



Food and Agriculture  
Organization of the  
United Nations

FAO STATISTICAL  
DEVELOPMENT SERIES 17

ISSN 1014-3378



# MAIN RESULTS AND METADATA BY COUNTRY (2006–2015)

World Programme  
for the Census  
of Agriculture 2010

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Required citation:

FAO. 2019. *Main results and metadata by country (2006–2015). World Programme for the Census of Agriculture 2010*. FAO Statistical Development Series No. 17. Rome.

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ISSN 1014-3378 [Print]  
ISSN 2664-746X [Online]

ISBN 978-92-5-131950-5  
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## ACKNOWLEDGEMENTS

This publication was prepared by Ankouvi Nayo, Davidson Nkoro and Crina Turtoi, led by Oleg Cara of the Agricultural Censuses Team of the Statistics Division of the FAO. They were supported by Adriana Neciu and Eloi Ouedraogo, under the overall leadership of Jairo Castaño.

The Statistics Division of the FAO wishes to acknowledge the contributions of Miguel Galmes and Michael Trant for earlier inputs. Special thanks go to FAO regional and subregional statisticians for their specific contributions, as well as to other international senior experts who peer-reviewed the draft and provided valuable contributions for improving the document. The publication also benefitted from the advice of senior experts from FAO Member Countries who participated in the census roundtables during 2016–2019. Last but not least, our deep gratitude goes to the Member Countries who shared agricultural census reports and other materials required for the preparation of this publication, and who provided valuable feedback.

The document was edited by Sarah Pasetto. Aymen Khalifa carried out the layout design of the publication, while Griffiths Oblilaryea provided clerical assistance.





## ACRONYMS

<b>AC</b>	Agricultural Census
<b>AGRI</b>	Agricultural Integrated Survey
<b>AfDB</b>	African Development Bank
<b>CA</b>	Census of Agriculture
<b>CAPI</b>	Computer-assisted Personal Interviewing
<b>CASI</b>	Computer-assisted Self-interviewing
<b>CAWI</b>	Computer-assisted Web Interviewing
<b>CATI</b>	Computer-assisted Telephone Interviewing
<b>CD-ROM</b>	Compact Disc Read Only Memory
<b>CSPro</b>	Census and Survey Processing System (software package)
<b>DO-MB</b>	Drop-off/mail-back
<b>DO-PKE</b>	Drop-off/pick-up by enumerators
<b>EA</b>	Enumeration Area
<b>ECLAC</b>	Economic Commission for Latin America and the Caribbean
<b>EU</b>	European Union
<b>EQ</b>	Electronic Questionnaire
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FSS</b>	Farm Structure Survey
<b>GIS</b>	Geographic Information System
<b>GNSS</b>	Global Navigation Satellite Systems
<b>GPS</b>	Global Positioning System
<b>IACS</b>	Integrated Administration and Control System
<b>ICR</b>	Intelligent Character Recognition
<b>ICT</b>	Information and Communication Technology
<b>IHSN</b>	International Household Survey Network
<b>MOA</b>	Ministry of Agriculture
<b>NGO</b>	Nongovernmental Organization
<b>NSDS</b>	National Strategy for the Development of Statistics
<b>NSO</b>	National Statistics Office
<b>OAIS</b>	Open Archival Information System
<b>OCR</b>	Optical Character Reader
<b>OMR</b>	Optical Mark Recognition
<b>PAPI</b>	Paper and Pen Interviewing
<b>PATI</b>	Paper-based (or assisted) Telephone Interviewing
<b>PDA</b>	Personal Digital Assistant
<b>PES</b>	Post-enumeration Survey

<b>PC</b>	Population Census
<b>PHC</b>	Population and Housing Census
<b>PPS</b>	Probability Proportional to Size
<b>PSU</b>	Primary Sampling Unit
<b>PUF</b>	Public Use File
<b>REDATAM</b>	Retrieval of Data for small Areas by Microcomputer
<b>SAS</b>	Statistical Analysis System (software package)
<b>SDG</b>	Sustainable Development Goal
<b>SPSS</b>	Statistical Package for the Social Sciences (software package)
<b>SRS</b>	Simple Random Sampling
<b>SSU</b>	Secondary Sampling Unit
<b>STATA</b>	General-purpose statistical software package
<b>SYS</b>	Systematic Sampling
<b>UAA</b>	Utilized Agricultural Area (also “Utilised Agricultural Area” in several countries in Europe, etc.)
<b>UN</b>	United Nations
<b>UNDP</b>	United Nations Development Programme
<b>USB</b>	Universal Serial Bus
<b>USD</b>	United States Dollar
<b>WCA</b>	World Programme for the Census of Agriculture
<b>WB</b>	World Bank

## EXPLANATORY NOTE

The cut-off date for the information in this publication is 16 August 2019.

In the tables illustrating the main census results, the total may not add up to the sum of components due to rounding.

The following symbols and abbreviations are used throughout the tables:

- ha – hectare (also used in countries' methodological reviews);
- n.a. – data not available;
- (1 000) – thousand;
- 0 or 0.0 – means zero or a number that is small enough to round to zero;
- hp – horsepower;
- % – percent.

A space is used as a thousands separator. For example, 1 000 indicates the figure of one thousand.



## FOREWORD

FAO has been developing and advocating decennial World Programmes for the Census of Agriculture (WCAs) since 1945. The WCA 2010 was the ninth programme in the series. These programmes, on the one hand, serve to promote the availability of internationally comparable data on the structure of agriculture; on the other, they provide guidance to countries on collecting structural data using standard international concepts and definitions and the latest methodologies.

Member Countries provide reports of their agricultural censuses to the FAO Statistics Division. FAO documents these census reports, which serve as the basis for the preparation of methodological reviews of national agricultural censuses, including main census results on the structure of agriculture. The FAO Statistics Division regularly disseminates these country census reports and the resulting methodological reviews through its website.

At the end of each round, the FAO Statistics Division reviews and assesses national census practices, methodologies and results, and summarizes the findings in methodological publications under the Statistical Development Series (SDS). The SDS 17, i.e. this first publication, presents the results of national censuses conducted during the 2010 round (covering the period 2006–2015). It is a compendium of reviews of country censuses (and their main results) disseminated earlier through the FAO census website. The SDS 18, the second publication that is currently underway, will present a methodological review of the WCA 2010 round (2006–2015).

The FAO Statistics Division is pleased to bring out this unique publication, which describes agricultural censuses from a record number of 127 countries and territories. The concise review of national censuses offers a distinctive panorama of country practices across the world's regions, which can be very useful to national census agencies for census planning and implementation.

FAO has made its best effort to ensure the most complete coverage of national agricultural censuses in this publication, and conveys its sincere gratitude to the national census agencies that shared their census reports, questionnaires, instruction manuals and other census materials. The information on missing countries, as well as additional national census publications when made available to FAO, will be added to the FAO census website. The hope is that this review of the WCA 2010 round will serve as useful reference material for census planners and data users and provide valuable lessons for future censuses, and that this will ultimately lead to improved understanding of countries' agricultural sectors.

**José Rosero Moncayo**

Director

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## EXECUTIVE SUMMARY

The Food and Agriculture Organization of the United Nations (FAO) is the leading United Nations agency providing guidelines for the conduct of agricultural censuses worldwide. The World Programme for the Census of Agriculture (WCA) developed by the FAO provides much needed guidance to countries in collecting data and following standard concepts, definitions and classifications, and promotes the availability of internationally comparable data on the structure of agriculture and best national practices in census-taking.

Under the guidance and support of FAO, country participation in the WCA has been increasing over time – from 81 countries in the 1950 round, to 100 countries in the 1960 round, 111 countries in the 1970 round, 114 countries in the 2000 round and, finally, 127 countries and territories<sup>1</sup> in the 2010 round. Country participation has grown faster in Europe and Asia. In the latest round, 11 countries and territories conducted two censuses within the ten-year period.

At the end of each round, FAO reviews and assesses national census practices, methodologies and results, and summarizes the findings in methodological publications, under the Statistical Development Series (SDS). The first publication, i.e. this publication (SDS 17), is a compendium of reviews of country agricultural censuses conducted during the WCA 2010 round (which covers the period 2006–2015) and their main results. The second publication (SDS 18) will present a methodological review of the WCA 2010.

The SDS 17 is an updated version of the SDS 12 – a similar publication on countries' metadata and main census results related to the WCA 2000 round. The real value of this publication lies in the availability of detailed metadata on agricultural censuses conducted by different countries. Apart from providing information on historical background, legal, institutional frameworks and international collaboration, the publication also provides an overview of the census staff, reference and enumeration periods, scope and coverage, methodological modalities, frame, data collection methods, questionnaires used, new technology used, data processing and archiving, and census data quality and dissemination. Data sources and contact information is provided for each country. These concise two-page overviews of national censuses present a unique panorama of country practices on agricultural censuses to which national census agencies can refer when planning their censuses. More detailed metadata reviews with additional supporting documents are available on the FAO website.<sup>2</sup>

The metadata reviews are complemented by tables with main results (one page long) on key structural characteristics, such as number of holdings, total area of holdings, area irrigated, machinery, gender and sex of holders, number of household members, farm labour, livestock and crop areas. The metadata and main results are based on the census information made available by countries at the time this publication was published.

Countries and territories are presented by geographical region, based on the standard country or area codes for statistical use (M49).<sup>3</sup> France and its overseas territories are presented together under Europe.

For users' ease of reference, the publication includes a glossary of terms, as well as the full list of publications on the WCA since its inception (in the appendix).

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<sup>1</sup> The publication includes census information for France and its territories (French Guyana, Guadeloupe, Réunion and Martinique) and the United States of America, the U.S Territories and Outlying Areas (American Samoa, Guam, the Northern Mariana Islands, Puerto Rico and the U. S. Virgin Islands). For statistical purposes, these Territories/ Outlying Areas are recorded as separate entities in the World Census of Agriculture Database. See also the Metadata review for France, for the United States of America and for the U.S Territories and Outlying Areas.

<sup>2</sup> See [www.fao.org/world-census-agriculture/wcarounds/wca2010/countries2010/en/](http://www.fao.org/world-census-agriculture/wcarounds/wca2010/countries2010/en/)

<sup>3</sup> United Nations. 2019. Methodology: Standard country or area codes for statistical use (M49). In: United Nations [online]. New York. [Cited 4 October 2019]. <https://unstats.un.org/unsd/methodology/m49/>





## INTRODUCTION

The development and promotion of the decennial World Programme for the Census of Agriculture (WCA) is one of the most important elements of FAO's statistical work. Since the founding of FAO in 1945, it has supported countries in carrying out their national agricultural censuses using standard international concepts, definitions and methodologies. The WCA 2010 was the ninth decennial programme that guided the implementation of agricultural censuses in FAO Member Countries between 2006 and 2015.

The use of the WCA guidelines by Member Countries ensures that the census results are harmonized and internationally comparable, and allows countries to benchmark their performance against others. In many developing countries, an agricultural census is a unique source of information on the structure of the agricultural sector. An agricultural census is the backbone of the agriculture statistics system of a country in that it provides: (i) sampling frames for the current surveys and ad hoc specialized surveys; and (ii) benchmark data to reconcile current statistics.

Of the 127 countries and territories that conducted an agricultural census during the WCA 2010 (2006–2015), 122 countries provided census reports to FAO. Country census reports serve as the basis for the preparation of internationally comparable data and for studies on methodological issues related to taking an agricultural census. The FAO Statistics Division concurrently disseminates these national reports through its website, together with metadata reviews prepared based on the census reports, questionnaires and other materials.<sup>1</sup>

The publication includes both national agricultural censuses conducted as distinct operations and those carried out jointly with other census data collections (such as economic, forestry, aquaculture and/or fisheries censuses, etc.).<sup>2</sup> By convention, the farm structure survey (FSS), conducted on a sample basis, such as Croatia's FSS 2010, was also included in the present publication. Conversely, other types of surveys (such as annual national agricultural production sample surveys) were not included.

The titles of the censuses conducted by countries are presented in the publication using generic titles. A glossary and suggested readings are also included in the publication, to facilitate comprehension of the concepts used and to provide users with easy access to relevant documents.

The historical outline for each country includes all agricultural censuses conducted (and reported) by countries up to the WCA 2010 round, included. If a country conducted two or more agricultural censuses during the 2010 round (as did Canada, India, Japan, the Republic of Korea, the United States of America and its territories, and Viet Nam), the review refers to the last census conducted for which census reports were available at the time this publication was produced.

The census of agriculture can be carried out using different approaches and in various ways, depending on available resources, country traditions and national conditions. The publication illustrates different country experiences in census-taking, providing some details on census methodologies and census organization. Most countries adopted a classical census approach, where enumeration is commonly conducted in a one-off operation, providing a snapshot of the entire population at a specified period. Some countries, such as Bangladesh, Republic of Moldova, Thailand and Viet Nam used the short-long questionnaire concept. Countries such as Burkina Faso, Cambodia, the Lao People's Democratic Republic, Mozambique, Myanmar, the Niger, Togo and Uganda used the modular census approach, introduced in the WCA 2010.

Many countries use existing administrative and statistical data sources to build the census frame (such as Australia, Austria, New Zealand and South Africa), while others conducted special listing operations to identify the target census population (for example Armenia, Republic of Moldova and Togo).

In a number of countries with longstanding cooperation between the national statistical agency and holders of administrative data sources, administrative registers were used as a source of census data, replacing census data collection of a number of items for at least a subset of the target census population. This is the case of European countries in particular, such as Denmark, Estonia, France, Hungary, Latvia, Lithuania, the Netherlands, Sweden, Switzerland and Norway.

An increasing number of countries has linked the population census (PC) to the agricultural census. The relationship between the AC and the PC can take several forms, from coordinating aspects of the two censuses to including key agricultural items in the PC, and even joint data collections. In some countries, the PC contained screening questions (or even a section with agriculture-related questions) to identify the agricultural holdings. An agriculture module (AM) was piggybacked onto the PC in African countries such as Burkina Faso, Mozambique, Seychelles and Uganda, to provide a more complete frame for the agricultural census or follow-up supplementary modules. In other African countries, such as Botswana, the Gambia, Lesotho, Malawi, and Namibia, where the agricultural census was undertaken using sample enumeration, enumeration areas from the population census were used as Primary Sampling Units (PSUs).

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<sup>1</sup> See [www.fao.org/world-census-agriculture/wcarounds/wca2010/countries2010/en/](http://www.fao.org/world-census-agriculture/wcarounds/wca2010/countries2010/en/)

<sup>2</sup> Subsequently, called simply "agricultural censuses" or "ACs".

The strongest link between the two censuses was observed when both censuses were undertaken together as a joint operation, such as in Canada, Equatorial Guinea and Georgia. Some countries, such as Brazil, Chile, Colombia, Cook Islands, Japan, the Republic of Korea, Mexico, the Philippines and Viet Nam combined forestry, aquaculture or/and fishery census with agricultural census. Sri Lanka collected agricultural census items in the framework of its Economic Census 2013/2014.

The use of technology has been expanding over previous rounds of censuses, facilitating census preparation, data collection, processing and dissemination. For instance, in the pre-census stage, Paraguay used GPS for cartographic works to delimit the enumeration areas. In countries such as Botswana, the Gambia, Mozambique, Namibia, Togo and Uganda, GPS was used for area measurement. Other countries, such as Brazil and Côte d'Ivoire used Personal Digital Assistants (PDAs) with GPS to georeference all farms. A number of countries used electronic data collection methods, such as CAPI (e.g. Brazil, Colombia, Cote d'Ivoire, Equatorial Guinea, Cabo Verde, France, Jordan, Iran, Mexico, Mozambique, Namibia, Oman, Saudi Arabia, Thailand and Venezuela (Bolivarian Republic of)) and CASI/CAWI (e.g. Australia, Canada, Italy, Iceland, the Republic of Korea, the United States of America). CATI was used in Latvia, Spain, Sweden and the United Kingdom of Great Britain and Northern Ireland, among other countries. Optical scanning of census questionnaires was applied in countries such as China, Cook Islands, Greece, Malawi, the Philippines, Republic of Moldova, the Russian Federation and the United Republic of Tanzania. Paraguay used optical barcode readers to monitor and control census documents.

Countries adopted different data dissemination methods, taking advantage of new technology to improve user access to census results. Most countries published their census reports on the Internet, thus making them available to a wide range of users. Some countries used online dissemination to enable users to run their own queries. Other countries, such as Chile, Colombia, Estonia, Nepal, Mexico, Nicaragua, Peru, Uruguay, and Viet Nam also provided safe access to anonymized census microdata.

Post-enumeration Surveys (PES) to assess the coverage and/or the content errors of census data were undertaken in several countries, including Armenia, Bangladesh, Canada, China, the Cook Islands, El Salvador, Italy, Nicaragua, Niue, Republic of Moldova, Paraguay, Romania, Suriname and Venezuela (Bolivarian Republic of).

The review shows that census designs, concepts and definitions vary significantly across countries. Very often, countries adjusted WCA concepts and classifications to suit national requirements. The FAO Statistics Division made efforts to standardize the metadata and data to the extent possible, to enable their international comparability. Despite these efforts, international comparisons are frequently difficult, due to differences in scope, coverage, or designs of the agricultural censuses. For some countries, the data reported here, particularly the number and area of holdings, the number of livestock and area of crops harvested may differ from those coming from other sources. These differences may arise because of: (i) varying thresholds on the scale of operation adopted to define the holdings, leading to differences in the coverage of holdings; (ii) the partial (or non-) coverage in many national censuses of open rangeland (such as land open to communal grazing), because it is not considered as part of the holding (which constitutes the main statistical unit for census data collection); (iii) conceptual differences in the definition of holdings/farms, (iv) differences in classifications used; (v) subsequent revision of the figures by the national office responsible for agricultural censuses, etc. In case of any discrepancy between the data presented in this publication and any other source, readers may refer to concepts and definitions provided in the WCA 2010. It is to be noted that the purpose of the SDS 17 is not to address discrepancies in census data between different data sources.

As indicated earlier, the primary source of information for metadata and main results are the census reports and other census materials disseminated by countries and kindly shared with FAO. These important national data sources were supplemented with other relevant information available on national institutions' websites, country presentations delivered at the Regional Roundtables on the WCA and other meetings at regional and international level, census methodological reports available on the Eurostat website, etc. The Eurostat database<sup>3</sup> constituted the main data source of national census results for the EU Member States, as well as for Iceland, Norway, Switzerland and Montenegro, for which data for the 2010 census round are available. The main data sources used are specified in section 13 of each country's metadata review.

Countries and territories are presented by geographical region in the publication. France and its overseas territories are presented together under Europe.

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<sup>3</sup> Eurostat. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**MAIN RESULTS AND  
METADATA BY COUNTRY  
(2006–2015)**



**AFRICA**

## 1. HISTORICAL OUTLINE

The 2015 Botswana Agricultural Census (AC) was the fourth census of agriculture to be conducted in the country. The first livestock census was carried out in 1971, while three agricultural censuses, covering both crops and livestock, were conducted in 1982, 1993 and 2004.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Statistics Act 2009 (CAP 17:01) constitutes the basic legal act regulating the production and dissemination of official statistics. According to this Act, Statistics Botswana is mandated to provide the State with official statistics.

### **Institutional framework and international collaboration**

The AC 2015 was conducted by Statistics Botswana in collaboration with the Department of Agriculture Research, Statistics and Policy Development of the Ministry of Agricultural Development and Food Security. The AC was fully funded from the national budget.

### **Census staff**

A total of 53 supervisors, 159 enumerators and 53 drivers were involved in the AC 2015. Overall, 53 teams were deployed, in nine Administrative Districts. Each team was composed of one field supervisor, three enumerators and one driver.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview for items such as total area and utilized agricultural area (UAA) of the holding, livestock, etc.

**Reference period:** the agricultural year (from October 2014 to February 2015 – planting season; from May to August 2015 – harvesting period), for items relating to economic activity carried out by household members; livestock stock variation, etc.

## 4. ENUMERATION PERIOD

Census data collection was conducted in three phases: (i) from January to June 2015 and (ii) from July to November 2015, for holdings in the household sector, and (iii) from August to December 2015, for holdings in the non-household sector (see subsection titled “Questionnaire(s)” in section 8 for more details).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crops and livestock production).

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for own account agricultural production purposes, without regard to title, legal form, or size. The AC 2015 covered holdings in both the household sector (the “traditional sector”) and the non-household sector (the “commercial sector”).

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country, except for urban areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Under the AC, an agricultural holding must meet at least one of the following criteria: (i) operating a piece of land used for crop production purposes, whether planted or lying fallow; or (ii) raising a cow, goat, sheep, donkey/mule, horse or pig.

Urban areas were excluded from the census.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The AC 2015 was a sample-based census<sup>1</sup> conducted in three phases (see section 4). Four forms were used in the census (for further details, see “Questionnaire(s)” subsection below).

### **Frame**

For the household sector, the sampling frame was built from the 1 328 Enumeration Areas (EAs) demarcated during the 2011 Population and Housing Census (PHC). This excluded the enumeration areas from urban areas.

The frame for the holdings in the non-household sector, was built based on several sources: (i) the Establishment and Enterprise Register (EER); (ii) the list of commercial farms from the annual agricultural surveys; and (iii) the information provided by the extension services of the Department of Animal Health and Production (DAHP).

<sup>1</sup> The methodology for the 2015 AC is the same as the one used for the past ACs. The only difference is that in the AC 2015, urban areas were excluded from the census.

**Complete and/or sample enumeration method(s)**

The holdings in the household sector were enumerated using sampling, whereas those in the non-household sector were covered by complete enumeration.

**Sample design (if sampling was used)**

To select the holdings in the household sector, a stratified two-stage sample design was used. The first stage was the selection of 1 328 EAs as Primary Sampling Units (PSUs). During the second stage, a sample of 20 agricultural holdings (Secondary Sampling Units, or SSUs) was drawn in each selected EA.<sup>2</sup>

**Data collection method(s)**

Face-to-face interviewing was applied to collect information from holdings in the household and the non-household sectors, using the traditional Paper-and-Pen Interviewing (PAPI) method. Objective measurement was applied to measure the areas of fields.

**Questionnaire(s)**

The AC 2015 used four census forms: (i) for holdings in the households sector, one listing form (Form I), and two questionnaires for collecting census items (Forms II and III);<sup>3</sup> (ii) for holdings in the non-household sector, one questionnaire (Form IV).

The AC questionnaires covered 12 of the 16 core items<sup>4</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online. The Global Positioning System (GPS) was used for area measurement.

**10. DATA PROCESSING AND ARCHIVING**

All questionnaires received from the field were first checked and verified as soon as they reached the headquarters. All questionnaires with inconsistencies or omissions were returned to the field for correction. Data processing (entry, editing and validation) of census data was done using the CSPro software. Data entry applications were designed with consistency checks and skip patterns. Batch editing programmes were used for editing and cleaning.

**11. CENSUS DATA QUALITY**

The supervisors and enumerators were thoroughly trained on census questionnaires. Supervisor and enumerator manuals were prepared and made available to each team. Each supervisor and enumerator was provided with supervisor manuals and enumerator manuals respectively. Data coding and editing officers were employed to check questionnaires on arrival. Quality control officers were deployed to different districts to check the teams' work in the field.

