for comparison IVBAM
Portuguese Geographic Institute (IGP)	Area of the commune	Aggregated data	Total area  Variables for comparison IGP

The module for comparison with external sources made it possible to select the source, the geographic level of comparison, the variables to be compared, and the change ranges required.

Illustration 10 – Example of comparison of aggregated data from the agricultural region of Ribatejo e Oeste with IFAP: common wheat, rye, oats and hybrid grain maize (only available in Portuguese)



This analysis tool was of the essence during the operation, allowing for constant monitoring of the data collected and, where applicable, intervention at different levels in the chain of collection to correct /justify significant deviations from the external source.

Comparison with external sources – output

Below is a brief description of output from the comparison with external sources. It relates to comparisons of aggregate data and to main variables alone.

Table 21 presents the main output of the comparison with the IFAP source – Areas of land declared.

Table 21 – Main output of the comparison with IFAP – areas of land declared

Variable	RA 09 (ha)	IFAP (ha)	Difference (ha)	Variation
Common wheat	61,254	51,658	9,596	+16%
Durum wheat	10,795	7,258	3,537	+33%
Rye	20,132	15,397	4,735	+24%
Barley	40,417	39,062	1,355	+3%
Oats	61,620	66,811	-5,191	-8%
Triticale	23,702	21,136	2,566	+11%
Grain maize	91,787	84,595	7,193	+8%
Processing tomato	17,959	16,788	1,171	+7%
Total area of permanent grasslands	1,827,899	1,033,218	794,681	+43%
Utilized agricultural area (UAA)	3,668,145	3,184,141	484,004	+13%
Total area	4,709,131	3,601,841	1,107,290	+24%

The comparison of collected data with IFAP data – Areas of land declared allowed for effective monitoring during collection. By comparison, rather satisfactory data were obtained for the main monitored crops. As the RA 09 is a census operation, it is only natural that data collected exceed data taken from the IFAP source (areas of land declared by the beneficiaries receiving aid in 2009). In the case of oat, and considering that most is harvested green, it is also possible that some of this cereal has been incorrectly classified in the source as oat for the production of grain, thus justifying the negative change in the RA 09 vis-à-vis IFAP. The comparison of total permanent grassland may be biased, given that the IFAP item of permanent pasture uploaded to SAGR (1,033 thousand ha) was considerably lower than that obtained in the RA 09. It is possible that some of this land is entered in IFAP under other items, in particular temporary forage areas or pasture (854 thousand ha). As regards the total area, much other land contributing to the total holdings' area is neglected in the information reported to the IFAP.

Table 22 presents the main output of the comparison with the IFAP source – SNIRB.

Table 22 – Main output of the comparison with IFAP – SNIRB

Variable	RA 09	SNIRB	Difference	Variation
Dairy cows	278,416	263,843	14,573	+5%
Other cows	441,613	447,580	-5,967	-1%
Cattle	1,430,285	1,562,108	-131,823	-9%

It should be mentioned that data uploaded to SAGR corresponded to bovine livestock registered in SNIRB in November 2009, wherefore comparison with data collected (which, in the case of bovine livestock, referred to the day of the interviewer's visit, and extended throughout 2010) had to take into account the lag between reference periods.

Table 23 presents the main output of the comparison with the DGADR source – Diesel.

Table 23 – Main results of the comparison with DGADR - Diesel

Variable	RA 09	DGADR	Difference	Variation
Grain maize (ha)	91,787	90,056	1,731	+2%
Total area (ha)	4,709,131	3,488,427	1,220,704	+26%
Tractors (No.)	184,471	159,155	25,316	+14%

As regards the total area, and similarly to the IFAP, much other land contributing to the total holdings' area is neglected in the information reported to the Directorate General for Agriculture and Rural Development. Moreover, this source only contains the land and equipment reported by diesel beneficiaries in 2009. It is possible that many farmers who do not own a tractor or other equipment making them eligible for diesel benefits are not entered in this list.