**12. DATA DISSEMINATION**

The AC results were disseminated in June 2018 through printed publications, dissemination workshops and the Statistics Botswana website.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 18-22 September 2017, Nairobi, Kenya. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020kenya/en/>

**Statistics Botswana.** 2018a. *Botswana agricultural census report 2015*. Gaborone, Botswana. (also available at <http://www.statsbots.org.bw/sites/default/files/publications/Botswana%20Agriculture%20Census%20Report%20Final%202015..pdf>)

**Statistics Botswana.** 2018b. Statistical Publications. In: *Statistics Botswana* [online]. Gaborone, Botswana. [Cited 1 July 2019]. <http://www.statsbots.org.bw/latest-publications>

**14. CONTACT**

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<sup>2</sup> All agricultural holders with 100 cattle or more in any selected EA were automatically included in the sample for interview. The "take-all" principle was applied whenever the number of agricultural holders was less or equal to 20 at EA level.

<sup>3</sup> Form I deals with the listing of all dwellings within the selected EA (conducted during the first visit). Form II deals with land use and field measurements, while Form III included crop and livestock production items. Forms II and III were completed during the second visit to farmers in the household sector.

<sup>4</sup> The following core items were not covered by the AC: (i) "Legal status of agricultural holder"; (ii) "Land tenure types on the holding"; (iii) "Presence of aquaculture on the holding"; and (iv) "Presence of forest and other wood land on the holding".



# BOTSWANA – AGRICULTURAL CENSUS 2015 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>63 246</b>	<b>259 656</b>
Household (traditional) sector	62 975	204 965
Non-household (commercial) sector	271	54 691

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>63 246</b>	<b>259 656</b>
Holdings without land	22 161	
Holdings with land	41 085	259 656
Cultivated area	30 402	157 813
Land temporarily fallow	n.a.	101 843

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>62 975</b>	<b>204 965</b>
Male	40 687	142 953
Female	22 288	62 012

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		
	Number	
<b>Total</b>	<b>62 975</b>	
Male	40 687	
Female	22 288	
12–24 years	529	
Male	397	
Female	132	
25–34 years	3 631	
Male	2 503	
Female	1 128	
35–49 years	14 552	
Male	9 652	
Female	4 900	
50–59 years	15 327	
Male	9 594	
Female	5 733	
60–64 years	7 527	
Male	4 965	
Female	2 562	
65 years and over	21 409	
Male	13 576	
Female	7 833	

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>191 259</b>
Male	115 854
Female	75 405

EMPLOYEES WORKING ON THE HOLDING	
	Number
<b>Total employees</b>	<b>21 604</b>
Male	20 360
Female	1 244
Traditional sector	17 518
Male	16 781
Female	737
Commercial sector	4 086
Male	3 579
Female	507

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	39 054	1 744 166
Sheep	12 864	242 432
Goats	44 751	1 205 238
Pigs/swine	465	4 398
Horses	7 625	32 337
Asses (donkeys) and mules	28 247	178 400
Poultry (1 000 head)	n.a.	n.a.
Chickens	38 036	760
Ostrich	24	0.4

MACHINERY AND EQUIPMENT USED ON THE HOLDING	
	Holdings
Single plough	9 822
Double plough	9 223
Other	10 924

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	n.a.	n.a.
Sorghum	18 275	41 687
Maize	31 213	65 129
Millet	6 567	5 074
Vegetables and melons	n.a.	n.a.
Tomatoes	88	109
Onions	45	65
Cabbages	97	147
Spinach	52	13
Carrots	18	111
Beetroots	25	66
Watermelons	17 788	2 395
Melons	8 579	809
Oilseed crops	n.a.	n.a.
Groundnuts	7 090	2 116
Sunflower	1 430	1 713
Rapeseed	85	44
Leguminous crops	36 649	32 383
Other crops	3 973	2 699

## 1. HISTORICAL OUTLINE

The Census of Agriculture (CA) 2006–2010 of Burkina Faso was the first CA ever undertaken in the country.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The census framework included: (i) Statistics Law No.12-2007 of 31 May 2007, which relates to the organization and regulation of statistical activities in Burkina Faso; (ii) Presidential Decree No. 2007-588 of 25 September 2007 on the conduct of the CA.

### **Institutional framework and international collaboration**

The Department of Statistics of the Ministry of Agriculture, Water Resources and Fisheries (MAWRF) is the main agency responsible for implementing the CA. The CA was conducted in collaboration with the National Institute of Statistics and Demography (INSD) and other institutions. The CA was funded through the national budget (which funded approximately two thirds of the CA budget) and international partners: the European Union (EU), the World Bank, and the Danish Government. In addition, the EU and FAO provided technical assistance at the preparation stage of the CA.

### **Census staff**

The MAWRF provided the INSD with staff to support data collection for the agriculture module within the Population and Housing Census (PHC). In particular, 500 enumerators, 100 team supervisors and 13 district or regional supervisors were assigned. The same staff was used for the implementation of the supplementary and thematic modules.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items, such as household members involved in agriculture activities, the total area and utilized agricultural area (UAA) of the holding, livestock, etc.

### **Reference periods:**

- 12 months preceding the census date, for food security, stock variation of livestock, etc.;
- three months preceding the census date, for sources of income and expenditures;
- the preceding month, for information related to the activities undertaken by household members; and
- the agricultural year (from January to December 2008), for agricultural production.

## 4. ENUMERATION PERIOD

In the census project, data collection was conducted in several phases:

- Phase I: data collection sought to establish the CA frame and to obtain the basic data on holdings: (i) for households engaged in own-account agricultural production, data were collected through the agriculture module within the PHC in December 2006; (ii) for holdings in the non-household sector (including big farms, capture fisheries and aquaculture holdings), through the listing of these holdings and the data collection on key frame items, from February to May 2007.
- Phase II: data collection related to supplementary/thematic modules; this was carried out from December 2007 to December 2008.
- Phase III: this consisted in setting up the permanent system for agricultural surveys (adjusting the sample for less costly annual surveys) and disseminating the CA results.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production), as well as aquaculture and capture fisheries. Certain items related to the forestry activities of households were also collected.

The **statistical units** were:

- the agricultural holding, defined as “all land that is used wholly or partially for agricultural production under one technical or operational unit by one person alone or with others, regardless of the title, legal form, size or location”; the CA covered holdings in both the household sector (“agricultural households”) and in the non-household sector; and
- the fishing (capture fisheries) and aquaculture holding.

## 6. GEOGRAPHIC COVERAGE

The entire territory of the country was covered in the CA. The supplementary/thematic modules for the household sector did not cover large urban areas, namely the capital city (Ouagadougou) and the second-largest city (Bobo Dioulasso).

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No cut-off threshold or other exclusions were applied in the CA, with the exception of the module on arboriculture, which covered only agricultural households with at least 20 trees.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The CA 2006–2010 used the modular approach. Six supplementary/thematic modules followed the collection of the agriculture module in the PHC 2006 (which served as a frame for holdings in the household sector).

**Frame**

The country linked the PHC with the CA by including an agriculture module in the PHC conducted in December 2006. Based on that agriculture module, a list of agricultural households was established. This information served as a source of sampling frames for the supplementary/thematic modules. For the non-household sector, the list of agricultural holdings, as well as of fishing (capture fisheries) and aquaculture holdings, was built using the administrative registries held by regional offices of the MAWRP and the listing of such holdings (along with data collection for key frame items) conducted between February and May 2007.

**Complete and/or sample enumeration method(s)**

Key census frame items were collected on a complete enumeration basis through the PHC agriculture module and the listing operation of holdings in the non-household sector (see above). The supplementary and thematic modules were applied using sample enumeration.

**Sample design (if sampling was used)**

A stratified two-stage sample design was used for the supplementary and thematic modules.

**Data collection method(s)**

Face-to-face interviewing was applied to collect information from holdings, using the traditional Paper-and-Pen Interviewing (PAPI) method.

**Questionnaire(s)**

To cover the different modules of the three phases of the census project, ten questionnaires were developed. The CA questionnaires covered 14 of the 16 core items<sup>1</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Manual data entry, edits and imputation were all accomplished using the CSPro software. When imputation was required to replace inconsistent or missing data, data from a similar farm was used for imputation (nearest-neighbour method). The SPSS software was used for analysis and tabulation.

**11. CENSUS DATA QUALITY**

During training, clear instructions for data collection were provided to the interviewers and supervisors through training workshops and instruction manuals. The supervisors were in charge of quality control of the completed questionnaires during fieldwork.

**12. DATA DISSEMINATION**

The CA results were published in 24 printed reports (also available on CD): five reports from Phase I and six from Phase II; in addition, 13 detailed thematic reports were developed and disseminated. The census data are available on the CountrySTAT-Burkina website, the National Institute of Statistics and Demography website and upon request.

**13. DATA SOURCES**

**CountrySTAT.** 2019. Food and agriculture data network. In: *CountrySTAT-Burkina Faso* [online]. Rome, Italy. [Cited 6 September 2019]. <http://www.countrystat.org/home.aspx?c=BFA>

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 7-11 November 2016, Dakar, Senegal. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020dakar/en/>

**National Institute of Statistics and Demography.** 2019. Archive nationale des données du Burkina. In: *The National Institute of Statistics and Demography* [online]. Ouagadougou, Burkina Faso. [Cited 8 August 2019]. [http://www.insd.bf/n/index.php/catalog#r=&collection=&country=&dtype=&from=1985&page=2&ps=&sk=&sort\\_by=titl&sort\\_order=&to=2010&topic=&view=s&vk](http://www.insd.bf/n/index.php/catalog#r=&collection=&country=&dtype=&from=1985&page=2&ps=&sk=&sort_by=titl&sort_order=&to=2010&topic=&view=s&vk)

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CountrySTAT-Burkina Faso: <http://www.countrystat.org/home.aspx?c=BFA>

<sup>1</sup> The following core items were not covered by the CA: (i) "Legal status of agricultural holder"; (ii) "Other economic production activities of the holding's enterprise".

# BURKINA FASO – CENSUS OF AGRICULTURE 2006–2010 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Cultivated area (ha)
<b>Total</b>	<b>1 330 015</b>	<b>5 553 026</b>
Household sector	1 329 439	5 522 566
Non-household sector	576	30 460

HOLDINGS IN THE HOUSEHOLD SECTOR, BY LAND TENURE		
	Number of parcels	Cultivated area (ha)
<b>Total</b>	<b>11 446 524</b>	<b>5 522 566</b>
Owned	11 297 719	n.a.
Sharecropping	103 019	n.a.
Rented	45 786	n.a.

HOLDINGS IN THE HOUSEHOLD SECTOR, BY LAND FRAGMENTATION		
	Holdings	Number of parcels
<b>Total</b>	<b>1 329 439</b>	<b>11 446 524</b>
Holdings without land	74 583	
Holdings with land	1 254 856	11 446 524
1 parcel	39 627	47 030
2–3 parcels	115 028	311 177
4–5 parcels	196 484	858 940
6–9 parcels	395 170	2 815 893
10 parcels and over	508 547	7 413 483

DISTRIBUTION OF HOLDINGS IN THE HOUSEHOLD SECTOR, BY LAND SIZE CLASSES		
	Holdings	Cultivated area (ha)
<b>Total</b>	<b>1 329 439</b>	<b>5 522 566</b>
Holdings without land	74 583	
Holdings with land	1 254 856	5 522 566
Less than 1 ha	151 955	97 070
1–1.99 ha	236 822	365 914
2–4.99 ha	514 560	1 746 121
5–9.99 ha	262 004	1 854 264
10–19.99 ha	75 144	1 031 929
20–49.99 ha	13 901	394 806
50–99 ha	471	32 462

HOLDINGS BY HOUSEHOLD SIZE		
	Number	
<b>Total</b>	<b>1 329 439</b>	
1 person	16 206	
2–3 persons	61 200	
4–5 persons	150 427	
6–9 persons	444 608	
10 persons and above	656 998	

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		
	Number	
<b>Total</b>	<b>11 457 180</b>	
Male	5 497 506	
Female	5 959 674	
Engaged in agricultural activities on the holding	8 272 084	
Aged 15 years and above	5 593 942	
Aged 10 to 15 years	1 442 777	
Aged under 10 years	1 235 365	

EMPLOYEES WORKING ON THE HOLDING		
	Number	
<b>Total employees</b>	<b>1 863 582</b>	
Male	1 370 759	
Female	492 823	
Permanent	78 562	
Temporary	1 785 020	

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>1 162 719</b>	
Cattle	483 842	6 700 051
Sheep	682 512	7 206 069
Goats	909 791	9 031 188
Pigs/swine	295 384	1 572 427
Equines	650 651	1 206 601
Horses	3 734	23 915
Asses	649 276	1 157 449
Camels	2 266	25 237
Poultry (1 000 head)	1 138 534	32 957
Local chickens	1 096 359	25 700
Ducks	42 431	266
Guinea fowls	411 384	6 168
Turkeys	949	32
Pigeons	78 767	526
Other animals		
Rabbits and hares	1 379	265 834

IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>42 190</b>	<b>10 180</b>

MACHINERY AND EQUIPMENT USED ON THE HOLDING		Units
Total tractors of all kinds		4 336
Ploughs (machine-powered)		11 774
Other (machine-powered)		
Motor pumps		20 206

TEMPORARY CROPS HARVESTED		
	Number of parcels	Area (ha)
<b>Total</b>	<b>9 655 026</b>	<b>5 380 067</b>
Cereals	7 154 150	4 190 344
Millet	2 132 540	1 577 220
Maize	1 561 255	608 368
Rice	302 169	79 112
Sorghum	3 113 038	1 901 776
Fonio	45 148	23 869
Other temporary crops	2 500 876	1 189 723
Industrial crops	2 427 468	1 007 150
Other crops	73 408	182 573

PERMANENT CROPS		
	Number of trees/plants	Area (ha)
<b>Total</b>	<b>20 540 506</b>	<b>142 499</b>
Tropical and subtropical fruits	n.a.	n.a.
Bananas	2 000 271	895
Mangoes	3 110 925	35 221
Papayas	158 889	167
Guavas	306 416	564
Citrus fruits	692 089	5 651
Nuts	n.a.	n.a.
Cashew nuts	14 271 917	100 002

## 1. HISTORICAL OUTLINE

The Census of Agriculture (CA) 2015, to which the metadata review and data presented here refer, is the fifth CA carried out in Cabo Verde. The previous CAs were conducted in 1963, 1978, 1988 and 2004.<sup>1</sup>

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA 2015 was conducted under the authority of Governmental Resolution No. 100/2013 of 27 August 2013. The Resolution defines the organizational framework of the CA in compliance with Law n° 35 / VII / 2009, of 2 March 2009, which establishes the principles and norms regulating the National Statistical System.

### **Institutional framework and international collaboration**

The institutions responsible for the implementation of the CA 2015 were: (i) the Ministry of Agriculture and Environment,<sup>2</sup> or MAA (ex-Ministry of Rural Development), which ensured overall coordination and (ii) the National Institute of Statistics (INS), which ensured the technical coordination of the census. A Technical Committee composed of the representatives of various interested institutions was established at the central level for the implementation of the CA.

The funds for the CA were provided through the national budget and the African Development Bank (AfDB). In addition, FAO provided technical assistance at the preparation stage.

### **Census staff**

The CA 2015 involved 300 enumerators, 63 team supervisors and 25 district and regional supervisors.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as livestock numbers.

**Reference period:** the crop year 2014/2015 (from 1 May 2014 to 30 April 2015), to collect for other census items.

## 4. ENUMERATION PERIOD

Data in the core module were collected from 9 November 2015 to 25 March 2016.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production), aquaculture and forestry activities.

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production under single management, comprising all land used wholly or partly for agricultural production and all livestock kept, without regard to title, legal form or size.

The agricultural holdings in both the household sector and the non-household sector were covered by the CA.

## 6. GEOGRAPHICAL COVERAGE

The CA 2015 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No cut-off thresholds or other exclusions were applied in the CA.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

A modular approach was adopted for conducting the CA. The core module was implemented in 2015. The supplementary modules (on “rain-fed crop production” and “food security”) were implemented in 2017 and 2018 respectively.

### **Frame**

The listing operation to identify the agricultural holdings was conducted during the census enumeration. The core module provided the frame for the follow-up supplementary modules.

### **Complete and/or sample enumeration method(s)**

Core census module data collection was carried out through complete enumeration.<sup>3</sup> Sampling was used for the supplementary modules.

<sup>1</sup> A modular approach was planned for the CA 2015. The core module was implemented under the WCA 2010 round (in 2015) and only the results of that module were available at the time of development of the SDS 17. Therefore, the metadata and census data here presented refer to the core module, if no reference to other modules is mentioned (see also section 8).

<sup>2</sup> *Ministério da Agricultura e Ambiente (MAA)*

<sup>3</sup> Sampling was used for two supplementary modules, which were conducted in 2017–2018 (see section 8, “Methodological modality for conducting the census”).

**Sample design (if sampling was used)**

A two-stage sampling design was used for supplementary modules. The EAs were the PSUs and the households were the SSUs.

**Data collection method(s)**

Face-to-face interviewing was applied to collect information from holdings, using Computer-Assisted Personal Interviewing (CAPI) and tablets with built-in GPS. Special effort was made to georeference and measure all irrigated parcels.

**Questionnaire(s)**

Two types of questionnaires were used for the core module, for the holdings in: (i) the household sector and (ii) the non-household sector. Other two questionnaires (on “rain-fed crop production” and “food security”) were used for the supplementary modules conducted in 2017–2018.

The CA questionnaires covered 15 of the 16 core items<sup>4</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

New technologies were applied for data collection (CAPI using tablets with built-in GPS), and for georeferencing the agricultural holdings.

**10. DATA PROCESSING AND ARCHIVING**

A computer application was developed by the INS for data collection and processing. Core census module data were processed by the INS, in collaboration with the MAA and transmitted for tabulation and dissemination to the MAA.

**11. CENSUS DATA QUALITY**

Quality checks were conducted by supervisors to assess the enumerators’ work and to ensure the quality of census data. Consistency checks were incorporated into the data entry program to minimize data entry errors, inconsistencies and incomplete data. The use of CAPI enabled monitoring the mobility of the enumerators in the field.

**12. DATA DISSEMINATION**

The main reports with the final census results have been finalized; however, at the time producing the current publication, they were not publicly available.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 7-11 November 2016, Dakar, Senegal. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020dakar/en/>

**FAO.** 2019. Regional Workshop on the Operational Guidelines of the World Programme for the Census of Agriculture 2020 (WCA 2020). 17- 21 June 2019, Bujumbura, Burundi. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020burundi/en/>

**Ministério da Agricultura e Ambiente (MAA).** MAA [online]. Praia, Cabo Verde. [Cited 10 September 2019]. <http://www.maa.gov.cv>

Information provided by the MAA.

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<sup>4</sup> The core item “Legal status of agricultural holder” was not covered by the CA.

# CABO VERDE – CENSUS OF AGRICULTURE 2015 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>45 539</b>	<b>36 456</b>
Civil persons	45 399	35 968
Juridical persons	140	488

LAND TENURE	
	Area (ha)
<b>Total</b>	<b>36 456</b>
Legal ownership and owner-like possession	19 951
Rented from others	5 605
Other form of tenure	10 885
Not declared	15

FRAGMENTATION		
	Holdings	Number of parcels
<b>Total</b>	<b>45 539</b>	<b>75 169</b>
Holdings without land	11 506	
Holdings with land	34 033	75 169
1 parcel	1 479	1 479
2–3 parcels	7 970	9 312
4–5 parcels	7 540	10 957
6–9 parcels	9 493	22 092
10 parcels and over	7 551	31 329

DISTRIBUTION OF LAND, BY LAND SIZE CLASSES		
		Area (ha)
<b>Total</b>	<b>45 539</b>	<b>36 456</b>
Holdings without land	11 506	
Holdings with land	34 033	36 456
Less than 1 ha	23 005	11 384
1–1.99 ha	7 019	9 794
2–4.99 ha	3 505	9 617
5–9.99 ha	380	2 475
10–19.99 ha	90	1 166
20–49.99 ha	23	616
50–99.99 ha	7	434
100–199.99 ha	1	108
200 ha and over	3	862

LAND USE	
	Area (ha)
<b>Total</b>	<b>36 456</b>
Agricultural land	34 096
Arable land	32 242
Land under temporary crops	28 784
Land under temporary pastures	916
Land temporarily fallow	2 543
Land under permanent crops	1 283
Land under permanent pastures	570
Wooded land	1 081
All other land	1 279

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>182 396</b>
Male	89 560
Female	92 836
Engaged in agricultural activities on the holding	97 798
Male	49 187
Female	48 611

LIVESTOCK	
	Head
Cattle	29 558
Sheep	12 620
Goats	107 532
Pigs	66 808
Equines	7 197
Poultry (1 000 head)	n.a.
Chickens	256
Ducks and turkeys	39

<sup>1</sup> According to the provisional census results provided by the MAA.

## 1. HISTORICAL OUTLINE

The Republic of the Congo conducted its first agricultural census in 1985–1986. The second General Agricultural Census (GAC) in the Congo was carried out in 2014–2015.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The Statistics Law (no. 8/2009 of 28 October 2009)<sup>1</sup> defines the national statistical system, its composition and its organization. The Supreme Commission for Statistics is the entity supervising the entire organization of the system, drawing orientations, fixing priorities and planning the statistical activities by adopting regularly a statistical activities programme.

The Presidential Decree 2013-732 of 18 November 2013 established the GAC governing bodies.

### *Institutional framework and international collaboration*

The GAC of the Congo was placed under the responsibility of the Ministry of Agriculture, Livestock and Fishing (MALF). To define the institutional framework for this operation, the decree on the organization of the GAC set up four bodies for its implementation: the Steering Committee,<sup>2</sup> the Technical Committee, the Central Census Bureau (CCB) and 12 departmental committees. The main tasks of the Technical Committee were to prepare the meetings of the national Steering Committee, to approve the schedule of operations, to validate methodological and technical documents (questionnaires, manuals, etc.), and to give a reasoned opinion on the results of the GAC. The role of the CCB consisted in the day-to-day implementation of the census activities. The role of the departmental committees was to support and facilitate the implementation of the census activities at the department level.

FAO provided technical assistance for the implementation of the GAC within a unilateral trust fund project funded by the Government of the Congo. FAO provided technical assistance for the preparatory phase of the census.

### *Census staff*

The staff involved in the GAC<sup>3</sup> amounted to 1 122 individuals, including: 800 enumerators, 160 supervisors, 36 coordinators at the departmental level, 75 data entry clerks and 51 technical and administrative support staff.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as location of the holding or livestock numbers.

**Reference period:** the agricultural season (from 1 September 2013 to 31 August 2014), for other items, such as the main purpose of production and the use of irrigation.

## 4. ENUMERATION PERIOD

The data collection was conducted from November 2014 to March 2015.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production), as well as aquaculture, capture fisheries and forestry activities. A community survey was conducted together with the census.

The **statistical unit** was the agricultural holding. Two types of agricultural holdings were distinguished: (i) holdings in the household sector (“agricultural households”) and (ii) holdings in the non-household sector (“modern holdings”). An agricultural household was defined as “a household with at least one member operating one or more agricultural fields or rearing animals, or practicing aquaculture and/or fishery or forestry activities for their own account or for the account of the household”. A modern holding is characterized by the following criteria: bookkeeping (keeping records); existence and use of equipment; use of hired/paid employees; cultivation of large surfaces;<sup>4</sup> and the fact that the objective of the production is mainly for sale.

The statistical unit for the community survey is the village.<sup>5</sup>

## 6. GEOGRAPHIC COVERAGE

The GAC covered the entire territory of the country except for the two biggest towns; therefore, peri-urban areas were included in the geographic scope of the census.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No cut-off thresholds were used.

<sup>1</sup> A new statistics law was recently enacted: the Law on Official Statistics, No. 36-2018 of 5 October 2018.

<sup>2</sup> The Steering Committee, a ministerial-level body, aimed to coordinate census implementation, mobilize resources and ensure the official publication of census results.

<sup>3</sup> The GAC core module and the community survey.

<sup>4</sup> This criterion was not used in the GAC 2014–2015.

<sup>5</sup> The village is the basic administrative entity for the rural community. Villages are constituted by one or several localities under the common authority of a Village Committee.



## 8. METHODOLOGY

### **Methodological modality for conducting the census**

Although the modular approach was planned for the GAC, with the initial implementation of the core module in 2014–2015, the supplementary modules could not be implemented because of budget constraints. A community survey was carried out together with the GAC. As of mid-2019, the country was planning to implement the following supplementary modules: crops and livestock (household sector), commercial farms, and fisheries and aquaculture.

### **Frame**

The census frame was constituted by the EAs from the 2007 Population and Housing Census (PHC). All households in the EAs covered in the GAC were listed and all agricultural households identified were enumerated.

### **Complete and/or sample enumeration methods**

The GAC used complete enumeration for the core module and for the community survey.

### **Sample design (if sampling was used)**

Sampling was not used.

### **Data collection method(s)**

The face-to-face interviewing method using paper-based questionnaires (the PAPI method) was used in the GAC.

### **Questionnaire(s)**

Two questionnaires were used for each of the two types of holdings: (i) a questionnaire for agricultural households; and (ii) a questionnaire for “modern holdings”. The community survey questionnaire (for the community component) was used together with the census questionnaires and implemented by the supervisors using focus group interviews.

The GAC questionnaires covered 15 of the core items recommended in the WCA 2010.<sup>6</sup>

## 9. USE OF TECHNOLOGY

GPS was used to position the location of the village during the community module. The census results were disseminated online through the CountrySTAT-Congo platform.

## 10. DATA PROCESSING AND ARCHIVING

Manual data entry was done using the CPro software. The SPSS software was used for data editing, imputation, validation and tabulation.

## 11. CENSUS DATA QUALITY

The fieldwork was organized in five steers to optimize the quality of data collected. A comprehensive mechanism for monitoring and supervising fieldwork was established. A team of five enumerators was coordinated by a field supervisor, which was responsible for one geographical zone, called a “control sector”. A district supervisor was responsible for a group of two to five field supervisors covering a geographical zone of one to two districts or communes. A department supervisor was responsible for the organization of fieldwork in the supervised department. Finally, a national supervisor from the CCB was responsible for all operational and technical matters in the field. The data processing procedures included programmes for checking and correcting errors. Procedures for questionnaire retrieving and monitoring were in place from the field to the data processing stage.

The data analysis incorporated chapters on data validation against other data sources, such as the PHC and current surveys.

## 12. DATA DISSEMINATION

Census data were disseminated through the CountrySTAT-Congo website and printed publications. Dissemination workshops were also organized. Thematic reports (including on gender) and cover analyses of the core module, as well as of the community survey component, are available.

## 13. DATA SOURCES

Ministère de l’agriculture, de l’élevage et de la pêche. 2017. *Volume II. Tableaux statistiques du Recensement général de l’agriculture*. Brazzaville, The Congo. (also available at [http://congo.countrystat.org/fileadmin/user\\_upload/countrystat\\_fenix/congo/docs/RGA-Congo-Volume-II-Tableaux-Statistiques.pdf](http://congo.countrystat.org/fileadmin/user_upload/countrystat_fenix/congo/docs/RGA-Congo-Volume-II-Tableaux-Statistiques.pdf)).

## 14. CONTACT

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Website: CountrySTAT-Congo: <http://congo.countrystat.org/>

<sup>6</sup> The “Land tenure type on the holding” item was not covered.

## THE CONGO – GENERAL AGRICULTURAL CENSUS 2014–2015 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>267 610</b>	<b>n.a.</b>
Civil persons	267 419	422 431
Juridical persons	191	n.a.

DISTRIBUTION OF HOLDINGS IN THE HOUSEHOLD SECTOR, BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>267 419</b>	<b>422 431</b>
Less than 0.10 ha	71 011	442
0.10–0.19 ha	7 452	941
0.20–0.49 ha	20 715	6 183
0.50–0.99 ha	46 090	26 969
1.0–1.9 ha	63 257	75 466
2.0–2.9 ha	28 684	61 672
3.0–4.9 ha	17 031	37 209
5.0–9.9 ha	7 080	42 437
10 ha and above	3 454	83 389
Not available	2 645	87 723

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>267 419</b>	<b>422 431</b>
Male	190 896	297 773
Female	76 523	124 658

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		Number
<b>Total</b>		<b>267 419</b>
Male		190 896
Female		76 523
Under 25 years		10 119
Male		7 653
Female		2 466
25–34 years		48 533
Male		39 415
Female		9 118
35–44 years		68 540
Male		54 125
Female		14 415
45–54 years		60 897
Male		44 130
Female		16 767
55–64 years		39 937
Male		23 906
Female		16 031
65 years and over		39 393
Male		21 667
Female		17 726

HOLDINGS, BY HOUSEHOLD SIZE		Number
<b>Total</b>		<b>267 419</b>
1 person		33 712
2–3 persons		68 952
4–5 persons		73 007
6–9 persons		76 741
10 persons and over		15 007

HOLDINGS IN THE HOUSEHOLD SECTOR, BY MAIN PURPOSE OF PRODUCTION		Holdings
<b>Total producing</b>		<b>267 419</b>
Mainly for home consumption		59 089
Mainly for sale		2 279
For home consumption and sale		206 051

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total</b>		<b>1 249 783</b>
Male		602 050
Female		647 733
Engaged in agricultural activities on the holding		514 358
Male		234 597
Female		279 761

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	2 877	37 098
Sheep	12 021	85 265
Goats	20 760	119 836
Pigs/swine	9 376	59 732
Equidae	n.a.	859
Poultry (1 000 head)	101 942	251
Other animals	n.a.	n.a.
Guinea pig	293	n.a.
Grasscutter	1 030	n.a.
Rabbit	n.a.	822
Insects		
Bees (hives)	2 966	19

TEMPORARY CROPS HARVESTED		Holdings
<b>Total</b>		<b>n.a.</b>
Cereals		185 909
Maize		185 584
Rice		1 225
Vegetables and melons		n.a.
Cabbages		24 295
Okra		113 023
Tomatoes		132 869
Onions		36 671
Eggplants		111 796
Spinach		135 030
Carrots		5 632
Endive		56 745
Watermelons		2 970
Root/tuber crops		218 729
Cassava		230 454
Yams		134 678
Taro		90 589
Sweet potatoes		99 264
Potatoes		5 838
Spice and aromatic crops		n.a.
Chilli pepper		110 864
Leguminous crops		n.a.
Peas		60 812
Beans		43 237
Peanuts		166 356
Soybeans		1 809

## 1. HISTORICAL OUTLINE

The 2015/2016 Census of Agricultural Holders and Holdings (REEA), is the third census of agriculture carried out in the Republic of Côte d'Ivoire. The previous censuses were conducted in 1974 and 2001.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

Decree No. 2013-558 of 5 August 2013 on the institution and organization of the census defined the institutional framework for the implementation of the REEA. Several interministerial decrees were adopted to establish the bodies responsible for the performance of census activities. These bodies were: (i) the National Steering Committee (NPC), (ii) the Technical Committee (CTN) and (iii) the Regional Committees (RCs).

### *Institutional framework and international collaboration*

The 2015/2016 REEA was conducted by the Ministry of Agriculture (MINAGRI) in collaboration with the Ministry of Animal and Fisheries Resources (MIRAH), the Ministry of Water and Forests (MINEF), the Ministry of Forestry, Environment, Urban and Sustainable Development (MINESUDD), the Ministry of State and the Ministry of Planning and Development (MPD).

For the REEA, the European Union (EU) provided financial support (approximately 40 percent of the total budget) and FAO provided technical assistance.

### *Census staff*

The census staff for the implementation of the REEA consisted of civil servants and hired field personnel. The latter consisted of 2 500 enumerators, 500 supervisors and other personnel (ICT supervisors, contract drivers, etc.).

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as livestock numbers.

**Reference period:** the crop year 2014/2015 (from 1 May 2014 to 30 April 2015), for other items such as main purpose of production and use of irrigation.

## 4. ENUMERATION PERIOD

The field data collection was conducted from 1 November 2015 to 31 December 2016.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production), as well as aquaculture, capture fisheries and forestry activities. A community survey was conducted together with the REEA.

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production under single management, comprising all land used wholly or partly for agricultural production and all livestock kept, without regard to title, legal form or size. The following types of agricultural holdings were covered in the census: (i) family farm ("agricultural household"); (ii) crop/livestock production organization (OPA/OPE). Rural villages were statistical units for the community survey conducted together with the REEA.

## 6. GEOGRAPHIC COVERAGE

All rural areas were covered in the REEA. For urban areas, all cities were covered, with the exception of Abidjan. However, for the Autonomous District of Abidjan, the operation covered the peripheral areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The "modern holdings" (holdings in the non-household sector) were not covered in the REEA.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

Although a modular approach was planned for conducting the REEA, only the core census module comprising the agricultural households and the OPA/OPE were implemented, because of budget constraints. A community survey was implemented along with the core module.

### *Frame*

A listing operation was conducted during census enumeration to identify the agricultural households. The EA maps from the Population and Housing Census (PHC) 2014 were used for this operation. For the frame of the OPA/OPE and modern agricultural holdings, different sources were used: information available at the National Institute of Statistics (NIS), and information provided by the regional directorates of the ministries involved in the REEA. In addition, local administrations provided a list of new modern agricultural holdings.

### *Complete and/or sample enumeration methods*

The core module was conducted on a complete enumeration basis.

**Sample design (if sampling was used)**

Not applied.

**Data collection method(s)**

For the data collection in the REEA 2015/2016, the CAPI method was used.<sup>1</sup>

**Questionnaire(s)**

The collection of data was done using electronic questionnaires. Specific questionnaires were administered for the REEA 2015/2016: (i) a core module questionnaire for family farms; (ii) an OPA/OPE questionnaire; and (iii) a community survey questionnaire.

The census questionnaires covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Data capture was done using CAPI (with personal digital assistants, or PDAs). The GPS was used to identify the geographical location of the households/farms.

**10. DATA PROCESSING AND ARCHIVING**

Two modes of data transmission were adopted under the REEA: (i) the routing of data via the Internet (specifically, via Dropbox) and (ii) physical transmission (on hard disk, USB key and paper supports). The data processing plan covered the following aspects: (i) equipment preparation; (ii) file clearance; (iii) data validation; and (iv) tabulation. Computer processing was done centrally, in Abidjan. The software used to process the REEA data was CSPro version 6.1. The clearance phase was an iterative process of cleaning up the database and producing clean files. To ensure undistorted data after clearance, the tabulation<sup>2</sup> was done under CSPro on both versions of the database: with both raw and clean data. The analysis of census results was undertaken from March to April 2017.

All data collected and documents produced (reports, methodology, manuals) were archived in a database the administration of which was entrusted to the Directorate of Statistics, Documentation and Informatics (DSDI) of MINAGRI and a backup copy was made.

**11. CENSUS DATA QUALITY**

Technical arrangements were made at different levels to ensure the quality of field data collection. The first provision was to incorporate consistency checks into the data entry programme for the different questionnaires, to minimize data entry errors, inconsistencies, and incomplete data. Two key programmes were designed and used: the Data Consistency Control Programme and the Team Tracking Programme. The latter programme made it possible to monitor the mobility of teams in the field.

**12. DATA DISSEMINATION**

The preliminary census results were disseminated in 2017. The REEA report with the final census results was produced. However, at time of publishing, it was not yet disseminated.

**13. DATA SOURCES**

**Ministère de l'agriculture et du développement rural (MINADER).** 2017. *The 2015/2016 REEA, core module census report*. Abidjan, Côte d'Ivoire.

**Ministère de l'agriculture et du développement rural (MINADER).** MINADER [online]. Abidjan, Côte d'Ivoire. [Cited 1 September 2019]. <http://www.agriculture.gouv.ci/>

Information provided by the MINADER.

**14. CONTACT**

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<sup>1</sup> The first phase of enumeration consisted of listing all agricultural households across the national territory and identifying the farmers. During enumeration, once a household was identified as a family farm (agricultural household), the questionnaire for the core module was filled in. The data collection for the community survey was done by supervisors (assisted by the enumerators). The supervisors asked the questions to the village chief or the representative thereof. The collection of data from OPAs/OPEs took place at the headquarters of the OPA/OPE in question, by interviewing the manager of the structure.

<sup>2</sup> The statisticians of the Directorate of Statistics, Documentation and Informatics (DSDI) of MINAGRI, with the active participation of the INS, produced the tabulation plans. These tabulation plans have been validated by the REEA Technical Committee.

# CÔTE D'IVOIRE – CENSUS OF AGRICULTURE 2015/2016 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>1 407 451</b>	<b>3 344 241</b>

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>1 407 451</b>	<b>3 344 241</b>
Agricultural land	1 355 277	3 331 653
Forest	12 469	12 588

DISTRIBUTION OF HOLDERS, BY SEX AND AGE	
	Number
<b>Total</b>	<b>1 742 838</b>
Male	1 363 180
Female	379 658
Under 25 years	122 220
Male	90 109
Female	32 111
25–34 years	438 124
Male	347 869
Female	90 255
35–44 years	491 756
Male	400 168
Female	91 588
45–54 years	354 759
Male	273 246
Female	81 513
55–64 years	211 306
Male	158 244
Female	53 062
65 years and over	124 673
Male	93 544
Female	31 129

HOLDINGS, BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>1 407 451</b>
1 person	84 476
2–3 persons	206 755
4–5 persons	327 060
6–9 persons	473 753
10 persons and over	315 407

LIVESTOCK	
	Holdings
<b>Total holdings with livestock</b>	<b>624 546</b>
Cattle	63 409
Sheep	181 577
Goats	186 702
Pigs/swine	59 273
Poultry	475 961

IRRIGATED LAND AREA	
	Area irrigated (ha)
<b>Total irrigated land</b>	<b>114 459</b>

PERMANENT CROPS		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cashew nuts	416 094	472 762
Pineapples	104 640	120 242
Peanuts	264 823	270 535
Bananas	154 708	182 514
Cocoa	845 896	981 145
Coffee	223 358	241 947
Coconuts	29 071	32 224
Cola nuts	89 936	106 802
Rubber	162 515	173 280
Mangoes	91 765	105 222
Nuts	962	1 002
Oil palms	126 128	143 359

<sup>1</sup> According to the provisional census results provided by the MINADER.

## 1. HISTORICAL OUTLINE

Egypt has conducted eight national agricultural censuses, all by complete enumeration, in the years 1929, 1939, 1950, 1961, 1982, 1990, 2000 and 2010. The metadata and data presented here refer to the Agricultural Census (AC) 2009/2010.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The AC was conducted in accordance with Law No. 28 of 1928 and Law No. 35 of 1960, which regulate the matter of statistics and censuses.

### **Institutional framework**

The AC was organized by the Ministry of Agriculture and Land Reclamation (MALR), Economic Affairs Sector, Central Department for Agricultural Census. The census was funded from the State budget.

### **Census staff**

The census staff amounted to 23 305 persons, including 15 023 enumerators, 2 682 supervisors (“chief enumerators”), 800 coordinators in the governorates and their assistants, 1 700 coordinators in the directorates of agriculture and their assistants, 2 000 data entry and editing staff and 1 100 other personnel (drivers, etc.).

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 6 October 2010, for inventory items such as livestock numbers, machinery and equipment.

**Reference period:** the agricultural year 2009/2010 (from 1 November 2009 to 31 October 2010).

## 4. ENUMERATION PERIOD

The AC fieldwork was conducted in two phases:

- first phase: the listing operation (November 2009);
- second phase: census data collection (at the end of the agricultural year, in October/November 2010).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production), as well as aquaculture activities.

The **statistical unit** was the agricultural holding, defined as an economic and technical unit comprising all livestock kept and all land used wholly or partly for agricultural production purposes. A holding was defined as being within a single district (administrative unit). A certain threshold was applied to establish the census universe (see section 7).

## 6. GEOGRAPHIC COVERAGE

The AC covered the entire territory of the country, both rural and urban areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following minimum size limits were applied for the agricultural holding, in the AC 2009/2010:

- the area must be not less than 12 *sahm* (87.5 m<sup>2</sup>); or
- at least one head of cows, buffaloes, or camels; or
- five head of sheep, goats or combinations of these; or
- one hundred head of poultry or ten beehives; or
- one fishery cage; or
- “with the ownership of an agricultural machine or sharing it and used in agriculture”.

On the other hand, an observation unit keeping only pigs or draught animals such as donkeys and mules is not considered an agricultural holding.<sup>1</sup>

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2009/2010.

<sup>1</sup> Desert lands that belong to reclamation companies, but that have not yet delivered to beneficiaries because of incomplete infrastructure or are not ready for cultivation, are not classified as holdings. Only the cultivated parts of those desert areas qualify to be classified as agricultural holdings.

**Frame**

During the first phase of the census fieldwork, a complete list of the agricultural holdings in the household sector was established. The administrative data sources owned by different institutions were used to build the census frame for the non-household sector (the Real Estate Tax Authority, directorates of agriculture, agricultural associations, veterinary units, mechanization units, the Land Reclamation Sector of the MALR, etc.).

**Complete and/or sample enumeration methods**

All holdings in scope were covered by complete enumeration.

**Sample design (if sampling was used)**

Not applied.

**Data collection method(s)**

Face-to-face interviewing using the PAPI method was applied to collect census data from the agricultural holdings – civil persons. The self-interviewing method was used to collect data from the agricultural holdings – juridical persons, under the guidance of chief enumerators.

**Questionnaire(s)**

Paper-based forms were used for both phases of the census fieldwork: (i) a listing form to identify the holdings in the household sector; and (ii) a detailed questionnaire for census data collection.

The AC 2010 covered 14 of the 16 core items recommended in the WCA 2010.<sup>2</sup>

**9. USE OF TECHNOLOGY**

No information on the use of new technology was provided in the census reports available.

**10. DATA PROCESSING AND ARCHIVING**

The census questionnaires were first checked and verified by supervisors. After initial quality procedures were applied, the questionnaires were sent to the computer centre for manual data entry, processing and production of final results.

**11. CENSUS DATA QUALITY**

Significant emphasis was placed on data quality throughout the entire census exercise, including training, supervision of fieldwork, data entry, editing and validation. A comparison between the census results and some administrative data sources (such as the total area of holdings and cultivated area, livestock numbers and agricultural machinery) was made for validation purposes.

**12. DATA DISSEMINATION**

The census results were produced at the national level for each governorate and tabulated by districts. The tables with census results were presented in six chapters: (i) Holdings' characteristics; (ii) Area of holding; (iii) Irrigation and drainage; (iv) Employment; (v) Farm machinery; and (vi) Livestock.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 16-19 May 2016, Amman, Jordan. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020jordan/en/>

**Ministry of Agriculture and Land Reclamation.** *The Eighth Agricultural Census in Egypt 2009/2010*. Giza, Egypt.

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<sup>2</sup> The following core items were not covered by the AC: (i) "The main purpose of production of the holding"; and (ii) "Other economic production activities of the holding's enterprise".

## EGYPT – AGRICULTURAL CENSUS 2009/2010 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>5 404 395</b>	<b>4 086 930</b>
Civil persons (Individuals)	5 401 432	3 765 229
Juridical persons	2 963	321 701

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>5 404 395</b>	<b>4 086 930</b>
Holdings without land	964 863	
Holdings operated under one tenure form	4 302 847	3 884 871
Land owned	4 039 509	3 473 460
Land rented	212 482	189 220
Other form of tenure	50 856	222 191
Holdings operated under two or more tenure forms	136 685	202 059

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Total</b>	<b>5 404 395</b>	<b>4 086 930</b>
Holdings without land	964 863	
Holdings with land	4 439 532	4 086 930
1 parcel	3 083 613	2 244 119
2–3 parcels	987 585	1 118 740
4–5 parcels	299 442	525 699
6–9 parcels	55 278	134 528
10 parcels and over	13 614	63 844

DISTRIBUTION OF HOLDINGS, BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>5 404 395</b>	<b>4 086 930</b>
Holdings without land	964 863	
Holdings with land	4 439 532	4 086 930
Less than 0.42 ha	2 143 888	387 928
0.42–0.84 ha	1 068 634	555 283
0.84–1.26 ha	531 455	494 718
1.26–1.68 ha	230 359	309 212
1.68–2.1 ha	99 302	175 129
2.1–2.94 ha	170 336	387 547
2.94–4.2 ha	60 993	203 887
4.2–6.3 ha	66 006	314 723
6.3–8.4 ha	24 704	167 168
8.4–12.6 ha	23 516	223 165
12.6–21 ha	12 027	180 457
21–42 ha	5 425	139 458
42–210 ha	2 456	173 708
210–420 ha	218	58 055
420 ha and above	213	316 494

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>5 404 395</b>	<b>4 086 930</b>
Cultivated land	4 421 810	3 814 663
Arable land	4 198 658	3 152 402
Land under permanent crops	348 617	655 533
Land under timber trees and shrubs	568	3 381
Land under permanent nurseries	947	969
Land under protected crops	1 531	2 378
Uncultivated land	253 594	272 266

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>5 401 432</b>	<b>3 765 229</b>
Male	5 188 653	3 650 535
Female	212 779	114 694

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		Number
<b>Total</b>		<b>5 401 432</b>
Male		5 188 653
Female		212 779
Under 25 years		27 506
Male		26 965
Female		541
25–35 years		294 878
Male		289 405
Female		5 473
35–45 years		1 129 244
Male		1 098 208
Female		31 036
45–55 years		2 031 668
Male		1 953 341
Female		78 327
55–60 years		879 199
Male		838 137
Female		41 062
60 years and over		1 038 937
Male		982 597
Female		56 340

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Engaged in agricultural activities on the holding</b>		<b>14 738 171</b>
Male		9 672 947
Female		5 065 224

EMPLOYEES WORKING ON THE HOLDING		Number
<b>Total employees</b>		<b>11 481 188</b>
Male		6 823 084
Female		4 658 104
Individuals		11 460 403
Male		6 803 069
Female		4 657 334
Juridical persons		20 785
Male		20 015
Female		770

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	3 809 956	9 864 767
Buffaloes	2 451 730	4 335 817
Cows	2 781 351	5 528 950
Sheep	2 036 557	8 715 424
Goats	1 670 847	6 651 915
Horses	80 793	84 853
Mules and hinnies	27 969	28 096
Asses	2 759 422	3 029 378
Camels	94 848	153 801
Poultry (1 000 head)	n.a.	124 504
Chickens	4 150 984	68 447
Pigeons	1 118 843	9 646
Geese and ducks	3 587 560	41 144
Turkeys	701 525	5 267
Other animals	n.a.	n.a.
Rabbits	1 118 843	9 646 485
Insects		
Bees (hives)	36 107	1 112 652



## 1. HISTORICAL OUTLINE

The first General Census of Agriculture<sup>1</sup> (GCA) in the Republic of Equatorial Guinea was carried out in 2015, along with the fourth Population and Housing Census (PHC) and the first Labour Force, Training and Employment Survey (LFTES).

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

Law No. 03-2001 of 17 May 2001 provides the legal basis for the organization of statistical activities in Equatorial Guinea. This law defines the principles of the activity of official statistics and the institutional framework governing the activities of the departments and agencies responsible for the production and dissemination of official statistics, including the conduct of the agricultural census.