Finally, and as regards the main output of comparison with the IGP (Portuguese Geographic Institute) source – Commune, 95 communes were identified, with the total holdings' area exceeding the territorial area of the commune. These situations are explained by the existence of large holdings, which usually extend across more than one commune, and, according to location criteria, are surveyed in one commune alone, thereby exceeding the respective area. Comparison with the IGP source – Commune made it possible to identify, analyse and confirm/correct these cases.

Summary of surveyed units

The table below presents a summary of collected data, allowing for a uniform comparison of the surveyed statistical units across all Member States.

Table 24 – Collection summary table

	RA 09
Initial list of units	506,840
Number of holdings with completed questionnaires	305,266
Number of units under the threshold applied ¹	0
Holdings with ceased activities ²	207,300
Unit Non-response	2,613
Refuses – not corrected	115
Refuses – corrected (imputed) ³	NA
Number of records transferred to Eurostat	305,266
Common land units	368

¹ All holdings listed in the initial list of producers that, during the data collection phase, were found that where under the threshold applied, have not been surveyed.

² These holdings include those who have ceased the activity, those that have been incorporated in another, those that, despite maintaining some activity, no longer meet the minimum thresholds and those that were duplicated in the list of producers.

³ To refusals, as to other non-response units, are not imputed any data.

Major developments between the 2007 farm structure survey and the RA 09

Comparison with the 2007 farm structure survey (FSS 07) points to the changes indicated in Table 25.

Table 25 – Major trends from FSS 2007 to RA 09

	FSS 2007	RA 09	Variation
Number of holdings	275,085	305,266	11%
UAA (ha)	3,472,939	3,668,145	6%
Arable land (ha)	1,077,704	1,173,127	9%
Permanent grassland (ha)	1,780,579	1,784,598	0%
Permanent crops (ha)	596,246	690,725	16%
Wooded area (ha)	721,828	842,208	17%
Unutilised Agricultural area (ha)	136,409	127,691	-6%
Fallow land (ha)	325,062	341,534	5%
LSU (LSU)	2,029,947	2,205,950	9%
Cattle (head)	1,324,293	1,430,285	8%
Family labour force (persons)	636,145	657,831	3%
Family labour force (AWU)	276,961	294,415	6%
Non-family labour force (persons)	46,147	50,245	9%
Non-family labour force (AWU)	38,239	41,369	8%

Among these, stress is laid on those with a change exceeding 10% vis-à-vis 2007: number of holdings (+11%), permanent crop area (+16%) and woodland without forest cover (+17%).

Three reasons broadly justify part of the increases observed:

- The agricultural sample base (farm register created from the 1999 General Agricultural Census, updated on the basis of agricultural surveys and other sources) – was the sampling basis for the 2007 farm structure survey. The time gap between the creation of the agricultural sample base and its utilisation for the 2007 survey implied a non-negligible degree of obsolescence, which may have influenced its output;
- Since one of the purposes of the surveys is to obtain information on the structure of agricultural holdings and evaluate their development, the sampling methodology of the 2003 farm structure survey opted for the selection of a holding panel. This panel was to be maintained, where possible, over the 2005 and 2007 surveys, thereby ensuring that they were consistent and unchanged over time. However, as a result of this option, it is possible that different developments between the holdings in the panel and in the population did not translate into the survey output;
- The lack of completeness in some regions of the farm register led to the creation of the agricultural sample base.

In addition, other factors may also be identified as having contributed to the differences observed:

- In permanent crops, the separate identification of the umbrella pine (for the production of kernel) within nuts, contrary to the FSS 07, where this area was entered under other nuts, may explain a large share of the increase. In turn, the FSS 07 panel of holdings did not succeed in effectively obtaining the increase in olive area in recent years. This is strongly related to the concentration of this phenomenon virtually in one single region – the Alentejo. Changes in these two crops account for more than 90% of the change observed in permanent crops.