The PHC, the GCA and the LFTES were set up by Presidential Decree No. 11/2011 of 24 January 2011, with the overall management of the census activities being mandated to the Ministry of Economy, Planning and Public Investment (MEPPI). Ministerial Order No. 01/2013 of 23 August 2013 issued by MEPPI instituted administrative and technical structures for the implementation of the census activities.

### **Institutional framework and international collaboration**

The administrative structures for the implementation of the census activities were the National Committee, the provincial committees, the district committees and the local committees. The technical structures for the conduct of these operations were the Technical Committee and the National Bureau of Census.

The former General Direction of Statistics and National Accounts of the MEPPI conducted the 2015 PHC, with the technical support of a private company under a Letter of Agreement (LoA). FAO, the UNFPA, UNICEF, the ILO and UNDP provided technical assistance for the implementation of the PHC, the GCA and the LFTES.

### **Census staff**

The census staff amounted to 1 700 persons, including 150 cartographers, 50 district supervisors, 150 supervisors (team leaders), 1 200 enumerators and 150 drivers.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as livestock numbers.

**Reference period:** the last 12 months (from 20 June 2014 to 20 July 2015), for other items such as main purpose of production and use of irrigation.

## 4. ENUMERATION PERIOD

Data collection took place from 20 June to 19 July 2015.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

### **Census scope**

The GCA 2015 covered the agricultural production activities (crop and livestock production).

### **Statistical unit**

The statistical unit used in the GCA 2015 was the agricultural holding, defined as “an economic unit of agricultural production comprising all livestock kept, all land used partially or totally for agricultural production without regard to title, legal form or size, under the single management exercised by one or more individuals in the household, jointly by two or more individuals in different households”. Only the agricultural holdings in the household sector (“agricultural households”) were covered in the CA.

## 6. GEOGRAPHIC COVERAGE

The GCA 2015 covered the entire national territory.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The agricultural holdings in the non-household sector were not covered by the census.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The GCA 2015 was integrated with the PHC 2015. The census modality used was the classical approach.

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<sup>1</sup> *Censo General de Agricultura.*

**Frame**

The cartography phase of the two censuses delineated and digitized the boundaries of each village community (CV) in rural areas and neighbour community (CP) in urban areas. EAs were delineated within each CV/CP and EA maps were prepared for data collection. The census cartography used high-resolution satellite images covering the entire territory. The PHC 2015 provided the list of households, identified during the census, that engaged in own-account agricultural activity.

**Complete and/or sample enumeration methods**

The data collection was carried out on a complete enumeration basis.

**Sample design (if sampling was used)**

No sampling was applied.

**Data collection method(s)**

The CAPI method was used for census data collection.

**Questionnaire(s)**

One single questionnaire was administered for the census of agriculture.

The census questionnaires (for the GCA and PHC) covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Satellite imagery was used for digitized mapping. The CAPI method (using tablets) was applied for data collection.

**10. DATA PROCESSING AND ARCHIVING**

The CAPI method (with tablets) was used for data collection. Data were downloaded and backed up every two days by the district supervisor to quickly check for errors and ensure correction and storage for further cleaning at a later stage.

**11. CENSUS DATA QUALITY**

No information about data quality aspects was provided in the census materials available.

**12. DATA DISSEMINATION AND USE**

At the time of publication, the GCA 2015 report with the final results had not yet been released.<sup>2</sup>

**13. DATA SOURCES**

**Direcció General de Estadística Nacional (INEGE).** Undated. *Censo de población 2015, República de Guinea Ecuatorial. Resultados preliminares.* Malabo, Equatorial Guinea.

**Direcció General de Estadística Nacional (INEGE).** Undated. *Resultados definitivos del I censo general de agricultura.* Malabo, Equatorial Guinea.

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 7-11 November 2016, Dakar, Senegal. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020dakar/en/>

Information provided by the NSI.

**14. CONTACT**

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Website: <http://www.inege.gq>

<sup>2</sup> Therefore, this publication does not include the tables with census results for the GCA 2015.

## 1. HISTORICAL OUTLINE

The first Census of Agriculture (CA) in the Kingdom of Eswatini was conducted in 1971/1972, followed by CAs carried out in 1983/1984, in 1992/1993, and in 2002/2003. The fifth CA was conducted in 2012/2013.<sup>1</sup>

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Swaziland Statistics Act of 27 October 1967 defined the domains for which statistics (including agricultural statistics) should be collected and disseminated.

### **Institutional framework and international collaboration**

The organization of the CA of Swaziland was placed under the responsibility of the Central Statistical Office (CSO). The CA 2012/2013 was funded by the Government.

### **Census staff**

The staff for the field data collection consisted of 555 enumerators, coordinated by 56 supervisors.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items, such as livestock numbers.

### **Reference periods:**

- agricultural season 2011/2012 (from October 2011 to April 2012), for crops, agricultural machinery used, etc.;
- crop season 2012/2013, for certain items such as method of ploughing; and
- the last 12 months, for the dynamics of livestock herds, etc.

## 4. ENUMERATION PERIOD

The data collection was conducted from October 2012 to June 2013 (see also section 8 below).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

### **Scope of the census**

The scope of the CA 2012/2013 covered crop and livestock production activities, as well as forestry and fisheries activities. Nevertheless, units engaged in forestry or fisheries were not covered unless they also performed some crop or livestock production activities. A community survey was conducted along with the census.

### **Statistical unit**

The agricultural holding is the enumeration unit, “comprising all land used and all livestock kept wholly or partly for agricultural production purposes. An individual or household may exercise management, jointly by two or more individuals or households, or by a juridical person such as a corporation, cooperative or government agency”.

The CA 2012/2013 covered the holdings in the household and the non-household sectors.

## 6. GEOGRAPHIC COVERAGE

The census covered rural areas of the country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No threshold was applied in the CA.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The census data collection was conducted in two phases: (i) in the first phase, the enumeration of rural households<sup>2</sup> was conducted and the agricultural holdings were identified (a complete enumeration phase); (ii) in the second phase, area measurement and crop cutting were conducted in a sample of holdings.

### **Frame**

The census frame was built based on the EAs established for the Population and Housing Census (PHC) 2007.

### **Complete and/or sample enumeration method(s)**

The CA was a combination of: (i) a complete enumeration for certain items (in the first phase) and (ii) a sample enumeration of holdings for the items related to area and yield measurements and “general agricultural enquiries” (in the second phase).

<sup>1</sup> Kingdom of Eswatini (former Swaziland).

<sup>2</sup> Enumerations of “rural homesteads”.

**Sample design (if sampling was used)**

In each EA, a sample of ten holdings was selected for the data collection for the area and yield measurements and “general agricultural enquiries”.

**Data collection method(s)**

The face-to-face interviewing method using a paper questionnaire (PAPI method) was applied.

**Questionnaire(s)**

One questionnaire with different modules was used for the holdings.

Of the 16 core items required by the WCA 2010, the CA questionnaire covered 13 items.<sup>3</sup>

**9. USE OF TECHNOLOGY**

No information about the use of technology was provided in the census materials available.

**10. DATA PROCESSING AND ARCHIVING**

Manual data entry and editing (such as range and consistency edits, and imputations) were done using CPro software. Tables were generated and edited using, respectively, CPro and Microsoft Excel.

**11. CENSUS DATA QUALITY**

The fieldwork was organized in several phases, to ensure the quality of the data collected. An enumerator was responsible for data collection in three EAs established for the PHC 2007, according to an adjusted workload. S/he was part of a team of ten enumerators, supervised by a field supervisor, who checked the coherence and quality of each filled questionnaire.

**12. DATA DISSEMINATION AND USE**

Dissemination workshops were organized to release the census results.

At the time of publication, the CA report with the final results had not yet been released.

**13. DATA SOURCES**

Information provided by the Central Statistical Office.

**14. CONTACT**

Central Statistical Office

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Telephone: (+268) 24042151

E-mail: [director@swazistats.org.sz](mailto:director@swazistats.org.sz)

Website: <http://www.gov.sz>

<sup>3</sup> The following core items were not covered by the CA: (i) “Main purpose of production of the holding”; (ii) “Area of holdings according to land use types”; (iii) “Land tenure types on the holding”; and (iv) Presence of forests and other woodland on the holding.

ESWATINI – CENSUS OF AGRICULTURE 2012/2013 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS	
	Holdings
<b>Total</b>	<b>108 164</b>
Individual	97 429
Cooperative	444
Other	10 291

HOLDERS, BY SEX AND AGE	
	Number
<b>Total</b>	<b>108 164</b>
Male	62 724
Female	45 440
Under 19 years	217
Male	88
Female	129
20–29 years	4 584
Male	2 580
Female	2 004
30–39 years	16 345
Male	10 227
Female	6 118
40–49 years	24 676
Male	14 650
Female	10 026
50–59 years	24 240
Male	14 170
Female	10 070
60–69 years	22 007
Male	12 329
Female	9 678
70–79 years	11 058
Male	6 094
Female	4 964
80–89 years	3 956
Male	2 007
Female	1 949
90 years and over	1 081
Male	579
Female	502

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX AND AGE	
	Number
<b>Total</b>	<b>728 223</b>
Male	348 825
Female	379 398
Aged 15 years and above	409 554
Male	187 907
Female	221 647
Aged 5–14 years	199 116
Male	100 856
Female	98 260
Aged under 5 years	119 553
Male	60 062
Female	59 491

HOLDINGS, BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>108 164</b>
1 person	6 373
2 persons	7 512
3–4 persons	22 906
5–6 persons	25 408
7–8 persons	18 227
9–10 persons	11 337
11 persons and over	16 401

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>86 609</b>	
Cattle	n.a.	624 383
Sheep	n.a.	21 571
Goats	n.a.	720 208
Pigs/swine	n.a.	46 775
Horses	n.a.	26 610
Poultry (1 000 head)	n.a.	n.a.
Chickens	n.a.	1 084
Ducks	n.a.	16
Turkeys	n.a.	13
Other	n.a.	25
Insects		
Bees (hives)	1 414	n.a.

TEMPORARY CROPS HARVESTED	
	Holdings
<b>Total</b>	<b>n.a.</b>
Cereals	n.a.
Maize	89 716
Sorghum	11 369
Vegetables and melons	n.a.
Cabbages	7 617
Tomatoes	9 161
Spinach	11 821
Onions	8 550
Carrots	4 977
Other vegetables	10 456
Oilseed crops	n.a.
Groundnuts	15 940
Sunflower	2 607
Leguminous crops	n.a.
Beans	13 742
Sugar crops	1 677
Other temporary crops	n.a.
Cotton	3 765

PERMANENT CROPS	
	Holdings
<b>Total</b>	<b>n.a.</b>
Tropical and subtropical fruits	n.a.
Avocados	32 859
Peaches	35 614
Papayas	26 078
Bananas	29 304
Other fruits	46 970
Citrus fruits	n.a.
Oranges	12 500

<sup>1</sup> According to the information provided by the Central Statistical Office.

## 1. HISTORICAL OUTLINE

The 2011/2012 Agricultural Census (AC) was the second comprehensive agricultural census conducted in the Gambia. The first AC was undertaken in 2001/2002.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The census was conducted under the authority of the Gambia Bureau of Statistics (GBoS), as per the Statistics Act 2005.

### **Institutional framework and international collaboration**

The Ministry of Agriculture (MoA) was responsible for carrying out the AC 2011/2012. The Planning Services Unit of the Department of Agriculture (DOA) of the MoA conducted the AC, in close collaboration with the GBoS. The GBoS provided the cartography and maps, as well as technical guidance with regard to the planning and carrying out of the AC. The AC Technical Committee was established for the coordination of census activities.

The AC was supported by the Commonwealth Secretariat and various international development agencies, such as FAO, the World Food Programme (WFP), the African Development Bank (AfDB), the World Bank and the United Nations Development Programme (UNDP).

### **Census staff**

The fieldwork for the AC 2011/2012 involved 83 enumerators and 15 field supervisors.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as livestock numbers.

**Reference period:** the crop year (from 1 June 2010 to 30 May 2011), for other items.

## 4. ENUMERATION PERIOD

The AC data collection was carried out from late July 2011 to March 2012.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). Along with holding-level data collection, a community survey was conducted to collect community-level data.

The **statistical unit** was the agricultural holding, defined as a technical or operational unit of agricultural production comprising all land used wholly or partly for agricultural production purposes, under single management exercised by one person alone or with others, without regard to title, legal form, size or location.

Only the holdings in the household sector were covered in the census.

## 6. GEOGRAPHIC COVERAGE

Urban areas and certain semi-urban areas (such as Kombo North in the West Coast Region) were not covered by the AC.

## 7. EXCLUSIONS AND CUT-OFF THRESHOLDS

Holdings in the non-household sector were not covered in the census.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The AC was a sample-based census. A community survey was conducted jointly with the AC (see more details in section 8 below, "Questionnaire(s)").

### **Frame**

The EAs defined by the GBoS for the 2003 Population Census (PCs) were used for the AC as PSUs.

### **Complete and/or sample enumeration methods**

The 2011/2012 AC was conducted using sample enumeration.

### **Sample design (if sampling was used)**

Two-stage sample design was applied, the PSUs being the EAs. The sample of EAs was selected from each district with PPS (the number of households was used as a measure of size). The SSUs were the agricultural holdings. The SSUs within the EAs were selected using systematic random sampling (SRS). During the first stage, 400 EAs were selected, while 2 000 agricultural holdings were selected during the second stage. The AC covered approximately 15 percent of the EAs and 4 percent of all households enumerated in the 2003 PC.

**Data collection method(s)**

Census data collection was conducted using printed questionnaires and: (i) face-to-face interviews (the PAPI method), together with (ii) objective measurements of crop areas and yields.

**Questionnaire(s)**

Detailed census data were collected using seven questionnaire forms:

- Form 1 – Listing questionnaire, used to list all households in a sampled EA, to identify those engaged in agricultural activities (that is, the agricultural holdings);
- Form 2 – Holding questionnaire, used to collect data on the demographic characteristics of household members, as well as some data on the agricultural holding;
- Form 3 – Field questionnaire;
- Form 4 – Yield plot questionnaire, used for recording harvest from yield plots;
- Form 5 – Village questionnaire, designed to collect community-level data;
- Form 6 – Groundnut questionnaire; and
- Form 7 – Mango questionnaire.

The questionnaires covered 11 of the 16 core items recommended by the WCA 2010.<sup>1</sup>

**9. USE OF TECHNOLOGY**

GPS devices were used for the area measurement of holdings' parcels. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

The main programs for data entry, batch edit/validation and tabulations were developed using CSPRO. Error controls were built into every stage of the data processing cycle. Two IBM 120-GB external mass storage devices were used for weekly backups of the census data. STATA was used to calculate standard errors and coefficients of variation for the census estimates. CSPRO was used to produce most of the tables according to the tabulation plan designed by the Census Technical Committee. In some cases, Microsoft Excel was used to generate data charts.

**11. CENSUS DATA QUALITY**

CSPRO data verification techniques were used to control the quality of the census data. In this process, data were keyed again and compared with the value currently in the data file. The system would flag errors in case of discrepancies between the item in the file and the keyed item.

**12. DATA DISSEMINATION AND USE**

The census results are available from printed reports and upon request, as well as online, on the Ministry of Agriculture's website.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 18-22 September 2017, Nairobi, Kenya. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020kenya/en/>

**Ministry of Agriculture, Department of Agriculture, Planning Services Unit.** 2012. *Report of the Agricultural Census of The Gambia 2011/2012*. Banjul, The Gambia. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Reports\\_6/GAM\\_REP\\_ENG\\_2011\\_2012.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Reports_6/GAM_REP_ENG_2011_2012.pdf)).

**Ministry of Agriculture (MoA). MoA** [online]. Banjul, The Gambia. [Cited 10 September 2019]. <http://www.moa.gov.gm/ps>

**14. CONTACT**

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Website: Ministry of Agriculture – <http://www.moa.gov.gm/ps>

Website: Gambia Bureau of Statistics – <http://www.gbos.gov.gm>

Website: CountrySTAT-Gambia – <http://www.countrystat.org/home.aspx?c=GMB&li=1>

<sup>1</sup> The following core items were not covered by the CA: (i) "Legal status of agricultural holder"; (ii) "Land tenure types on the holding"; (iii) "Presence of irrigation on the holding"; (iv) "Presence of aquaculture on the holding"; and (v) "Presence of forests and other woodland on the holding".

THE GAMBIA – AGRICULTURAL CENSUS 2011/2012 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Cultivated area (ha)
<b>Total</b>	<b>82 027</b>	<b>343 949</b>

LAND TENURE		
	Fields	Cultivated area (ha)
<b>Total</b>	<b>491 202</b>	<b>343 949</b>
Community	37 823	n.a.
Family	241 671	n.a.
Individual	147 361	n.a.
Leased	491	n.a.
Rented	2 456	n.a.
Borrowed	58 453	n.a.
Other form of tenure	2 947	n.a.

HOLDERS, BY SEX AND AGE		
	Number	
<b>Total</b>	<b>82 027</b>	
Male	74 633	
Female	7 394	
Under 25 years	2 277	
Male	2 010	
Female	267	
25–45 years	21 562	
Male	19 689	
Female	1 873	
45–65 years	37 407	
Male	34 205	
Female	3 202	
65 years and over	20 781	
Male	18 729	
Female	2 052	

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		
	Number	
<b>Total</b>	<b>861 739</b>	
Male	436 100	
Female	425 639	

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	30 925	398 472
Sheep	29 998	143 992
Goats	50 923	320 990
Pigs/swine	733	6 383
Horses	9 202	16 903
Asses (donkeys)	32 658	57 580
Poultry (1 000 head)	33 403	1 870
Chickens	n.a.	1 853
Ducks	n.a.	7
Other	n.a.	11

HOLDINGS IN THE HOUSEHOLD SECTOR BY MAIN PURPOSE OF PRODUCTION	
	Holdings
<b>Total producing for</b>	<b>82 027</b>
Home consumption only	40 029
Sale only	3 117
Home consumption and sale	38 881

TEMPORARY CROPS HARVESTED		
	Holdings	Cultivated Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	n.a.	n.a.
Maize	n.a.	26 513
Millet	n.a.	110 962
Sorghum	n.a.	30 064
Rice	n.a.	34 050
Vegetables and melons	n.a.	n.a.
Cabbages	18 292	n.a.
Tomatoes	43 228	n.a.
Onions	24 690	n.a.
Okra	51 759	n.a.
Bitter tomatoes	36 502	n.a.
Local onions	16 734	n.a.
Carrots	2 543	n.a.
Cucumbers	2 625	n.a.
Pumpkin	20 015	n.a.
Root/tuber crops	n.a.	n.a.
Sweet potatoes	18 374	n.a.
Irish potato	1 312	n.a.
Oilseed crops	n.a.	n.a.
Sesame	n.a.	8 607
Groundnuts	n.a.	120 403
Other temporary crops	n.a.	n.a.
Ornamental plants	2 051	n.a.

PERMANENT CROPS	
	Holdings
<b>Total</b>	<b>n.a.</b>
Tropical and subtropical fruits	n.a.
Avocados	2 206
Papayas	15 799
Mangoes	56 623
Bananas	19 758
Guavas	12 857
Citrus fruits	n.a.
Oranges	22 931
Limes	8 882
Grapefruit	4 060
Oilseed crops	
Coconuts	2 170
Cashew nuts	25 081



## 1. HISTORICAL OUTLINE

Lesotho has been conducting decennial Agriculture Censuses (ACs) since 1949. The AC 1949/1950 and the AC 1959/1960 were both organized by the Ministry of Agriculture, while the ACs for 1969/1970, 1979/1980, 1989/1990, 1999/2000, and the latest, AC 2009/2010, to which the metadata review and data presented here refer, was organized by the Bureau of Statistics (BOS).

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The legal basis of the AC 2009/2010 included:

- the Lesotho Bureau of Statistics Act, Act No. 8 of 2001; Article 15 stipulates the mandate of the Minister of Development Planning which, on the recommendation of the Council, establishes the timing and data content of the AC; and
- the Proclamation of the Minister of Development Planning, which specified the AC reference period (the agricultural year that covered the period from 1 August 2009 to 31 July 2010).

### *Institutional framework and international collaboration*

The responsibility for conducting the AC is vested on the Minister of Development Planning. The Director of the Bureau of Statistics (BoS) is the census commissioner. The former provides policy guidelines, mobilizes all necessary resources, and is responsible for the proper execution of the AC plan with the assistance of the census committees and teams.<sup>1</sup> Funds for the AC 2009/2010 were mainly provided by the Government of Lesotho. FAO provided technical support for the analysis of census data.

### *Census staff*

The number of staff involved in the census operation was 177, including 45 supervisors, 120 enumerators and 12 data processing personnel.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as livestock numbers.

### *Reference periods:*

- the past six months (preceding the day of interview), for milk production, stock changes for livestock, etc.
- the past twelve months (preceding the day of interview), for the economic activity of household members, etc.

## 4. ENUMERATION PERIOD

Field data collection was conducted in several phases: (i) households listing: from 15 April to 3 June 2009; (ii) crop items: winter production – from August 2009 to February 2010; summer production – from February to July 2010; (iii) livestock items: number of livestock – in August 2009; stock change – February 2010; closing stock – July 2010; (iv) a community survey, conducted from 1 June to 28 June 2009.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). A community survey was conducted in conjunction with the AC 2009/2010. A community survey was conducted to collect community-level data.

The **statistical unit** was the agricultural holding, defined as “an economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for own account agricultural production purposes, without regard to title, legal form, or size”. The AC covered the holdings in the household sector (“agricultural households”) only.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country (rural and urban areas).

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The holdings in the non-household sector were not covered in the AC 2009/2010.<sup>2</sup>

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The AC 2009/2010 was a sample-based census. A community survey was conducted along with the census.

### *Frame*

The main source of frame for the EAs was the Population Census (PC) 2006. The listing of households at EA level provided an updated sampling frame.

<sup>1</sup> The census committees and teams included a technical committee, a logistics team, a data processing team, an analysis team and others.

<sup>2</sup> The data on holdings in the non-household sector were collected in the AC (in the sampled EAs); however, they were neither analysed nor included in the census results.

**Complete and/or sample enumeration methods**

The AC 2009/2010 was conducted using sample enumeration.

**Sample design (if sampling was used)**

The AC used a stratified two-stage sample design. In the first stage, for rural areas, the 120 EAs were selected as the PSUs, and for urban areas, 40 PSUs were selected with probability proportional to size (PPS) from the EAs of the PC 2006. The measure of size was the number of agricultural households. A total sample size of 2 292 agricultural households<sup>3</sup> were selected as SSUs in rural areas and 600 agricultural households were selected in urban areas.

**Data collection method(s)**

Face-to-face interviewing was applied to collect information from holders, using the traditional PAPI method.

**Questionnaire(s)**

Two types of questionnaire were used for the AC 2009/2010, for holdings in the household sector in (i) rural areas and (ii) urban areas. The questionnaires for rural areas included eleven forms,<sup>4</sup> and those for urban areas contained six forms. These included one form for listing the agricultural holders in the selected PSUs. In addition, a community questionnaire was designed for the community survey.

The AC questionnaires covered 13 of the 16 core items<sup>5</sup> recommended for the WCA 2010.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Manual data entry was used for the AC data on the Access screen. Tabulation and analysis were done with SPSS and Microsoft Excel. Editing (such as range and consistency edits) was done manually. The estimation of standard errors (SE), the coefficient of variation (CV), the confidence interval (CI) and the design effect (DEFF) was performed using WesVar.

**11. CENSUS DATA QUALITY**

To minimize non-sampling errors, intensive training of enumerators and sensitization of respondents was undertaken.

**12. DATA DISSEMINATION**

The data were disseminated through printed reports, electronic means (CD-ROMs), workshops and institutional websites. The census results were presented in five volumes: (i) Rural households and crops statistics; (ii) Rural livestock statistics; (iii) Urban crops and livestock statistics; (v) Community profile; and (v) Technical report.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 18-22 September 2017, Nairobi, Kenya. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020kenya/en/>

**Ministry of Finance and Development Planning, Bureau of Statistics.** Publications. In: *Ministry of Finance and Development Planning, Bureau of Statistics* [online]. Maseru, Lesotho. [Cited 10 September]. <http://www.bos.gov.ls/Publications.htm>

**14. CONTACT**

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<sup>3</sup> Prior to the selection of the ultimate units (agricultural holdings), a list frame consisting of all holdings in the selected PSUs were stratified as follows: (i) those with land and livestock; (ii) those with land only; (iii) those with livestock only; and (iv) those without land and livestock.

<sup>4</sup> The AC 2009/2010 questionnaires used for rural households were: Form AC-1 "Rural household listing", Form AC-2 "Rural household members", Form AC-3 "Area measurement", Form AC-4 "Field listing by crop", Form AC-5 "Operation and costs", Form AC-6 "Crop failure and pre-harvest losses", Form AC-7 "Crop cutting", Form AC-8 "Farmer's yield estimate", Form AC-9 Availability and utilization of cereals in the household", Form AC-10 "Livestock inventory" and Form AC-11 "Structural information".

<sup>5</sup> The following core items were not covered by the AC: (i) "Land tenure types on the holding"; (ii) "Presence of aquaculture on the holding"; and (iii) "Other economic production activities of the holding's enterprise".

# LESOTHO – AGRICULTURAL CENSUS 2009/2010 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total agricultural production households</b>	<b>381 731</b>	<b>520 423</b>
Rural households	225 435	514 606
Urban households	156 296	5 817

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Holdings with agricultural land</b>	<b>217 748</b>	<b>514 606</b>
1 parcel	45 608	107 786
2–3 parcels	106 634	252 009
4–5 parcels	41 927	99 086
6–7 parcels	8 379	19 802
8–9 parcels	5 719	13 516
10 parcels and over	9 481	22 407

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Holdings with agricultural land</b>	<b>217 748</b>	<b>514 606</b>
Less than 0.49 ha	47 361	330 083
0.50–0.99 ha	51 358	124 159
1.00–1.49 ha	42 128	43 716
1.50–1.99 ha	27 193	10 382
2.00–2.49 ha	16 888	4 289
2.50–2.99 ha	10 245	1 685
3.00 ha and over	22 575	292

HOLDERS BY SEX AND AGE <sup>1</sup>		Number
<b>Total</b>		<b>225 435</b>
Male		146 821
Female		78 614
Under 18 years		484
18–29 years		13 247
30–39 years		29 772
40–49 years		46 084
50–59 years		54 325
60–69 years		36 716
70 years and over		44 808

HOLDINGS, BY HOUSEHOLD SIZE <sup>1</sup>		Number
<b>Total</b>		<b>225 436</b>
1 person		14 732
2–3 persons		42 917
4–5 persons		83 498
6–7 persons		45 877
8–9 persons		24 041
10 persons and over		14 371

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>1</sup>		Number
<b>Total</b>		<b>1 168 378</b>
Male		592 615
Female		575 763

EMPLOYEES WORKING ON THE HOLDING <sup>1</sup>		Number
<b>Total employees</b>		<b>24 952</b>
Male		21 373
Female		3 579

SOURCES OF IRRIGATION WATER		Holdings
<b>Total</b>		<b>76 765</b>
Dam		2 189
Pond		1 768
River		5 656
Plastic tank		795
Stone tank		10 979
Groundwater		2 923
Private pipe		7 915
Community pipe		44 540

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a</b>	
Cattle	126 599	626 343
Sheep	62 797	1 228 558
Goats	58 511	875 184
Pigs/swine	75 758	83 976
Horses	40 992	69 843
Mules	92 076	2 398
Asses (donkeys)	1 874	136 355
Poultry (1 000 head)	53 294	502

MACHINERY AND EQUIPMENT USED ON THE HOLDING		Units
<b>Total tractors of all kinds</b>		<b>16 724</b>
Ploughs (machine-powered)		146 442
Other (machine-powered)		
Disks		42 611
Planters		70 734
Cultivators		51 577
Sprayers		7 035
Harvesting Machines		2 353
Truck/Van		7 981

TEMPORARY CROPS HARVESTED		Area (ha)
<b>Total</b>		<b>n.a.</b>
Cereals		n.a.
Maize		141 340
Wheat		13 693
Sorghum		33 146
Barley		2 094
Oats		304
Vegetables and melons		239
Potatoes		808
Leguminous crops		n.a.
Beans		26 887
Peas		2 107

PERMANENT CROPS		Number of trees/plants
<b>Total</b>		<b>n.a.</b>
Peach		1 601 256
Apples		52 640
Plums		15 689
Apricots		3 786
Pears		3 471
Quince		421
Raspberry		99
Grapes		30 403
Other		21 611

<sup>1</sup> Data are provided only for holdings in rural areas.

## 1. HISTORICAL OUTLINE

The Census of Agriculture (CA) 2006/2007,<sup>1</sup> to which this metadata review and data refer, is the fourth CA conducted in Malawi. The first one was conducted in 1968/1969, the second in 1980/1981 and the third in 1991/1992.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA was conducted under the authority of the National Statistics Act 1964, which defines the framework for the collection, compilation, analysis and dissemination of statistical information, including the conduct of population and agricultural censuses.

### **Institutional framework and international collaboration**

The CA 2006/2007 was under the responsibility of the National Statistical Office (NSO), specifically its Agriculture and Natural Resources Statistics Division, and was conducted in collaboration with the Ministry of Agriculture and Food Security (MoAFS). The Norwegian Government provided the bulk of the funds. Statistics Norway provided technical assistance for the CA.

### **Census staff**

Field data collection included approximately 600 enumerators, supervised by 60 district supervisors and ten national supervisors.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as livestock numbers.

### **Reference periods:**

- the 2007 crop year (from January to October 2007), for items such as production of crops, inputs for crops;
- the 12 preceding months (in relation to the date of data collection), for items such as the participation of household members in cooperative agricultural work or livestock disposed of; and
- the seven preceding days (in relation to the date of data collection), for food security items and income sources for food consumed.

## 4. ENUMERATION PERIOD

The data collection was carried out in several stages, from January to October 2007.<sup>2</sup>

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural production household (“agricultural household”).

## 6. GEOGRAPHIC COVERAGE

The census covered all rural and peri-urban areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The AC 2006/2007 did not cover agricultural holdings in the non-household sector.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The CA 2006/2007 was a sample-based census conducted in several stages: eight questionnaires were used for holding-level data collection. In addition, a village questionnaire was applied for community-level data collection (for more details, see “Questionnaire(s)” subsection below).

### **Frame**

The Malawi Population and Housing Census (MPHC) 1998 provided the frame of EAs for the CA 2006/2007. The sampling frame of agricultural households was built on the basis of the listing of households from the sampled EAs.

### **Complete and/or sample enumeration methods**

The CA 2006/2007 was conducted based on a sample enumeration.

<sup>1</sup> Originally, this was called the “National Census of Agriculture and Livestock” (NACAL).

<sup>2</sup> Data collection on food security took place during the months of January, June and September 2007, using modules 1 to 4, with the questions asked being almost identical in the three rounds. Data collection for the information on HIV/AIDS took place in June 2007. Data collection for the information from the other modules was undertaken during one of the three enumeration periods.

**Sample design (if sampling was used)**

A two-stage sample design was used, in which the PSUs were the EAs from the MPHIC. The SSUs were the agricultural households. The stratification was done to improve the precision of the estimates by reducing the variance between EAs and within individual EAs. The sample size at EA level was of 15 households.<sup>3</sup> The total sample size was of 25 000 agricultural households nationwide.

**Data collection method(s)**

Face-to-face interviewing was applied to collect information from holders, using the traditional PAPI method. Objective measurement was applied to measure the areas of land parcels and plots.

**Questionnaire(s)**

The CA used a set of nine questionnaires (“modules”). Eight questionnaires were used for holding-level data collection: (1) Household Composition; (2) Land Parcels; (3) Plot Details (information on production and area); (4) Food Security and HIV/AIDS; (5) Marketing; (6) Welfare Monitoring Survey; (7) Livestock Survey; and (8) Estate Survey. The Village Facility Survey questionnaire was used to collect community-level data.

The CA questionnaires covered 12 of the 16 core items<sup>4</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Areas of land parcels and plots were measured using GPS. Scanning technology was applied for data capture. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Data entry was accomplished by scanning the questionnaires using the Eyes and Hands software. Data processing and analysis was done using SPSS.

**11. CENSUS DATA QUALITY**

There was an effort to reconcile the CA 2006/2007 data with the estimates from the MoAFS annual Agriculture Production Estimation Survey (APES); however, the APES estimates were significantly higher and the evaluation was inconclusive.

**12. DATA DISSEMINATION**

The results were published in April 2010 and are available online on the institution’s website.

**13. DATA SOURCES**

**CountrySTAT.** 2019. Food and agriculture data network. In: *CountrySTAT- Malawi* [online]. Rome, Italy. [Cited 6 September 2019]. <http://www.countrystat.org/home.aspx?c=MWI>

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 18-22 September 2017, Nairobi, Kenya. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020kenya/en/>

**National Statistics Office.** 2010. *National Census of Agriculture and Livestock 2006/2007*. Lilongwe, Malawi. (also available at [http://www.nsomalawi.mw/images/stories/data\\_on\\_line/agriculture/NACAL/Nacal%20Report.pdf](http://www.nsomalawi.mw/images/stories/data_on_line/agriculture/NACAL/Nacal%20Report.pdf)).

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<sup>3</sup> Each district was stratified by agro-ecological zones and each EA was stratified by land cultivated (small-scale farmers and large-scale farmers). Sampling of households was undertaken based upon the listing of households, four strata were identified (estate households, large-scale smallholders, small-scale smallholders and landless households). All estates were included in the AC, while landless households were not in the target population. Actual sampling was done among small-scale and large-scale smallholders. It was decided to select five large-scale and ten small-scale households from each EA. Where less than five large-scale households were found, the number of small-scale households sampled was increased correspondingly in order to achieve a total of 15 from each EA.

<sup>4</sup> The following core items were not covered by the CA: (i) “Legal status of agricultural holder”; (ii) “Presence of aquaculture on the holding”; (iii) “Presence of forests and other woodland on the holding”; (iv) “Other economic production activities of the holding’s enterprise”.

# MALAWI – CENSUS OF AGRICULTURE 2006/2007– MAIN RESULTS

LAND TENURE	
	Holdings
<b>Total</b>	<b>2 665 565</b>
Customary land	2 079 140
Leasehold	53 311
Freehold	506 457
Public	26 657

LAND FRAGMENTATION		
	Holdings	Number of parcels
<b>Total</b>	<b>2 665 565</b>	<b>7 686 111</b>
1 parcel	n.a.	3 689 333
2 parcels	n.a.	2 536 417
3 parcels	n.a.	922 333
4 parcels and over	n.a.	538 028

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES	
	Holdings
<b>Total</b>	<b>2 665 565</b>
Less than 0.100 ha	133 278
0.100–0.199 ha	186 590
0.200–0.499 ha	693 047
0.500–0.999 ha	932 948
1.000–1.999 ha	506 457
2.000 ha and over	213 245

LIVESTOCK	
	Head
Cattle	884 132
Sheep	76 613
Goats	2 623 017
Pigs/swine	792 364
Asses (donkeys)	14 191
Poultry (1 000 head)	n.a.
Chickens	7 558
Ducks	429
Turkeys	61
Guinea fowls	282
Other animals	
Rabbits	167 501

TEMPORARY CROPS HARVESTED	
	Area (ha)
<b>Total</b>	<b>n.a.</b>
Cereals	n.a.
Rice	41 952
Millet	16 215
Sorghum	22 746
Root/tuber crops	n.a.
Sweet potatoes	46 122
Irish potatoes	7 026
Cassava	61 787
Leguminous crops	n.a.
Ground beans	9 367
Pigeon peas	13 795
Cow peas	6 138
Beans	11 559
Oilseed crops	n.a.
Groundnuts	143 081
Soya beans	33 720
Sunflower	4 681
Other temporary crops	n.a.
Cotton	45 162
Tobacco	64 895

PERMANENT CROPS	
	Number of trees/plants
<b>Total</b>	<b>n.a.</b>
Tropical and subtropical fruits	n.a.
Mangoes	10 688
Papayas	2 085
Avocados	1 014
Guavas	2 018
Citrus fruits	n.a.
Oranges	721
Lemons	393
Tangerines	406
Pome fruits and stone fruits	n.a.
Peaches	436

## 1. HISTORICAL OUTLINE

The first agricultural census (AC) was carried out in the Republic of Mauritius in 1930 and the second AC in 1940. The AC 2014 was the first AC to be carried out after more than 70 years.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The AC 2014 was conducted under the provisions of the Statistics Act 2000, amended in 2011. The Cabinet approved the conduct of the AC 2014. As per Section 13 of the Statistics Act, the notice to undertake the AC was published in the Government Gazette as General Notice No. 1541 of 2014 on 18 June 2014.

### **Institutional framework and international collaboration**

The AC 2014 was conducted by Statistics Mauritius (SM) in collaboration with various organizations: the Ministry of Agro Industry and Food Security (MAIFS), the Food and Agricultural Research and Extension Institute (FAREI), the Government Printing Office (for printing the survey documents), and the Ministry of Finance and Economic Development (for the budget). The Statistics Board approved all questionnaires used for the AC.

FAO provided technical assistance for the design, conduct and data analysis of the AC 2014.

### **Census staff**

The census office staff was composed of 19 officers. Field personnel comprising approximately 336 officers was mobilized for data collection, including chief supervisors, senior supervisors, supervisors and enumerators.

## 3. REFERENCE DATE AND PERIOD

### **Reference days:**

- the end of March 2014, for inventory items such as on the number of persons engaged in the farms' work (for the business questionnaire);
- 30 June 2014, for the number of livestock.

**Reference period:** the 12-month period preceding the census (from 1 July 2013 to 30 June 2014), for items on crops, labour, livestock sold, etc.

## 4. ENUMERATION PERIOD

The AC 2014 was carried out from July to December 2014, in three phases, depending on the type of holding: (i) for agricultural businesses, from July to December 2014; (ii) for "household farms", from July to September 2014; and (iii) for "private households", from October to November 2014.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered the agricultural (crop and livestock production) activities. Information on the existence of forestry, aquaculture, subsistence fishing and other gainful activities on the holding were also collected.

The **statistical unit** was the agricultural holding, defined as "an economic unit of agricultural production under single management, comprising all livestock kept and all land used for agricultural production purposes without regard to title, legal form or size". The AC covered both the holdings: (i) in the household sector, or "agricultural businesses" (namely corporations, NGOs, government institutions etc.); and (ii) most commonly, those in the non-household sector. In the household sector, a distinction was made between "household farms" and "private households" (see also section 7).

## 6. GEOGRAPHIC COVERAGE

The AC 2014 covered the entire area of the Islands of Mauritius and Rodrigues.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were established for a "household farm" (included in Phase II of the census; see section 8 below):

- any household cultivating a piece of land, on own account, and for commercial production (at least five perches);
- any housing unit having a kitchen garden (at least five perches); and
- any housing unit having fruit trees on the premises with a certain cut-off: breadfruit, lychee, mango (at least five trees), lemon, mandarin, coconut, guava, other citrus, mixed fruit trees (at least ten trees), banana, pawpaw (at least 20 trees), pineapple, lychee, vegetables, fruits-other, crops-other (at least five perches);
- all honey producers and all deer farms; and
- all units raising livestock (including poultry).

The holdings below the thresholds were classified as "private households" and were covered in Phase III of the census.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The AC 2014 was conducted in three phases, depending on the type of the holding: (i) for agricultural businesses, from July to December 2014; (ii) for "household farms", from July to September 2014 (using a long form); and (iii) for "private households", from October to November 2014 (using a short form).

**Frame**

The frame for the holdings in the non-household sector consisted of a list of agricultural establishments obtained from the MAIFS, the FAREI and other administrative sources. The sampling frame for the holdings in the household sector was built based on administrative data sources and the information collected in the 2011 Housing and Population Census.

**Complete and/or sample enumeration methods**

For the AC 2014, a complete enumeration was carried out for the holdings in the non-household sector. Sample enumeration was undertaken for those in the household sector.

**Sample design (if sampling was used)**

The sample design for “household farms” was a stratified random sampling. The sample comprised 10 339 farms, representing 38 percent of the estimated number of “household farms”.

The sample design for “private households” was a stratified cluster sampling. A sample of 32 clusters (25 for Mauritius and 7 for Rodrigues) was drawn and each “private household” in the selected cluster was interviewed. A total sample of 8 778 private households was drawn. This represented approximately 2 percent of households in the Island of Mauritius and approximately 13 percent in the Island of Rodrigues.

**Data collection method(s)**

The data collection for the AC 2014 was carried out using: (i) the mail-out/mail-back method for agricultural businesses; and (ii) the PAPI method for holdings in the household sector.

**Questionnaire(s)**

Three types of questionnaires were used in the AC 2014: (i) a business questionnaire (CA1) – for holdings in the non-household sector; (ii) a farm questionnaire (CA3) – for “household farms” (using a long form); and (iii) a household questionnaire (CA4) – for “private households” (using a short form).

All 16 core items recommended by FAO were covered in the AC 2014.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

The entire data processing exercise (except for data capture, which was contracted out) was done in-house using the CSPro software. The coded questionnaires were sent in batches to the service provider, which ran validation and consistency checks. Validation reports were then submitted to SM after the data capture. Data files in text and Microsoft Excel formats were made available to SM after working on the validation reports. The tables with census results were compiled in-house using the CSPro software.

**11. CENSUS DATA QUALITY**

During the data collection stage, possible sources of errors were reduced by: (a) intensive training of field staff, which was provided with a detailed instruction manual; (b) well-designed questionnaires; (c) close supervision of the fieldwork; (d) re-interviews being conducted to clear queries and ensure corrections of the data collected; and (e) intensive editing and consistency checks carried out in the office, during which outliers were flagged and reported to supervisory staff for call-backs if necessary.

**12. DATA DISSEMINATION AND USE**

The AC 2014 results were released through printed reports, the SM website and dissemination workshops. Preliminary census results were published in October 2015. Three seminars were organized to disseminate the main results of the AC 2014 and thematic analyses on gender, land, crop and livestock.

**13. DATA SOURCES**

**Statistics Mauritius.** 2018.<sup>1</sup> *2014 Census of Agriculture (AC2014). Methodological Report.* Port Louis, Mauritius. (also available at <http://statsmauritius.govmu.org/English/CensusandSurveys/Documents/CA2014/Methodology-CA2014.pdf>).

**14. CONTACT**

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<sup>1</sup> See also the following: (i) Statistics Mauritius. 2015. *2014 Census of Agriculture – Main results*; and (ii) Statistics Mauritius. 2015. *2014 Census of Agriculture – Tables*. The documents are available at [http://statsmauritius.govmu.org/English/CensusandSurveys/Documents/CA2014/CA2014-Island\\_of\\_Mauritius\(IOM\).xls](http://statsmauritius.govmu.org/English/CensusandSurveys/Documents/CA2014/CA2014-Island_of_Mauritius(IOM).xls)



# MAURITIUS – AGRICULTURAL CENSUS 2014 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>23 456</b>	<b>66 449</b>
Household sector	23 343	13 009
Non-household sector	113	53 440

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>23 456</b>	<b>66 449</b>
Legal ownership	n.a.	56 177
Rented from others	n.a.	9 161
Land leased from government	n.a.	4 147
Land rented/leased from others	n.a.	5 014
Other form of tenure	n.a.	1 111

DISTRIBUTION OF HOLDINGS IN THE HOUSEHOLD SECTOR BY LAND SIZE CLASSES		
	Holdings	
<b>Total</b>	<b>23 343</b>	
Less than 0.02 ha	4 355	
0.02–0.11 ha	4 508	
0.11–0.21 ha	2 267	
0.21–0.42 ha	3 429	
0.42–2.11 ha	7 710	
2.11–4.22 ha	766	
4.22–10.55 ha	256	
10.55 ha and over	52	

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>23 456</b>	<b>66 449</b>
Agricultural land	n.a.	54 526
Arable land	n.a.	11 092
Land under temporary crops	n.a.	9 685
Land under temporary meadows	n.a.	744
Land temporarily fallow	n.a.	663
Land under permanent crops	n.a.	40 946
Permanent meadows and pastures	n.a.	2 488
Forest and other wooded land	n.a.	5 125
Other land	n.a.	6 798

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		
	Number	
<b>Total</b>	<b>88 592</b>	
Male	45 327	
Female	43 265	
Engaged in agricultural activities on the holding	40 355	
Male	24 622	
Female	15 733	

EMPLOYEES WORKING ON THE HOLDING		
	Number	
<b>Total employees</b>	<b>29 041</b>	
Male	13 317	
Female	15 724	

HOUSEHOLD SECTOR HOLDINGS BY MAIN PURPOSE OF PRODUCTION	
	Holdings
<b>Total producing mainly for</b>	<b>23 343</b>
Home consumption	3 693
Sale	19 650

HOLDERS, BY SEX AND AGE	
	Number
<b>Total</b>	<b>25 122</b>
Male	18 149
Female	6 973
12–19 years	38
Male	30
Female	8
20–29 years	662
Male	502
Female	160
30–39 years	3 338
Male	2 451
Female	887
40–49 years	5 985
Male	4 437
Female	1 548
50–59 years	6 872
Male	5 043
Female	1 829
60–69 years	5 736
Male	3 922
Female	1 814
70–79 years	2 083
Male	1 467
Female	616
80–89 years	393
Male	287
Female	106
90–99 years	15
Male	10
Female	5

LIVESTOCK	
	Heads
Cattle	24 576
Goats	61 049
Pigs/swine	37 490
Poultry (1 000 head)	4 068
Chickens	4 041
Ducks	18
Turkeys	0.5
Other poultry	9
Other animals	n.a.
Deer	33 794
Insects	
Bees (hives)	7 270

## 1. HISTORICAL OUTLINE

The first census of agriculture (CA) during the colonial period was conducted in 1951, followed by a second one in 1961, and a third CA in 1999/2000 (this was the first CA in the post-independence period). The CA 2009/2010,<sup>1</sup> to which the metadata and data presented here refer, is the fourth agricultural census to be carried out in the Republic of Mozambique.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The census legal framework includes:

- The Statistics Act (Law No. 7/96), which bestows on the National Institute of Statistics (INE) the responsibility for the collection, production and dissemination of official statistics in the country. INE has the power to delegate responsibility to the government ministries and institutions that, it deems, have the capacity to collect and publish official statistics, including the Ministry of Agriculture and Food Security (MASA). It is under this delegated authority that MASA produces and publishes official agricultural statistics.
- Mozambique's Statistics Law (2005).
- Presidential Decree 9/96 of 28 August 1996 and Decree 34/96 of 1 July 1996.

There is no specific primary legislation regulating the conduct of ACs.