Table 26 – Trends on the areas of stone pine, other nuts and olive oil from FSS 07 and RA 09

	FSS 07 (ha)	RA 09 (ha)	Variation (%)	Difference (ha)
Stone pine	Not available	41,673	Not available	+41,973
Other nuts	1,034	213	-79%	-821
Olive for oil	284,320	331,751	+17%	+47,431

- Over the last ten years, woodland in agricultural holdings in the Alentejo and Trás-os-Montes rose considerably, most likely due to the incentive previously envisaged in the *Plano de Desenvolvimento Rural* (Ruris) (rural development plan) and currently in the *Programa de Desenvolvimento Rural* (ProDeR) (rural development programme) for afforestation in agricultural land. Again, the FSS 07 panel of holdings did not succeed in effectively obtaining these increases that only occurred in some regions and not uniformly across the national territory.

Table 27 – Trends on the areas of wooded area in the agricultural regions of Trás-os-Montes and Alentejo from FSS 07 and RA 09

Agricultural Region	FSS 07 (ha)	RA 09 (ha)	Variation (%)
Trás-os-Montes	104,346	141,138	+35%
Alentejo	130,002	204,104	+57%

Validation rules – special cases

The following rules are not accomplished by PT:

- (M_6_3\$Manure_prct = 'z' and (C_1\$heads = 0 and C_2\$heads = 0 and C_3_1\$heads = 0 and C_3_2\$heads = 0 and C_4\$heads = 0 and C_5\$heads = 0 and C_6\$heads = 0 and C_99\$y_n = 'n')) or (M_6_3\$Manure_prct <> 'z' and (C_1\$heads > 0 or C_2\$heads > 0 or C_3_1\$heads > 0 or C_3_2\$heads > 0 or C_4\$heads > 0 or C_5\$heads > 0 or C_6\$heads > 0 or C_99\$y_n = 'y')).

There is an inconsistency in this rule. In fact, with this rule it's impossible to have livestock and don't produce manure, which is not true, since:

- livestock could graze (outdoor systems) and as Manual handbook stresses "Manure produced during animal grazing is excluded";
- livestock could just graze in a neighbouring holding or just performing a grazing route;
- livestock could be parked in the open field without grazing, only feed with diets;

On the other hand, it is also possible to export manure without the existence of livestock in the reference period (e.g. in case of sanitary emptying). It's also possible to export manure without any occurrence at animal housing characteristics since the thresholds for these are higher than those used for livestock.

- $M_{8_1_2} + B_{2} + B_{1_7_2} + B_{1_8_2} > 0$ or $M_{8_4} = 0$.

This is a special case (specific for south countries) and it is related to a few holdings that irrigated only grassland under permanent crops (secondary crops). It was not considered in $M_{8_1_2}$, since there are secondary crops which mean that their inclusion will violate the rule: $M_{8_1_2} \leq A_{3_1} - B_{2} - B_{1_7_2} - B_{1_8_2} - B_{4_7}$.

- $M_{8_1_2} + B_{2} + B_{1_7_2} + B_{1_8_2} = 0$ or $M_{8_4} > 0$.

Theoretically the volume of water could include, beside greenhouses, also the kitchen gardens. However MERCAR - model for calculating the volume of water - doesn't include the kitchen gardens.

3.3 DATA REVISION POLICY

As a rule, data in the Agricultural Census are not subject to revisions. The RA 09 was no exception. Indeed, a revision would usually involve a new interview, which, given the lapse of time between the date when the holder was interviewed for the first time and the new interview, would introduce a real memory error possibility, not warranting the effort involved.

4. ACCESSIBILITY AND COMPLIANCE WITH DEADLINES

4.1 PUBLICATIONS

The dissemination of statistical data collected in the RA 09 is of the essence. An operation of this size can only be justified if subsequently every effort is made to disseminate the output of the survey to the interested public.

In this vein, and within the programme for the output dissemination from the RA 09, Statistics Portugal published in its [official statistics website](#) on 15 December 2010 a press release with the first results, obtained from the computation of preliminary data at national level. The analysis of results in this press release was almost exclusively carried out by comparison with those of the previous 1999 Agricultural Census.