### **Institutional framework and international collaboration**

INE is the government agency responsible for the CA. The CA 2009/2010 was conducted by INE, in partnership with MASA. The technical assistance was provided by FAO. The Chair of the 2009/2010 CA Committee was the Vice-President of INE, and the Vice-Chair was the National Director of Economics, from MASA.

### **Census staff**

The census staff involved in the CA 2009/2010 included 781 persons, of which 11 supervisors, 324 enumerators and 546 other staff.

## 3. REFERENCE DATE AND PERIOD<sup>2</sup>

**Reference day:** the day of the interview, for stock items such as livestock numbers.

### **Reference periods:**

- the 2009/2010 crop year (from September 2009 to August 2010), for temporary crops and agricultural practices;
- the last 12 months preceding the day of the interview, for permanent crops, livestock, aquaculture, food security, farm inputs and agricultural services.

## 4. ENUMERATION PERIOD

The data collection activities for the agriculture module in the Census of Population and Housing (CPH) 2007 (which served as a core module for the CA 2009/2010) was conducted from 1 August to 15 August 2007. The data collection for supplementary modules was carried out from January to November 2010 in all provinces of the country. The enumeration period was extended to August 2011, as the extreme wet weather resulted in a need to postpone the collection of production data in the northern part of the country.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). Detailed information on the aquaculture activities associated with an agricultural holding were also collected.

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production under single management based on the use of land for agricultural production, without regard to the legal aspects of ownership (title) or size.

## 6. GEOGRAPHIC COVERAGE

The CA 2009/2010 covered the entire country, including both urban and rural areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No exclusions or cut-off thresholds were applied in the CA 2009/2010.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The modular approach was used in the CA, covering six supplementary modules: (i) Crops; (ii) Livestock; (iii) Farm labour; (iv) Aquaculture; (v) Food security; and (vi) Agricultural practices and agricultural services. The CPH 2007 included an agriculture module that served as a core module for the CA 2009/2010.<sup>3</sup>

<sup>1</sup> *Censo Agro-Pecuário 2009/2010*.

<sup>2</sup> The reference date and period were presented as they were used for supplementary modules. The agriculture-related items collected in the CPH 2007 (used as frame items for the CA 2009/2010) referred to the day of the interview.

<sup>3</sup> This agriculture module served as a core module for the CA 2009/2010.

**Frame**

The frame consisted of all agricultural households identified during the CPH 2007. Based on the CPH data, 45 279 EAs were delineated for the CA 2009/2010. A special list frame was developed to identify the large farm holdings in each district. A total of 884 large farms were enumerated in the CA 2009/2010. These farms were excluded from the sampling frame, to avoid duplication.

**Complete and/or sample enumeration methods**

Sample enumeration was used for supplementary modules.

**Sample design (if sampling was used)**

Two-stage sampling was used for supplementary modules. A sample of more than 40 000 farm holdings (approximately 35 020 small holdings and 3 500 medium-size holdings) was selected. Large holdings were surveyed in their entirety (100 percent, throughout the country). During the first sampling stage, the EAs were selected systematically, with probability proportional to size (PPS) within each stratum (district, urban and rural). The measures of size were based on the number of agricultural households in the EA from the CPH 2007. All of the medium-sized holdings identified in the listing were included in the sample with certainty in the second sampling stage. A random systematic sample of ten small holdings was selected, with equal probability in each sampled EA.

**Data collection methods**

The collection of data was carried out using the CAPI method (with notebooks).

**Questionnaire(s)**

There were two types of electronic questionnaires: one for small- and medium-sized agricultural households and one for large farms. The questionnaires enabled data collection for six supplementary modules (see this section, above).

All 16 core items recommended in the WCA 2010 were covered in the CA.

**9. USE OF TECHNOLOGY**

The CAPI method, with notebooks, was used for census data capture and GPS was used to measure the crop areas in the CA 2009/2010.

**10. DATA PROCESSING AND ARCHIVING**

Data entry, including preliminary data edits, was done in the field on notebooks by the enumerators, at the time of the interview. The data were then transferred electronically in email attachments to the data processing centre, where they were subjected to a second editing process. Each questionnaire was backed up on a memory stick and then backed up a second time (a backup to the backup). The software packages used were CPro, SPSS and STATA, among others.

**11. CENSUS DATA QUALITY**

To ensure that the census data were accurate, control procedures were set up throughout data collection and processing to control sampling and non-sampling errors.

**12. DATA DISSEMINATION**

The CA 2009/2010 data were published in the form of printed publications, in electronic format such as on a CD-ROM, as well as on the INE and CountrySTAT websites. Preliminary census results were disseminated in May 2011, the final results in November 2011, and the thematic studies in November 2012. Three workshops were held: for the dissemination of the preliminary data, of the final data and of the results of the thematic studies.

**13. DATA SOURCES**

**Instituto Nacional De Estatística.** 2011. *Censo Agro-Pecuário 2009 – 2010, Resultados Definitivos*. Maputo, Mozambique. (also available at [http://mozambique.countrystat.org/fileadmin/user\\_upload/countrystat\\_fenix/congo/docs/censo\\_agr\\_pecuario2009\\_%202010.pdf](http://mozambique.countrystat.org/fileadmin/user_upload/countrystat_fenix/congo/docs/censo_agr_pecuario2009_%202010.pdf).)

**14. CONTACT**

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 Website: INE – <http://www.ine.gov.mz>  
 Website: CountrySTAT – <http://www.countrystat.org/home.aspx?c=MOZ>  
 Website: MASA – <http://www.masa.gov.mz/>

## MOZAMBIQUE – CENSUS OF AGRICULTURE 2009/2010 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>3 827 797</b>	<b>5 633 850</b>
Small holdings	3 801 259	5 428 571
Medium holdings	25 654	130 651
Large holdings	884	74 628

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>3 827 797</b>	<b>5 633 850</b>
Holdings without land	150 257	
Holdings with land	3 677 540	5 633 850
Less than 0.1 ha	44 142	n.a.
0.1–0.2 ha	37 150	n.a.
0.2–0.5 ha	300 007	n.a.
0.5–1 ha	883 630	n.a.
1–2 ha	1 369 801	n.a.
2–3 ha	580 475	n.a.
3–4 ha	246 032	n.a.
4–5 ha	100 948	n.a.
5–10 ha	99 630	n.a.
10–20 ha	4 344	n.a.
20–50 ha	844	n.a.
50–100 ha	62	n.a.
100–200 ha	22	n.a.
200–500 ha	24	n.a.
500–1 000 ha	6	n.a.
1 000 ha and over	15	n.a.
Not specified	10 408	n.a.

HOLDERS IN SMALL AND MEDIUM HOLDINGS, BY SEX AND AGE	
	Number
<b>Total</b>	<b>3 826 913</b>
Male	2 775 234
Female	1 051 679
10–29 years	837 585
Male	620 081
Female	217 504
30–39 years	1 071 342
Male	797 896
Female	273 446
40–49 years	797 181
Male	597 252
Female	199 929
50–59 years	550 109
Male	382 006
Female	168 103
60–69 years	353 875
Male	233 502
Female	120 373
70–79 years	160 430
Male	108 359
Female	52 071
80–89 years	49 683
Male	32 058
Female	17 625
90 years and over	6 708
Male	4 080
Female	2 628

EMPLOYEES WORKING ON THE HOLDING	
	Number
<b>Total</b>	<b>4 016 121</b>
Male	2 138 388
Female	1 877 733
Full-time workers	452 950
Male	275 685
Female	177 265
Temporary workers	3 563 171
Male	1 862 703
Female	1 700 468

LIVESTOCK		
	Number	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	205 612	1 277 044
Sheep	41 320	220 391
Goats	791 322	3 907 483
Pigs	434 216	1 340 712
Asses (donkeys)	9 492	18 337
Poultry (1 000 head)	n.a.	n.a.
Chickens	2 451 679	24 690
Ducks	317 044	1 882
Geese	3 193	16
Turkeys	23 406	114
Other animals	n.a.	
Rabbits and hares	19 618	112 897
Other	85	

IRRIGATION	
	Holdings
<b>Total holdings with irrigated land</b>	<b>201 747</b>

MACHINERY AND EQUIPMENT USED ON THE HOLDING	
	Holdings
Total tractors of all kind	59 467
Ploughs (machine-powered)	69 017
Other (machine-powered)	n.a.
Trailers	12 480
Trucks	110 635
Motor pumps	7 659
Electric pump	2 973
Reaper	23
Furrow	53
Mini tractor	12

## 1. HISTORICAL OUTLINE

The Census of Agriculture (CA) 1994/1995 was the first CA undertaken since the independence of Namibia. It was followed by the CA 2004/2005.<sup>1</sup> The CA 2013/2014, to which the present metadata review and data refer, was the third census to be conducted in the country.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The legal basis for conducting the CA 2013/2014 was provided by the Statistics Act No. 9 of 2011. It provided a mandate for the Namibia Statistics Agency (NSA) to collect and compile the statistics and to keep information confidential.

### *Institutional framework and international collaboration*

The CA 2013/2014 was carried out by the NSA, in collaboration with the Ministry of Agriculture, Water and Forestry (MAWF). A planning team consisting of experts in the subject matter from the NSA and MAWF, reporting to the project manager, was responsible for the day-to-day running of the census under the existing Memorandum of Understanding (MoU) between the two institutions. The project manager reported to the Statistician-General (SG), also referred to as the Chief Executive Officer (CEO) of the NSA. A monitoring team that consisted of the Executive of the NSA strategically guided the census operations.

The Food and Agriculture Organization of the United Nations (FAO) provided technical assistance. The African Development Bank (AfDB) provided some financial support for the CA compilation.

### *Census staff*

The census staff for field data collection included 366 enumerators and 156 supervisors, organized in teams of five members each (consisting of four enumerators and one supervisor).

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as livestock numbers.

### *Reference periods:*

- from October 2013 to September 2014, for crops except wheat, and July 2013 to February 2014, for wheat;
- the 12 preceding months (in relation to the date of data collection), for the population dynamics of livestock.

## 4. ENUMERATION PERIOD

The first phase (including listing) was conducted from February 2014 to May 2014. The data collection commenced in February 2014, starting in three regions (Zambezi, Kavango East and Kavango West) because of the early rains and cultivation occurring there. Subsequently, it proceeded to the rest of the regions. The second phase (crop cutting) started in May 2014 and ended in July 2014.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production), as well as forestry activities, aquaculture and capture fisheries activities.

The **statistical unit** was the agricultural holding, defined as “an economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for own account agricultural production purposes, without regard to title, legal form, or size”. The CA covered both holdings in the household sector (“communal sector”) and in the non-household sector (“commercial sector”).

## 6. GEOGRAPHIC COVERAGE

The CA 2013/2014 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No cut-off thresholds and other exclusions were applied in the CA.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The CA 2013/2014 was a sample-based census conducted in two phases (see section 4 above).

### *Frame*

The main source of the frame for the EAs was the Population Census (PC) 2011. A question for the identification of agricultural households was included in the PC questionnaire.

The list of the holdings from the non-household sector was provided by the Ministry of Lands and Resettlement.

<sup>1</sup> The CA 2004/2005 was carried out; however, the results could not be published because of technical issues with the data.

**Complete and/or sample enumeration methods**

The holdings in the household sector were enumerated using sampling, whereas the holdings in the non-household sector were enumerated with a complete enumeration basis.

**Sample design (if sampling was used)**

The CA 2013/2014 used a stratified two-stage sample design for the household sector. In the first stage, a sample of 1 025 PSUs, the EAs, out of 2 663 PSUs was selected with probability proportional to size (PPS). The size measure used was the number of agricultural households, which was derived from the questions included in the 2011 PC. A total sample of 10 550 agricultural households was drawn to obtain reliable estimates at the regional level for the most important variables. In general, ten agricultural households were sampled from each of the selected PSUs.

**Data collection method(s)**

Face-to-face interviews using the CAPI method with notebooks was applied for the household sector, while for the non-household sector, the mail-out/mail-back method was used.

**Questionnaire(s)**

The CA used a detailed questionnaire. The CA questionnaire covered 15 of the 16 core items<sup>2</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

CAPI was used for data collection. Script using Bluetooth was applied for data transmission between notebooks (from enumerators) and laptops (to supervisors). Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

The CAPI data entry application was designed using CSPro 5.0. Manual data entry was used for crop cutting. The STATA software was used for analysis and tabulations. Primary data edits and data cleaning were done in CSPro. Secondary data editing and data cleaning was done in Stata 13. For tabulation (summary tables), Stata 13 and Microsoft Excel were used. Data entry for holdings in the non-household sector was done manually, using CSPro and SPSS for analysis.

**11. CENSUS DATA QUALITY**

The same team responsible for the subject matters conducted the training for the enumerators, held at various training centres across the country, on CAPI and sampling aspects, to ensure consistency. The field staff was closely supervised by the regional statistician and by the monitoring team from the head office. Data transmission in the field (from enumerators to supervisors using notebooks) was done in the presence of well-trained supervisors, who in turn transmitted the data to the headquarters. The first transmission was done in the presence of staff from the headquarters.

Estimations of sampling errors were calculated for holding areas, per main crops and livestock.

**12. DATA DISSEMINATION**

The census results were released through printed reports, the NSA's website, and dissemination during workshops. Preliminary census results were published in February 2014. A summary statistical report with final results was published in November 2015. The census data were disseminated at the national and regional level and are available online through the NSA website.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 18-22 September 2017, Nairobi, Kenya. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020kenya/en/>

**Namibia Statistics Agency.** 2019. Publications. In: *Namibia Statistics Agency* [online]. Windhoek, Namibia. [Cited 8 August 2019]. <https://nsa.org.na/page/publications/>

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Website: <http://www.nsa.org.na>

<sup>2</sup> The core item not covered by the CA was "Main purpose of production of the holding".

# NAMIBIA – CENSUS OF AGRICULTURE 2013/2014 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>162 821</b>	<b>9 811 517</b>
Household sector (communal farms)	159 484	463 248
Non-household sector (commercial farms)	3 337	9 348 269

DISTRIBUTION OF COMMUNAL FARMS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>159 484</b>	<b>463 248</b>
Less than 0.5 ha	8 834	n.a.
0.51–1.0 ha	6 050	n.a.
1.01–2.0 ha	12 148	n.a.
2.01–5.0 ha	32 569	n.a.
5.01–10.0 ha	40 974	n.a.
10.01 ha and over	58 909	n.a.

HOLDINGS IN THE HOUSEHOLD SECTOR, BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>159 484</b>
1 person	11 091
2–3 persons	33 858
4–5 persons	40 664
6–9 persons	54 237
10 persons and over	19 634

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>907 714</b>
Male	417 577
Female	490 137
Engaged in agricultural activities on the holding	609 211
Male	285 095
Female	324 116

EMPLOYEES WORKING ON THE HOLDING	
	Number
<b>Total employees</b>	<b>115 704</b>
Male	62 998
Female	52 706
Paid employees	112 310
Male	60 881
Female	51 429
Unpaid employees	3 394
Male	2 117
Female	1 277

LIVESTOCK	
	Head
Cattle	1 140 769
Sheep	793 013
Goats	1 759 086
Pigs/swine	87 783
Horses	18 242
Asses (donkeys) and mules	161 738
Poultry (1 000 head)	n.a.
Chickens	1 438
Ducks	36
Geese	6
Turkeys	0.2
Guinea fowls	4
Pigeons	19
Other	8

IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>1 111</b>	<b>5 068</b>

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Total tractors of all kind	890	1 463
Combine harvesters	86	115
Ploughs (machine-powered)	356	480
Other machine (machine powered)	n.a.	
Trailer	942	1 579
Harrow/cultivator	78	98
Weeder	53	72
Planter	158	185
Sprayer	186	428

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	n.a.	n.a.
Maize	n.a.	41 521
Wheat	7	187
Rice	1	n.a.
Sorghum	24 671	7 458
Millet	129 037	421 241
Vegetables and melons	n.a.	n.a.
Onions	94	136
Watermelons	72	109
Tomatoes	88	1 171
Potatoes	18	26
Pumpkin	79	123
Squash	14	7
Cabbages	61	1 248
Carrots	70	38
Lettuce	20	6
Melons	34	25
Spinach	32	n.a.
Cauliflower	12	607
Cucumbers	22	1 006
Spinach	36	29
Broccoli	10	609
Other	11	89
Oilseed crops	n.a.	n.a.
Sunflower	11	148
Groundnuts	15	390
Leguminous crops	n.a.	n.a.
Beans	61	845
Spices and aromatic crops	n.a.	n.a.
Chili peppers	24	5
Other temporary crops	n.a.	n.a.
Fodder	37	3 769

## 1. HISTORICAL OUTLINE

The Census of Agriculture (CA) 2004–2008<sup>1</sup> is the third CA to be carried out in Niger. Previous agricultural censuses were conducted in 1970 and 1980.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

Presidential Decree No. 2002-178/PRN/MDA of 18 July 2002 provided the legal basis for the conduct of the CA 2004–2008. It established the institutional framework of the CA (see below).

### *Institutional framework and international collaboration*

Under the legal framework, four different bodies were established for the implementation of the census: (i) the Central Census Bureau, which was responsible for the implementation of the census; (ii) the Census National Committee, which undertook the overall coordination of the CA; (iii) the Census Technical Committee (CTC), which was in charge of the methodological aspects and field operation design; the chairperson of the CTC was the Secretary General of the Ministry of Agricultural Development; and (iv) Census Regional Committees, in charge of the coordination of census activities at regional level.

The government of Niger, the European Union (EU) and the World Bank provided funds for the CA. FAO provided technical assistance.

### *Census staff*

The census staff involved in the CA amounted to 370 people, including 313 enumerators, 36 supervisors and 21 coordinators at the regional and the national level.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as livestock numbers.

**Reference period:** two reference periods were used, which corresponded to two crop seasons: from May 2005 to September 2006 and from May 2006 to September 2007.

## 4. ENUMERATION PERIOD

The data collection was carried out in phases, namely: (i) for the core module, from September 2004 to March 2005; (ii) for supplementary and “thematic” modules, from 2005 to 2007. Nomadic and transhumant livestock enumeration was conducted in a separate period and with a different methodology.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). The CA covered different types of livestock systems, including sedentary pastoral, nomadic and transhumant grazing systems.

The **statistical unit** was the agricultural (farm) household, defined as “a household where any of its members practices agriculture without being only an employee in agriculture”.

## 6. GEOGRAPHIC COVERAGE

The CA 2004–2008 covered the entire territory of the country, excluding urban areas.

## 7. CUT-OFF THRESHOLDS AND OTHER EXCLUSIONS

The holdings in the non-household sector were not included in the CA.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The CA 2004–2008 adopted a modular approach, with a core module and nine supplementary/thematic modules (see also the “Questionnaire(s)” subsection below).

### *Frame*

The main source of sampling frame consisted in the EAs from the Population Census (PC) 2001. Approximately 7 500 out of 8 000 EAs were included. The PC also provided the list of households involved in agricultural activities. In addition, the livestock frame included all known water points and transhumant routes.<sup>2</sup>

<sup>1</sup> *Recensement Général de l'Agriculture et du Cheptel*. The CA 2004–2008 was the first CA that covered the overall agricultural sector (crop and livestock). The previous CAs covered only crop production.

<sup>2</sup> The inventory of water points, wells, permanent ponds, passages, tracks and historical chokepoints and crossings used by nomadic and transhumant herds was conducted for the enumeration of nomadic and transhumant livestock, such as camels, goats, and cattle.



**Complete and/or sample enumeration method(s)**

A complete enumeration of households within the 7 465 EAs from the PC which engaged in agricultural activity was done to identify agricultural households.

The supplementary/thematic modules were conducted using sample enumeration.

**Sample design (if sampling was used)**

A stratified two-stage sampling design was used for the supplementary/thematic modules. The 36 departments served as strata. A sample was then drawn at the departmental level. The EAs were the PSUs and households were the SSUs, and were selected at EA level with an equal probability. According to the module, relevant samples of EAs were designed. In total, approximately 13 000 households were selected for the crop production module and 12 000 households for the animal production module.

**Data collection method(s)**

Face-to-face interviewing was applied to collect census information, using the traditional PAPI method.

**Questionnaire(s)**

The CA used 19 questionnaires for the core and supplementary/thematic modules. The questionnaires addressed topics such as: irrigated and rainfed crops, crop farm productivity, livestock numbers by type of animal, sedentary, nomadic, and transhumant livestock, livestock productivity, food security, support for farmers' organizations.

The CA questionnaires covered 11 of the 16 core items<sup>3</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

GPS devices were applied for georeferencing the agricultural households and the plots. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Data entry, editing and imputation were undertaken using the CPro software. The SPSS software was used for data analysis and Microsoft Excel was used for tabulation.

**11. CENSUS DATA QUALITY**

Efforts were made to minimize non-sampling errors through thorough preparation of training materials and formation of census personnel, and by making quality consciousness an important part of the work of enumerators and supervisors.

**12. DATA DISSEMINATION**

The results of the CA 2004-2008 were disseminated through printed reports and brochures, CD-ROMs, the websites of CountrySTAT-Niger and of the National Institute of Statistics' websites,<sup>4</sup> as well as upon request.

**13. DATA SOURCES**

**CountrySTAT.** 2019. Food and agriculture data network. in: *CountrySTAT-Niger* [online]. Rome, Italy. [Cited 6 September 2019]. <http://www.countrystat.org/home.aspx?c=NER>

**FAO.** 2019. Regional Workshop on the Operational Guidelines of the World Programme for the Census of Agriculture 2020 (WCA 2020). 17-21 June 2019, Bujumbura, Burundi. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020burundi/en/>

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<sup>3</sup> The following core items were not covered by the CA: (i) "Legal status of agricultural holder"; (ii) Main purpose of production of the holding"; (iii) "Presence of aquaculture on the holding"; (iv) "Presence of forests and other woodland on the holding"; and (v) "Other economic production activities of the holding's enterprise".

<sup>4</sup> The website of CountrySTAT-Niger: <https://countrystat.org/home.aspx?c=NER>; the website of the National Institute of Statistics: <http://www.stat-niger.org/NigerInfo/rgac/indexe.html>

# THE NIGER – CENSUS OF AGRICULTURE 2004–2008 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	UAA (ha)
<b>Total</b>	<b>1 627 294</b>	<b>6 534 682</b>
Individual management	n.a	1 721 515
Collective management	n.a	4 813 167

DISTRIBUTION OF HOLDERS, BY SEX		
	Number	UAA (ha)
<b>Total</b>	<b>1 627 294</b>	<b>6 534 680</b>
Male	1 519 144	6 087 048
Female	108 150	447 632

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX NUMBER	
	Number
<b>Total</b>	<b>10 108 795</b>
Male	5 111 760
Female	4 997 034
Engaged in agricultural activities on the holding	4 842 197
Male	2 341 488
Female	2 500 709

HOLDERS, BY SEX AND AGE	
	Number
<b>Total</b>	<b>1 627 294</b>
Male	1 519 144
Female	108 150
Under 25 years	94 441
Male	84 790
Female	9 651
25–34 years	397 998
Male	376 607
Female	21 391
35–44 years	446 858
Male	422 074
Female	24 786
45–54 years	312 508
Male	291 375
Female	21 132
55–64 years	218 278
Male	200 498
Female	17 780
65 years and over	157 210
Male	143 800
Female	13 410

HOLDINGS BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>1 627 294</b>
Less than 3 persons	183 814
3–5 persons	657 436
6–10 persons	607 848
11–15 persons	135 852
16 persons and over	42 344

LIVESTOCK	
	Head
Cattle	7 336 088
Sheep	9 192 017
Goats	11 238 268
Horses	230 174
Asses	1 477 073
Camels	1 565 420
Poultry (1 000 head)	12 196
Chickens	6 674
Ducks	428
Pigeons	1 496
Guinea fowl	3 194
Other poultry	405

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>583 119</b>	<b>6 222 846</b>
Cereals	n.a.	4 562 431
Millet	n.a.	3 567 332
Sorghum	n.a.	964 780
Rice	n.a.	23 925
Fonio	n.a.	3 827
Maize	n.a.	2 567
Leguminous crops	n.a.	1 276 217
Cowpeas	n.a.	1 255 277
Bambara beans	n.a.	20 940
Oilseed crops	n.a.	n.a.
Sesame	n.a.	23 194
Peanuts	n.a.	308 759
Other temporary crops	n.a.	52 245

## 1. HISTORICAL OUTLINE

The first census of agriculture (CA) was conducted in the Republic of Senegal in 1998/1999. In 2013, the country carried out the fourth General Census of Population and Housing (GCPH), combined with the second CA. The metadata review and the data presented below refer to the General Census of Population and Housing, Agriculture and Livestock<sup>2</sup> (RGPHAE) 2013.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The census legislation included:

- Law No. 2004-21 of 21 July 2004, amended by Law No. 2012-03 of 3 January 2012 on the organization of statistical activities in Senegal. This law defines the principles of official statistics and the institutional framework governing the activities of the departments and agencies responsible for the development, production and dissemination of official statistics. According to the legislation, the National Statistical Council approves, *inter alia*, the multiannual statistical programme. This programme must take into account the requirement to carry out a census of the population and an agricultural census every ten years.
- Prime Minister's Orders No. 7178 of 12 August 2010 and No. 006654 of 4 September 2012, which set up the institutional framework for the RGPHAE 2013.

### **Institutional framework and international collaboration**

The Prime Minister's Order No. 7178 designated the Steering Committee as the supervisory body of this project and the National Agency of Statistics and Demography (ANSD) as its implementing structure. The Prime Minister's Order No. 006654 of 4 September 2012 established the National Steering Committee (NOC) and the National Technical Committee (CTN) as its technical bodies.

The ANSD conducted the RGPHAE 2013 with the technical and financial support of the United Nations Population Fund (UNFPA) and the Brazilian Institute of Geography and Statistics (IBGE), which lent 20 200 personal digital assistants (PDAs) to the ANSD to conduct the census. The National Institute of Statistics of Cape Verde (INECV) provided technical support.

### **Census staff**

This RGPHAE mobilized 17 165 enumerators, 2 566 controllers, 608 supervisors and 150 cartographers. To collect the information in the field, 225 ICT coordinators were recruited to assist the field staff.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of enumeration, for inventory items such as on livestock and agricultural machinery, and assets.

**Reference period:** the agricultural year 2012/2013, for the total land area operated, the number of plots operated, the area of the holding, the lands operated by women, etc.

## 4. ENUMERATION PERIOD

Data collection took place from 19 November to 9 December 2013 throughout the country. However, in large cities such as Dakar, collection continued for two more days.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

### **Census scope**

The RGPHAE 2013 covered all households in the country. A specific module was devoted to agriculture, to identify households with at least one member engaged in own-account agricultural activities. Agricultural activities (in a broad sense) were defined as activities regarding the production of crops, livestock raising, aquaculture, capture fisheries and forestry.

### **Statistical unit**

The statistical unit for the RGPHAE agriculture module was the agricultural production household, defined as "a household with at least one member practicing agricultural activities for own account".

## 6. GEOGRAPHIC COVERAGE

The 2013 RGPHAE covered the entire national territory.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Holdings in the non-household sector were not covered in the RGPHAE.

<sup>1</sup> General Census of Population and Housing, Agriculture and Livestock 2013 – Agriculture Module.

<sup>2</sup> Recensement Général de la Population et de l'Habitat, de l'Agriculture et de l'Élevage.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

Although a modular approach was planned for conducting the census, only the core census module was implemented, because of budget constraints.<sup>3</sup> The core module of the CA was integrated with the PHC. A community survey was implemented during the cartography phase.

### **Frame**

The cartography phase enabled the delineation of the EAs for the enumeration phase of the RGPFAE 2013.

### **Complete and/or sample enumeration methods**

The core module was conducted on a complete enumeration basis.

### **Sample design (if sampling was used)**

No sampling was used.

### **Data collection method(s)**

Face-to-face interviews using electronic devices (the CAPI method) was applied for census data collection.

### **Questionnaire(s)**

For the RGPFAE, two questionnaires were used. The first questionnaire was administered to individuals, households and collective households; it included a specific section (module) dedicated to the agricultural activity of the household members. The second questionnaire was administered to the “floating” population. It comprised two parts: identification and individual characteristics. Of the 16 core items recommended by FAO, the RGPFAE questionnaires covered 12 items.<sup>4</sup>

## 9. USE OF TECHNOLOGY

Digitized mapping was used to delineate the EAs, based on the geographic coordinates collected during the cartography phase in the field and from satellite imagery. The CAPI method, with the use of PDAs, was applied for census data collection. Census results were disseminated through the ANSD website.

## 10. DATA PROCESSING AND ARCHIVING

A real-time data transmission process was put in place to ensure the retrieval of data from the field. To ensure the completeness of the process, data were retrieved from all drives (PDAs, supervisor laptops and the central server). At the end of this process, a consolidated central database was created in CSPro. Data processing for the census was carried out using CSPro.

## 11. CENSUS DATA QUALITY

A real-time data reporting system via the Internet, from the departmental bases to the central ANSD server in Dakar, made it possible to perform close monitoring of the field operation, as well as data quality checking and correction whenever necessary. The completeness of records from the fieldwork was ensured by using all back-up devices (PDAs, laptops, server).

A Post-Enumeration Survey (PES) was carried out from March to April 2014, to assess the quality of the census data quality and the coverage rate.

## 12. DATA DISSEMINATION AND USE

Preliminary results were released in March 2014, less than three months after enumeration was completed. The final census results were published in September 2014 and were made available to the public through the ANSD website.

## 13. DATA SOURCES

**Agence Nationale de la Statistique et de la Démographie (ANSD).** 2019. RGPFAE, résultats définitifs. In: *Agence Nationale de la Statistique et de la Démographie* [online]. Dakar, Senegal. [Cited 8 August 2019].  
<http://www.ansd.sn/ressources/RGPFAE-2013/resultats-definitifs.htm>

## 14. CONTACT

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<sup>3</sup> At the time the SDS 17 was being developed, AGRIS, with one core annual production module and several rotating modules, were planned to be implemented, starting in 2019-2020.

<sup>4</sup> The following core items were not covered by the CA: (i) “Legal status of the holding”; (ii) “Main purpose of production of the holding”; (iii) “Area of holdings according to land use types”; (iv) “Presence of other economic production activities of the holding”.

# SENEGAL – GENERAL CENSUS OF POPULATION AND HOUSING, AGRICULTURE AND LIVESTOCK 2013 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>755 532</b>	<b>3 131 680</b>

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Total</b>	<b>755 532</b>	<b>3 131 680</b>
Holdings without land	7 555	
Holdings with land	747 977	3 131 680
1 parcel	143 551	141 284
2–3 parcels	294 657	729 844
4–5 parcels	173 772	766 109
6–11 parcels	105 774	852 240
12 parcels and over	30 223	642 203

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		
	Number	
<b>Total</b>	<b>755 532</b>	
Male	640 195	
Female	115 337	
Under 25 years	13 675	
25–49 years	355 523	
50–74 years	344 819	
75 years and over	41 515	

HOLDINGS BY HOUSEHOLD SIZE		
	Number	
<b>Total</b>	<b>755 532</b>	
1–10 persons	454 423	
11–20 persons	246 900	
21–30 persons	43 756	
31–40 persons	7 791	
41–50 persons	1 793	
51 persons and over	869	

LIVESTOCK		
	Holdings	
<b>Total holdings with livestock</b>	<b>211 548</b>	
Cattle	25 386	
Sheep	48 656	
Goats	38 079	
Pigs/swine	4 231	
Horses	14 808	
Asses	19 039	
Poultry	57 118	
Other animals	2 115	
Insects		
Bees (hives)	212	

IRRIGATION		
	Holdings	
<b>Total holdings with irrigated land</b>	<b>33 294</b>	

## 1. HISTORICAL OUTLINE

Agricultural censuses in Seychelles were conducted in 1950 and 1961. Agriculture modules were included in the Censuses of Population and Housing (CPH) conducted in 1971, 1977, 1987, 1994, 2002 and 2010. The Census of Agriculture (CA), to which the data and metadata review presented here refer, was conducted in 2011.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The Statistics Act 2010 established the National Bureau of Statistics (NBS), which operates as a semi-autonomous government agency responsible for collecting, compiling, analysing and publishing statistical information.<sup>1</sup>

### *Institutional framework and international collaboration*

The authority for undertaking a census rests with the NBS. The 2011 CA was carried out jointly by the NBS and the Seychelles Agricultural Agency (SAA). The CA was conducted with technical assistance provided by FAO.

### *Census staff*

The staff of the SAA acted as coordinators and supervisors for the CA 2011. The census staff consisted of 55 people, including: 31 enumerators, seven supervisors, six data entry clerks, one person providing IT support, four coders and six other staff. The staff of the SAA acted as coordinators and supervisors for the CA 2011.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of enumeration, for inventory items, such as on household composition and livestock.

### *Reference periods:*

- the past 12 months (from 1 September 2009 to 31 August 2010), for flow items such as farm inputs.
- the previous month, for labour characteristics.

## 4. ENUMERATION PERIOD

The enumeration period was from 16 to 31 August 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered mainly the “commercial” sector of the agricultural industry in Seychelles.

The **statistical unit** was the agricultural holding (farm). Two types of holdings were distinguished: (i) agricultural enterprises (holdings in the non-household sector); and (ii) agricultural households (holdings in the household sector), farming mainly for sale.

## 6. GEOGRAPHIC COVERAGE

The CA 2011 covered the islands of Mahé, Praslin and La Digue and their immediate satellite islands, where agricultural activities are conducted. Islands with low habitation or that are uninhabited were excluded.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Only the agricultural households classified as “producing mainly for sale” in the CPH 2010 were covered in the AC 2011. The households classified as producing crop and/or rearing livestock mainly for own consumption were not included in the CA. These were subject to a sample survey of such households. In addition, all EAs of the 2010 CPH without at least one non-household farm were excluded.<sup>2</sup>

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was applied in the 2011 CA.<sup>3</sup>

### *Frame*

The CPH 2010, which included an agriculture module, was used to establish the frame for the holdings in the household sector. The SAA provided the frame of large farms and registered farmers. To ensure that the large livestock producers would be included, lists of pig breeders and farms with broilers and/or layers were obtained from the livestock department.

<sup>1</sup> The NBS is also responsible for coordinating, monitoring and supervising the National Statistical System (NSS). The NBS replaces the National Statistics Bureau (NSB), which was established in 2005.

<sup>2</sup> Consequently, 40 percent of all agricultural holdings and 303 EAs (or 57 percent) of the 527 EAs were excluded.

<sup>3</sup> The 2011 National Agricultural Survey Programme was conceived as featuring two distinct phases. Phase I was a CA (with a complete enumeration of farmers from both the household and the non-household sector), while Phase II was an Agricultural Survey Programme, with a focus on crop production. An agriculture module for obtaining core agriculture data was included as part of the CPH 2010.

**Complete and/or sample enumeration methods**

Non-household farms and agricultural households classified as “producing mainly for sale” in the CPH 2010 were covered by complete enumeration. Other farms were subject to sample surveys.

**Sample design (if sampling was used)**

This was not applied for the enumeration of farms in the CA 2011.

**Data collection methods**

Data collection was done by means of face-to-face interviews using printed questionnaires (the PAPI method).

**Questionnaire(s)**

The “household/holding form” was used for CA data collection.

The CA 2011 questionnaire covered 13 of the 16 core items recommended for the WCA 2010 round.<sup>4</sup>

**9. USE OF TECHNOLOGY**

Aerial photographic EA maps were used to guide the locations of farms. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Manual data entry was used to enter census data.

**11. CENSUS DATA QUALITY**

No details were provided in the census reports available.

**12. DATA DISSEMINATION**

The census results were released through printed reports, the NBS website, and a dissemination workshop with stakeholders. The census report includes thematic maps illustrating the distribution of farms, the land area under agricultural activities and livestock counts by district.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 18-22 September 2017, Nairobi, Kenya. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020kenya/en/>

**National Bureau of Statistics.** 2013. *Seychelles Census of Agriculture 2011*. Victoria, Seychelles. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Reports\\_4/SEY\\_REP\\_ENG\\_2011.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Reports_4/SEY_REP_ENG_2011.pdf)).

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<sup>4</sup> The following core items were not covered by the CA: (i) “Household size”; (ii) “Presence of aquaculture on the holding”; and (iii) “Presence of forests and other woodland on the holding”.

## SEYCHELLES – CENSUS OF AGRICULTURE 2011 – MAIN RESULTS

NUMBER OF HOLDING AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>530</b>	<b>466</b>
Individual farms/private farms	498	n.a.
Partnerships	29	n.a.
Institutions	3	n.a.

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>530</b>	<b>466</b>
Land owned	n.a.	149
Land leased	n.a.	273
Rented	n.a.	4
Other tenure forms	n.a.	41

LAND FRAGMENTATION		
	Holdings	Number of parcels
<b>Total</b>	<b>530</b>	<b>621</b>
1 parcel	433	434
2 parcels	75	136
3 parcels	18	39
4 parcels	1	5
5 parcels	2	6
6 parcels	1	1

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>530</b>	<b>466</b>
Less than 0.20 ha	83	13
0.20–0.40 ha	61	18
0.40–0.80 ha	166	88
0.80–1.20 ha	86	79
1.20–1.60 ha	49	62
1.60–2.00 ha	37	65
2.00 ha and over	48	141

LAND USE		
	Holdings	Area (ha)
<b>Total area of holdings</b>	<b>530</b>	<b>466</b>
Agricultural land	n.a.	418
Land under temporary crops	n.a.	75
Land under mixed tree and temporary crops	n.a.	310
Land under permanent crops	n.a.	31
Land temporarily fallow	n.a.	1
Land under preparation for planting	n.a.	1
Not stated	n.a.	4
Non-agricultural use	n.a.	9
Land used for livestock	n.a.	34
Uncultivable land	n.a.	2

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>2 039</b>
Male	1 066
Female	973

HOLDINGS	
	Holdings
<b>Total producing mainly for</b>	<b>530</b>
Home consumption	20
Sale	510

HOLDERS, BY SEX AND AGE	
	Number
<b>Total</b>	<b>642</b>
Male	522
Female	120
Under 20 years	3
Male	3
Female	0
20–29 years	49
Male	40
Female	9
30–39 years	128
Male	101
Female	27
40–49 years	207
Male	175
Female	32
50–59 years	151
Male	121
Female	30
60 years and over	104
Male	82
Female	22

EMPLOYEES WORKING ON THE HOLDING	
	Number
<b>Total employees</b>	<b>800</b>
Male	647
Female	153
Paid employees	675
Male	580
Female	95
Unpaid employees	125
Male	67
Female	58

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	139	506
Goats	49	802
Pigs	127	9 490
Poultry (1 000 head)	n.a.	n.a.
Chickens	46	299
Ducks	21	0.3
Other animals		n.a.
Rabbits	12	118
Insects		
Bees (hives)	10	117

METHODS OF IRRIGATION	
	Holdings
<b>Total holdings with irrigated land</b>	<b>n.a.</b>
Surface irrigation (hosepipe)	411
Sprinkler	n.a.
Micro sprinkler	240
Overhead sprinkler	164
Fertigation	29
Watering can	116
Localized irrigation	77



## 1. HISTORICAL OUTLINE

South Africa has conducted Censuses of Commercial Agriculture (CoCAs) in 2002 and 2007.<sup>1</sup>

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Statistics Act (Act No. 6 of 1999) gives Statistics South Africa (Stats SA) the authority to collect statistics and the responsibility to ensure that the information remains confidential.

### **Institutional framework and international collaboration**

Stats SA conducted both the CoCA 2002 and the CoCA 2007. The CoCA 2007 was funded jointly by Stats SA and the Department of Agriculture, Forestry and Fisheries (DAFF).

### **Census staff**

In 2002 and 2007, census data collection was conducted using self-interviewing methods (through post, e-mail and fax). In addition, personal visits were conducted on request (mainly for micro-, small- and medium-sized enterprises) to assist respondents.

## 3. REFERENCE DATE AND PERIOD

### **Reference days:**

- the day of the interview, for inventory items such as legal status and management system of the holding and livestock numbers;
- 28 February 2007, for such items as the number of family members and employees involved in farming activities.

**Reference period:** the financial year (ending on any date between 1 March 2006 and 28 February 2007), for flow items, such as area planted, irrigated area, production, livestock disposed, expenditure related to farming activity and employment.

## 4. ENUMERATION PERIOD

The census questionnaires were posted to holders between 1 July and 5 August 2007. The respondents were asked to return the completed questionnaires no later than 30 September 2007.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered the agricultural activities of tax-registered enterprises involved in: (i) the growing of crops, market gardening and horticulture; (ii) the farming of animals; (iii) the growing of crops combined with the farming of animals (mixed farming); and (iv) agricultural and animal husbandry services, including forestry and aquaculture (except veterinary activities).

The **statistical unit** for the collection of census data was a “farming enterprise”, defined as “a legal unit or a combination of legal units that includes and directly controls all functions necessary to carry out its production activities”.

## 6. GEOGRAPHIC COVERAGE

The entire country was covered in the CoCA 2007.

## 7. CUT-OFF THRESHOLDS AND OTHER EXCLUSIONS

All agricultural production households growing crops or raising livestock solely for own consumption and not registered for value-added tax (VAT), i.e. subsistence and smallholder farmers, were excluded.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The CoCA 2007 used the classical approach.

### **Frame**

The main source of the frame was the business register, which contains all businesses undertaking agricultural activities registered for VAT with the South African Revenue Service (the Tax Office).

### **Complete and/or sample enumeration methods**

The 2007 CoCA was conducted on the basis of a complete enumeration of farming enterprises.

### **Sample design (if sampling was used)**

Not applicable.

<sup>1</sup> The CoCa planned for 2012 was not funded and, as such, was not conducted.

**Data collection method(s)**

The CoCA data collection was conducted using self-enumeration through post, e-mail and fax. In addition, personal visits were conducted upon request (to micro-, small- and medium-sized enterprises) to assist respondents. Questionnaires were sent to each of the 93 246 enterprises that met the frame criteria in the year 2006/2007; 39 966 of these responded.

**Questionnaire(s)**

The CoCA used a single questionnaire for census data collection. The census questionnaire covered 14 of the 16 core items<sup>2</sup> recommended for the WCA 2010.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Manual data entry was used for the census questionnaires. Data entry application with consistency checks and skip patterns was applied. Ratio imputation was used for both item and unit non-response.

**11. CENSUS DATA QUALITY**

Several steps were put in place to ensure the quality of census results, for example: careful design of the questionnaire and its testing in pilot studies; preparation of training manuals and training of enumerators; equipping the capturing system with warnings and consistency checks. Comparisons were made with the frame and with the estimates of the 2002 CoCA, and with the estimates from the annual agriculture and related services survey, as well as with various sources that reported on the sector.

**12. DATA DISSEMINATION**

The census results were disseminated through press releases, printed publications and on Stat SA's website.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 18-22 September 2017, Nairobi, Kenya. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020kenya/en/>

**Stat SA.** 2010. *Census of commercial agriculture, 2007*. Pretoria, Republic of South Africa. (also available at <http://www.statssa.gov.za/publications/Report-11-02-01/Report-11-02-012007.pdf>).

**14. CONTACT**

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<sup>2</sup> The following core items were not covered by the AC: (i) "Household size"; and (ii) "Main purpose of production of the holding".

# SOUTH AFRICA – CENSUS OF COMMERCIAL AGRICULTURE 2007 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS	
	Holdings
<b>Total</b>	<b>39 966</b>
Individual	33 249
Close corporation	2 259
Family	874
Partnership	1 180
Private company	2 167
Other	237

LABOUR FORCE OF THE HOLDING, BY SEX	
	Number
<b>Total labour force</b>	<b>818 503</b>
Male	498 358
Female	320 145
Family labour force engaged in agriculture	47 570
Male	34 951
Female	12 619
Paid employees	770 933
Male	463 407
Female	307 526
Skilled farm workers	94 888
Male	67 287
Female	27 601
Unskilled farm workers	282 885
Male	191 074
Female	91 811
Office staff	10 942
Male	2 997
Female	7 945
Farm managers	10 673
Male	1 100
Female	9 573
Farm foremen	14 125
Male	11 959
Female	2 166
Casual and seasonal employees	357 420
Male	176 903
Female	180 517

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>30 879</b>	
Cattle	25 113	5 278 785
Sheep	12 830	11 817 763
Goats	2 014	854 187
Pigs/swine	1 345	909 521
Horses	1 897	20 520
Poultry (1 000 head)	5 324	243 168
Chicken	4 404	242 855
Ostriches	868	244
Other	52	69
Insects		
Bees (hives)	44	41 559

TEMPORARY CROPS PLANTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	16 942	2 966 099
Maize	11 145	2 177 392
Sorghum	374	78 308
Wheat	4 060	571 438
Barley	436	57 746
Other cereals	927	81 212
Vegetables and melons	n.a.	n.a.
Potatoes	2 002	59 588
Sweet potatoes	83	1 109
Tomatoes	843	10 711
Onions	356	9 031
Pumpkins	310	9 462
Carrots	167	4 211
Cabbages	413	4 897
Mushrooms	20	89
Green beans	217	4 240
Watermelons	116	2 133
Other vegetables	947	9 879
Oilseed crops	2 874	411 409
Sunflower seed	1 484	242 615
Groundnuts	414	39 507
Soybeans	807	108 393
Other oil seeds	169	20 893
Leguminous crops	429	36 678
Dry beans	380	33 822
Other legumes	49	2 855
Sugar crops	n.a.	n.a.
Sugar cane	1 978	272 226
Other temporary crops	n.a.	n.a.
Fodder crops	6 501	475 703
Other	n.a.	n.a.
Cotton	135	18 745
Tobacco	259	14 763
Other	59	4 687

PERMANENT CROPS		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Subtropical fruits	965	34 603
Pineapples	155	7 530
Bananas	338	9 360
Other subtropical fruit	472	17 712
Citrus fruits	2 188	66 430
Oranges	1 487	53 390
Lemons	309	4 929
Mandarins	246	2 796
Other citrus fruit	146	5 313
Pome fruits and stone fruits	7 103	189 702
Apples	967	19 667
Pears	587	10 754
Peaches	626	8 513
Other deciduous fruit <sup>1</sup>	4 923	150 768
Nuts	625	17 264
Macadamia nuts	404	13 056
Pecan nuts	203	3 694
Other nuts	18	513
Other horticulture products (permanent crops)	1 670	54 425

<sup>1</sup> Data include table grapes and wine grapes

## 1. HISTORICAL OUTLINE

The 2007/2008 National Sample Census of Agriculture (NSCA) is the fourth agricultural census to be carried out in the United Republic of Tanzania since the country independence. The first agricultural census was conducted in 1971/1972, the second in 1994/1995, and the third in 2002/2003.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Statistics Act 2015 empowers the National Bureau of Statistics (NBS) to collect and publish specified statistics.