Press release

The release of the final results to the commune geographic level on 31 May 2011, with the dissemination of over 600 indicators, will be followed by a review publication in hard copy (which unquestionably continues to be an important source of data dissemination) and in computer-readable format (on the official statistics website).

The on-line database releasing the output can be found on the Statistics Portugal website → Statistical data → [Database](#) (Theme: Agriculture, forestry and fishing; Sub-theme: Agricultural census). Every indicator is linked to the associated metadata, by just following the link close to the name of the indicator. The review publication will also include a chapter on methodology and concepts.

Illustration 11 – Example of the statistical data available in the online database

The screenshot displays the Statistics Portugal website interface. At the top, the logo for the Instituto Nacional de Estatística (Statistics Portugal) is visible, along with a search bar and navigation links. The main content area shows a breadcrumb trail: 'home :: Statistical data :: Database'. Below this, there are filters for 'Agriculture, forestry and fishing', 'Agricultural census', and 'Portugal'. A table of indicators is displayed, with columns for 'Indicators', 'Geographic localization (NUTS - 2001)', and 'Decennial'. The table lists several indicators related to cattle and livestock units, with links to consult associated metadata. A footer note indicates the geographic detail level for which data exists.

Indicators	Geographic localization (NUTS - 2001)	Decennial
Cattle per holding (No.) by Geographic localization (NUTS - 2001); Decennial	Município	
Consult associated metadata	Geographic localization (NUTS - 2001); Irregular	NUTS II
Cattle per holding (No.) by Geographic localization (NUTS - 2001); Decennial	Município	
Cattle per holding (No.) by Geographic localization (NUTS - 2001); Irregular	NUTS II	
Livestock units (poultry - No.) by Geographic localization (NUTS - 2001) and Classes of livestock units; Decennial	Município	
Livestock units (poultry - No.) by Geographic localization (NUTS - 2001) and Classes of livestock units; Irregular	NUTS II	
Livestock units (poultry - No.) by Geographic localization (NUTS - 2002) and Classes of livestock units; Decennial	Município	
Livestock units (poultry - No.) by Geographic localization (NUTS - 2002) and Classes of livestock units; Irregular	NUTS II	

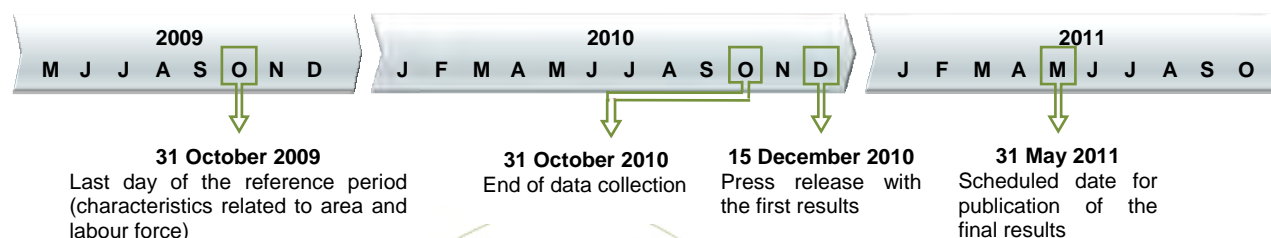
4.2 TIMELINESS AND PUNCTUALITY

Two main quality criteria that statistics must follow, which allow their quality to be gauged, are the timeliness and punctuality of the output. As regards timeliness, output should be released with the shortest time lag possible as regards the actual event. Punctuality, in turn, evaluates the time lag between the date of publication of the data and the date on which they should have been made available.

Timeliness

Publication of the output:

Illustration 12 – Schedule of the publication of the results



- Time lag – first results: 13.5 months. This time lag refers to land and labour-related variables. As regards the other variables (relating to livestock and farming practices), which have as the reference period the day of the interviewer's visit, the last 12 months or the last 3 years, and considering that even in the latter cases the time lag is measured vis-à-vis the date of the interview, the time lag between the last day of the reference period and the publication of the first results was 1.5 months;
- Time lag – final results: 19 months. Taking into account the above, the time lag for the variables related to livestock and farm practices is only 7.5 months.

Punctuality

Publication of the output:

Table 28 – Punctuality of the publication of the results

Publication	Scheduled date of publication	Actual date of publication	Time lag
First results	[20 December 2010 - 31 December 2010]	15 December 2010	Anticipation of 5 days
Final results	31 May 2011	Not yet available	Not yet available

5. CONFIDENTIALITY AND SECURITY

The NSS Law (Law No 22/2008 of 13 May) envisages the confidentiality of data collection. The RA 09 promotes the most extensive use possible of information, while ensuring compliance with the NSS Law.

Output dissemination at municipality level

Within the scope of output dissemination, the municipality is privileged as the most detailed geographic level. The analysis made to the variables collected in RA 09 and their mostly physical nature prevents the respective agricultural holders from being in any way identified. Moreover, there are variables such as crop area (in the case of temporary crops, as the name indicates, they vary every year depending on market and weather conditions during the crop year, and, in the case of permanent crops, they vary depending on the options taken by farmers at a given moment, with new planting or grubbing-up, etc.), which, due to its variability, do not allow for the identification of any holder, in particular because these data are only broken down at municipality level. Information on livestock is under the same conditions: due to seasonality throughout the crop year, arising either from the productive cycle or from demand peaks on feast days (Christmas, Easter, etc.), it reveals significant changes in total livestock over the year. Also, agricultural labour is not subject to secrecy, given that it is collected and made available in groups, according to the legislation in force (Article 6 (4) (b) of the NSS Law).

Therefore, at municipality level, and also given the vast geographical area covered, no situations are envisaged in which the information released leads to direct or indirect identification of a certain agricultural holder, wherefore there will be no statistical confidentiality treatment.

Output dissemination at commune level

Some indicators are forecast to be disseminated at commune level (aggregate item totalisers), which, due to the level of aggregation of the selected variables, do not enable agricultural holders to be identified.

In order to reply to requests for information broken down at commune level, some variables were identified which, due to their nature, are deemed to be more sensitive and therefore should receive a differentiated treatment:

- Information on the destination of waste, vegetable by-products and debris (question 17 of the questionnaire);
- Information on manure and slurry (question 22 of the questionnaire);
- Information on the production of renewable energy for non-domestic purposes (question 28.1.1 of the questionnaire);
- Information on direct sales to final consumers and household consumption (question 29 of the questionnaire);
- Accounting (question 31 of the questionnaire);
- Aids and subsidies (question 32 of the questionnaire);
- Income (question 33 of the questionnaire).

Considering that the release of information on these variables per number of holdings may lead to an indirect identification of the data holder (and, in some cases, that identification might even imply penalties for the respective holder), indicators to be released in the official statistics website and replies to possible information requests at commune level and for these variables will be based on structures (proportion of holdings) or groups. The (primary and secondary) statistical confidentiality treatment will only be used for the above-mentioned variables. The remaining variables will receive no particular treatment.

Dissemination of economic data, by type

Any issues related to the typology of holdings and economic data associated with physical data that are measurable in euro may be released, provided that they are based on aggregates. This information is currently already released as such, wherefore this situation is also covered by the legislation in force.

Dissemination of microdata to researchers

The academic community has special requirements as regards statistical data, especially in terms of the development of research and preparation of Masters and PhD theses.

Against this background, Statistics Portugal established a Protocol with the Ministry of Science, Technology and Higher Education, with a view to facilitating access by researchers to the statistical data required for their activity.



ProtocoloINE_MCTES

For this purpose, the interested researchers must be approved by the Office of Planning, Strategy, Assessment and International Relations, where they may obtain all the necessary information.