### **Institutional framework and international collaboration**

The agencies responsible for the preparation and implementation of the agricultural census were the NBS in collaboration with: the Ministry of Agriculture, Food Security and Cooperatives (MAFC); the Ministry of Livestock and Fisheries Development; the Ministry of Water; the Ministry of Industry and Trade, the Prime Minister's Office; Regional Administration and Local Government (PMO-RALG); and the Office of the Chief Government Statistician (OCGS), Zanzibar.

At the national level, the census was headed by the Director General of the NBS. The Planning Group had the responsibility to oversee the operational aspects of the census. This Group comprised staff from the Department of Agricultural Statistics of the NBS and three representatives of the Department of Policy and Planning of the MAFC.<sup>1</sup> The 2007/2008 NSCA was supported by funding from the Department for International Development (DFID) and the Japan International Development Agency (JICA). These parties financed most of the operational activities. The remaining funding came from the Government of the United Republic of Tanzania. In addition, FAO provided technical assistance.

### **Census staff**

A total of 1 759 enumerators were involved in data collection. An additional 5 percent of the enumerators were kept as reserves in case of dropout during the enumeration exercise. On the mainland, each region had two regional supervisors (the total number was 42) and two district supervisors per district (total: 266). In Zanzibar, 13 supervisors were involved in data collection.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 October 2008, for the number of animals, permanent and part-time employment.

**Reference period:** the 2007/2008 agricultural year (from 1 October 2007 to 30 September 2008), for land, crops, farm inputs, etc.

## 4. ENUMERATION PERIOD

The data collection activities for the 2007/2008 NSCA lasted three months (from June to August 2009).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). Detailed information on aquaculture was collected from small-scale farms, only from the units associated with an agricultural holding. Community-level data were also collected in the NSCA.

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production under single management consisting of all livestock kept and of all land used for agricultural production, without regard to title, legal form or size. Four types of agricultural holdings (farming) were identified during the interview: (i) crops only; (ii) livestock only; (iii) pastoralist; and (iv) crops and livestock.

## 6. GEOGRAPHIC COVERAGE

The census covered smallholders in rural areas only and all large-scale farms. Urban and peri-urban areas were not covered by the census.

## 7. CUT-OFF THRESHOLD

For the purposes of the 2007/2008 NSCA, agricultural holdings were limited to those that met one or more of the following conditions: operating at least 25 m<sup>2</sup> of arable land and owning or keeping at least one head of cattle, five goats/sheep/pigs, or 50 chicken/ducks/turkeys during the agricultural year 2007/2008.

The following criteria for large-scale farms were applied: cultivating at least 20 ha (50 acres) of crops, owning or keeping at least 50 cattle, 100 goats/sheep/pigs, or 1 000 chicken/ducks/turkeys/rabbits, and/or operating at least 0.5 ha of intensive greenhouse horticulture, and/or keeping at least 0.5 ha of fish-farming production units.

<sup>1</sup> At the regional level, implementation of the census activities was overseen by the Regional Statistical Officers of the NBS and the Regional Agricultural Statistics supervisors from the MAFS. At the district level, the census activities were managed by two supervisors from the PMO-RALG. The supervisors managed the enumerators, who also came from the PMO-RALG.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The NSCA was conducted using the classical approach. A community survey was conducted jointly with the census.

### **Frame**

The National Master Sample was developed from the Population and Housing Census (PHC) 2002. Listing forms were used to screen the agricultural households in the selected villages.

### **Complete and/or sample enumeration methods**

The large-scale farms were fully covered, while the small-scale farms were covered on a sample basis. The sample design for smallholders was designed to provide estimates at the district level.

### **Sample design (if sampling was used)**

The sample design was a stratified two-stage sample. The overall sample for smallholders was selected from 3 192 villages on the mainland and 317 rural EAs in Zanzibar. Data were collected from a total sample of 52 635 rural agricultural small-scale farms and from 1 006 large-scale farms.

### **Data collection method**

The PAPI method was used to collect census data. For some large-scale farms, questionnaires were sent via post for self-interviewing (using the mail-out/mail-back method).

### **Questionnaire(s)**

Three different questionnaires were used to collect census data: (i) a small-scale farms questionnaire; (ii) a large-scale farms questionnaire; and (iii) a community-level questionnaire. The questionnaires covered all 16 core items recommended in the WCA 2010.

## 9. USE OF TECHNOLOGY

The census data capture exercise was performed using Intelligent Character Recognition (ICR) scanning technology. ArcGIS software was used to generate maps for the dissemination of census data.

## 10. DATA PROCESSING AND ARCHIVING

Prior to data capture, performed mainly by scanning, all questionnaires were manually edited. For the questionnaires that were unsuitable for scanning, CSPro was used for data entry.

A batch validation program was developed in CSPro to identify inconsistencies within questionnaires. This was in addition to the interactive validation performed during the ICR extraction process. SPSS was used to produce the census tabulations, and Microsoft Excel was used to organize the tables and compute additional indicators. Arc GIS was used to produce maps.

## 11. CENSUS DATA QUALITY

Significant emphasis was placed on data quality throughout the exercise, from the planning stage to questionnaire design, training, supervision, data entry, validation and cleaning/editing.

## 12. DATA DISSEMINATION

Preliminary census results were published in November 2010. The final results of the 2007/2008 NCSA were disseminated in 2012. The census results are available at the national and subnational level. The census reports, data set and other census materials are available on the NBS website.

## 13. DATA SOURCES

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 18-22 September 2017, Nairobi, Kenya. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020kenya/en/>

**National Bureau of Statistics.** 2019. Publication [online]. Arusha, The United Republic of Tanzania. [Cited on 8 August 2019]. <https://www.nbs.go.tz/index.php/en/census-surveys/agriculture-statistics>

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NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>5 839 529</b>	<b>15 756 174</b>
Smallholder farms	5 838 523	14 642 284
Large scale farms	1 006	1 113 890

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>5 839 529</b>	<b>15 756 174</b>
0.01–0.50 ha	753 212	n.a.
0.51–1.00 ha	1 078 347	n.a.
1.01–1.50 ha	1 017 800	n.a.
1.51–2.00 ha	650 698	n.a.
2.01–2.50 ha	786 308	n.a.
2.51–3.00 ha	259 609	n.a.
3.01–3.50 ha	234 990	n.a.
3.51–4.00 ha	118 040	n.a.
4.01–4.50 ha	276 299	n.a.
4.51–5.00 ha	93 082	n.a.
5.01 ha and over	571 142	n.a.

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	
<b>Total</b>	<b>5 838 522</b>	
Male	4 651 702	
Female	1 186 820	

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		
	Number	
<b>Engaged in agricultural activities on the holding</b>	<b>31 013 026</b>	
Male	15 487 217	
Female	15 525 810	
<b>Aged 15 years and over</b>	<b>16 960 804</b>	
Male	8 635 320	
Female	8 325 484	
<b>Aged 10–15 years</b>	<b>5 247 057</b>	
Male	2 387 423	
Female	2 859 635	
<b>Aged under 10 years</b>	<b>8 805 165</b>	
Male	4 464 474	
Female	4 340 691	

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>2 329 942</b>	
Cattle	1 699 107	21 400 889
Sheep	638 879	5 730 158
Goats	1 746 329	15 178 314
Pigs	522 133	1 592 727
Horses	n.a.	16 272
Asses (donkeys)	n.a.	292 107
Poultry (1 000 head)	n.a.	n.a.
Chickens	n.a.	44 240
Ducks	n.a.	1 201
Turkeys	n.a.	98
Other animals	n.a.	n.a.
Rabbits	n.a.	210 961
Guinea pigs	n.a.	616 614
Insects		
Bees (hives)	129 314	5 158 437

METHODS OF IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>318 625</b>	<b>280 528</b>
Gravity	205 654	n.a.
Hand bucket	97 423	n.a.
Hand pump	4 750	n.a.
Motor pump	7 465	n.a.
Other	3 332	n.a.

SOURCES OF IRRIGATION WATER		
	Holdings	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>318 625</b>	<b>280 528</b>
River	167 799	n.a.
Borehole	4 233	n.a.
Lake	17 482	n.a.
Canal	33 441	n.a.
Dam	2 974	n.a.
Tap Water	87 809	n.a.
Well	4 912	n.a.

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Total tractors of all kinds	171 183	67 123
Other (machine-powered)	n.a.	
Thresher	42 876	224 249
Power tiller	15 059	159 443
Rigder	28 696	113 690

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>9 032 736</b>
Cereals	7 508 635	5 875 738
Vegetables and melons	410 321	102 269
Oilseed crops	1 789 253	970 334
Root/tuber crops	1 016 109	274 554
Leguminous crops	2 949 414	1 120 569
Sugar crops	64 404	43 240
Other temporary crops	491 009	646 032

PERMANENT CROPS		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>2 138 653</b>
Orchards	2 423 094	1 370 571
Tropical and subtropical fruits	n.a.	n.a.
Bananas	943 056	290 945
Mangoes	286 446	64 564
Citrus fruits	n.a.	n.a.
Oranges	175 541	68 711
Nuts	n.a.	n.a.
Cashewnuts	313 948	540 989
Oilseed crops	n.a.	n.a.
Coconuts	129 906	117 929
Oil palms	61 611	16 251
Beverage crops and spice crops	n.a.	n.a.
Cloves	12 419	15 588
Coffee	482 038	202 854
Sisal	161	34 731
Tea	17 968	18 009
Other	1 846 305	768 082

## 1. HISTORICAL OUTLINE

The first Census of Agriculture (CA) was carried out in 1972, the second in 1982, and the third in 1996. The fourth one, to which the metadata review and data presented here refer, is the CA 2012–2014.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The Togo Census of Agriculture 2012–2014 was conducted under the authority of Presidential Decree No. 2011-023 / PR of 9 February 2011.

### *Institutional framework and international collaboration*

The Ministry of Agriculture, Livestock and Fishery (MAEP), and, specifically, the Directorate of Agricultural Statistics, Informatics and Documentation (DSID), is the main agency responsible for conducting the CA. The Central Bureau of the CA was established for the implementation of the census. The CA was conducted in collaboration with the National Statistics Office (NSO). The entire operation of the CA was funded through the national investment budget. In addition, FAO provided technical assistance during the preparation stage.

### *Census staff*

The CA core module involved 1 814 enumerators, 180 team supervisors, 40 district/regional supervisors, 10 regional coordinators and 213 data entry clerks. In the supplementary module, 324 enumerators, 36 team supervisors and 15 district supervisors participated.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview for inventory items collected in the core and supplementary modules, such as livestock numbers.

**Reference periods** applied for the supplementary module:

- from January to December 2012, for stock variation of livestock;
- the agricultural year (from 1 April 2012 to 30 March 2013), for items such as land use, agricultural practices, labour inputs, and machinery and equipment.

## 4. ENUMERATION PERIOD

Data collection for the core module and community survey was conducted in April 2012. Data collection for the supplementary module and thematic surveys was carried out between July 2012 and January 2013.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The census scope covered agricultural activities (crop and livestock production). A community survey was conducted with the CA. The statistical unit is the agricultural holding, defined as an economic unit of agricultural production comprising all livestock kept and all land wholly or partially used by one or more persons, for agricultural production purposes, without regard to title or size, and is subject to a single management. The CA 2012–2014 covered only the agricultural holdings in the household sector (“agricultural households”). An agricultural household is a household in which one or more members are involved in own-account agricultural production.

## 6. GEOGRAPHIC COVERAGE

The CA covered only the rural areas of the country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The holdings in the non-household sector were not covered in the census. The CA did not cover the irrigation areas.<sup>1</sup>

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The CA 2012–2014 used the modular approach. The core module was followed by a supplementary module and thematic surveys (for more details, see the “Questionnaire(s)” subsection below). A community survey in rural areas was conducted jointly with the census data collection.

### *Frame*

The EAs established for the Population Census (PC) 2010 were used for the CA 2012–2014. The listing operation was conducted during census enumeration to identify the agricultural households in rural areas (for this operation, the core module questionnaire was applied). The core module provided a sampling frame for the supplementary module and for follow-up thematic surveys.

<sup>1</sup> Data collection for the irrigation areas is done using periodic surveys.

**Complete and/or sample enumeration method(s)**

The core census module was carried out through complete enumeration. The supplementary module was conducted using sample enumeration.

**Sample design (if sampling was used)**

A stratified two-stage sampling design was used for the supplementary module. During the first stage, approximately 2 000 PSUs, the EAs, were selected with probability proportional to population size (out of 4 638 EAs covered by the core census module). During the second stage, six agricultural households (the SSUs) were selected using systematic sampling at the EA level. In total, 9 000 holdings were sampled.

**Data collection method(s)**

Face-to-face interviewing was applied to collect information from holdings, using the traditional PAPI method.

**Questionnaire(s)**

The CA used seven questionnaires: one for the core module<sup>2</sup> and six for the supplementary module and thematic surveys. The questionnaires included detailed census information, for example on the sociodemographic characteristics of the holding, the holding's plots, the crops harvested, irrigation, the use of fertilizers and pesticides, food security, and sedentary, nomadic and transhumant livestock.

In addition, the rural community survey questionnaire was used for community-level data collection.

The CA questionnaires covered 15 of the 16 core items<sup>3</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

GPS was used to measure holding's plots area. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Manual data entry was used for the CA data, at the headquarters of the DSID. CSPro was used for census data editing and imputation. The SPSS was applied for data analysis.

**11. CENSUS DATA QUALITY**

To minimize non-sampling errors, emphasis was placed on training and supervising field staff. The training of enumerators in the regional statistics services was done region by region, by the same team of trainers, to ensure better quality of the field staff training.

**12. DATA DISSEMINATION**

The census results were disseminated through printed publications, CD-ROMs, and the websites of CountrySTAT and institutions. The census data were disseminated at the national and subnational (regional) level.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 7-11 November 2016, Dakar, Senegal. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020dakar/en/>

**Institut National de la statistique et des études économiques et démographiques (INSEED).** 2015. TOGO - Quatrième Recensement National de l'Agriculture (2011--2014). In: *INSEED*. [online]. Lomé, Togo. [Cited 12 September 2019]. <http://www.stat-togo.org/nada/index.php/catalog/26>

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Website: <http://agriculture.gouv.tg/>

<sup>2</sup> The core census module questionnaire was also used to screen the agricultural households.

<sup>3</sup> The core item "Legal status of agricultural holder" was not covered by the CA.



## TOGO – CENSUS OF AGRICULTURE 2012–2014 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS <sup>1</sup>		
	Holdings	Area (ha)
<b>Total</b>	<b>508 599</b>	<b>1 746 265</b>
Individual	2 600	9 880
Two or more individuals	505 999	1 736 385

LAND TENURE <sup>1</sup>		
	Holdings	Area (ha)
<b>Total</b>	<b>508 599</b>	<b>1 746 265</b>
Legal ownership and owner-like possession	n.a.	1 225 878
Non-legal ownership or owner-like possession	n.a.	310 835
Rented from others	n.a.	165 895
Other form of tenure	n.a.	43 657

LAND FRAGMENTATION <sup>1</sup>		
	Holdings	Area (ha)
<b>Total</b>	<b>508 599</b>	<b>1 683 162</b>
Holdings without land	11 225	
Holdings with land	497 374	1 683 162
1 parcel	55 229	81 718
2–3 parcels	158 848	359 140
4–5 parcels	114 362	370 598
6–9 parcels	107 230	453 281
10 parcels and over	61 705	418 425

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES <sup>1</sup>		
	Holdings	Area (ha)
<b>Total holdings</b>	<b>508 599</b>	<b>1 683 162</b>
Holdings without land	11 225	
Holdings with land	497 374	1 683 162
Less than 0.5 ha	23 302	381 292
0.5–1.0 ha	46 462	267 383
1.0–2.0 ha	96 677	175 413
2.0–3.0 ha	88 389	80 461
3.0–5.0 ha	118 462	95 113
5.0–7.0 ha	58 900	69 752
7.0–10.0 ha	30 565	91 656
10 ha and over	32 244	522 092
Not declared	2 373	n.a.

HOLDERS, BY SEX <sup>1</sup>		
	Number	Area operated (ha)
<b>Total</b>	<b>508 599</b>	<b>1 683 162</b>
Male	418 704	833 863
Female	89 895	849 299

HOLDINGS BY HOUSEHOLD SIZE		Number
<b>Total</b>		<b>508 599</b>
1 person		107 054
2–3 persons		305 568
4–5 persons		65 155
6–9 persons		26 210
10 persons and over		4 612

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total</b>		<b>3 748 430</b>
Male		1 828 854
Female		1 909 576
Engaged in agricultural activities on the holding		1 311 659
Male		612 173
Female		699 486

HOLDERS, BY SEX AND AGE		Number
<b>Total</b>		<b>508 599</b>
Male		418 704
Female		89 895
Under 25 years		34 437
Male		30 484
Female		3 953
25–35 years		125 411
Male		111 421
Female		13 990
35–45 years		138 653
Male		116 438
Female		22 215
45–55 years		95 276
Male		75 151
Female		20 125
55–65 years		62 345
Male		45 626
Female		16 719
65 years and over		52 477
Male		39 584
Female		12 893

PAID EMPLOYEES WORKING ON THE HOLDING, BY SEX		Number
<b>Total</b>		<b>1 479 347</b>
Male		1 291 272
Female		188 075

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>356 687</b>	
Cattle	45 802	428 772
Sheep	118 136	1 130 882
Goats	247 135	2 629 537
Pigs/swine	119 678	949 132
Poultry (1 000 head)	403 372	16 096
Chickens	n.a.	13 471
Guinea fowl	n.a.	1 682
Turkeys	n.a.	43
Ducks and geese	n.a.	584
Pigeon	n.a.	316
Other animals	n.a.	n.a.
Rabbits	2 653	5 246
Grasscutter	938	12
Guinea pigs	1 921	260
Insects		
Bees (hives)	2 779	n.a.

<sup>1</sup> Please note that tables 1 and 2 report the area of temporary and permanent crops, while tables 3, 4 and 5 report area on temporary crops only.

## 1. HISTORICAL OUTLINE

The first Census of Agriculture in Uganda was undertaken in 1963/1965, the second in 1990/1991, and the third in 2008/2009. Agriculture modules were included in the Population and Housing Censuses (PHCs) conducted in 2002 and 2014. Uganda also conducted a National Livestock Census (NLC) in 2008. The metadata review and data presented here refer to the Uganda Census of Agriculture (UCA) 2008/09.<sup>1</sup>

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The UCA 2008/2009 was conducted under the authority of the Uganda Bureau of Statistics Act 1998 (Act No. 12 of 1998).

### **Institutional framework and international collaboration**

UBOS conducted the UCA 2008/2009 in close collaboration with the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). Technical assistance was provided by FAO, the United Kingdom's Department for International Development (DFID) and the Norwegian Agency for Development (NORAD).<sup>2</sup>

The NLC 2008 was a collaborative effort between the MAAIF – the implementing agency – and UBOS, which provided technical support.

### **Census staff**

Overall, 1 066 field census staff, including 936 interviewers and 130 district supervisors, were involved in the UCA data collection.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items.

### **Reference periods:**

- the agricultural year 2008/2009 (from July 2008 to June 2009), for crops;
- the last 12 months, for agricultural inputs, agricultural equipment, labour input, etc.; and
- the last five years, for access to credit.

## 4. ENUMERATION PERIOD

The enumeration period for the UCA 2008/2009 was from July 2008 to September 2009. The enumeration period for the NLC 2008 was from 18 February to 25 February 2008.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production), as well as aquaculture activities.

The **statistical unit** was the agricultural holding (farm), defined as an economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form or size. Single management may be exercised by “an individual or by a household, jointly by two or more individuals or households, by a clan or tribe or a cooperative or government parastatals”.

## 6. GEOGRAPHIC COVERAGE

The CA 2008/2009 covered all 80 districts in the country, as of July 2007.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

For both the UCA 2008/2009 and the NLC 2008, no thresholds or other exclusions were applied.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The UCA 2008/2009 was conducted using the modular approach. The agricultural module of the PHC 2002 provided the frame (list) for the holdings in the household sector to enable the conduct of three supplementary modules (see “Questionnaire(s)” subsection below).

### **Frame**

The list frame for the household-based agricultural holdings (for both the CA 2008/09 and the NLC 2008) was provided by the agricultural module of the PHC 2002. District supervisors compiled lists of institutional farms and large-scale farms.

### **Complete and/or sample enumeration methods**

“Private large-scale” and “institutional” farms were surveyed on a complete enumeration basis. A sample was applied to the population of “small- and medium-scale” household-based agricultural holdings.

<sup>1</sup> Methodological information on the NLC 2008 is also presented.

<sup>2</sup> The Government of the Republic of Uganda obtained funds from the African Development Bank (AfDB) to implement the NLC 2008 through the National Livestock Productivity Improvement Project (NLPIP).

**Sample design (if sampling was used)**

For the UCA 2008/2009, a stratified two-stage sample design was used for *small* and *medium-scale* household-based agricultural holdings. During the first stage, EAs were selected with PPS, and during the second stage, households, which were the ultimate sampling units, were selected using systematic sampling. During the first stage, the sample covered 3 606 EAs; then, a sample of ten agricultural households (holdings) was selected from each EA, resulting in a total sample of 36 060 holdings.

For the NCL 2008, a two-stage stratified cluster-sampling design was applied. The private large-scale and institutional farms were surveyed on a complete enumeration basis, as their proportion and contribution to total livestock production is substantial. The small- and medium-scale household-based agricultural holdings were sampled and surveyed, amounting to 15 percent of the total number of households in Uganda as of 2008.

**Data collection methods**

Area measurement was used in the UCA. The PAPI method was employed for both the UCA 2008/2009 and the NLC 2008.

**Questionnaire(s)**

The CA 2008/2009 comprised four separate forms (questionnaires)<sup>3</sup>: (i) UCA form 2, the “Agricultural household and holding characteristics module”; (ii) UCA form 4, the “Crop area module”; (iii) UCA form 5, the “Crop production module”; and (iv) UCA form 6, for private large-scale and institutional farms. There was no questionnaire for livestock, because livestock items were collected in the NCL 2008.

The NCL 2008 comprised two three-page questionnaires, one for small- and medium-size agricultural holdings and another for private large-scale and institutional farms.

All 16 core items recommended by FAO for the WCA 2010 were covered by the census questionnaire.

**9. USE OF TECHNOLOGY**

GPS equipment was used for plot area measurement. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

There was concurrent collection and processing of the data. As soon as this was completed, the questionnaires were sent directly to the data processing centre, UBOS.<sup>4</sup> CSPro was used for data processing, including data entry, editing and management of the information within a batch. MS Access and Visual Basic were used for general data management, while STATA was used for data editing and analysis and Microsoft Excel was used for tabulation.

**11. CENSUS DATA QUALITY**

Significant emphasis was placed on data quality throughout the exercise, from the planning stage to questionnaire design, training, supervision, data entry, validation and cleaning/editing. Standard errors and coefficients of variation for the main variables are presented in the UCA reports.

**12. DATA DISSEMINATION**

The results of the UCA 2008/2009 and the NLC 2008 were made available in printed reports, CD-ROMs, the websites of CountrySTAT-Uganda, of the Uganda Bureau of Statistics and of the Ministry of Agriculture, Animal Industry and Fisheries. The results are also available upon request.

**13. DATA SOURCES**

**FAO.** 2017. *Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020)*. 18-22 September 2017, Nairobi, Kenya. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020kenya/en/>

**Uganda Bureau of Statistics.** 2019. Uganda National Data Archive. In: *Uganda Bureau of Statistics* [online]. Kampala, Uganda. [Cited 2 September 2019]. [www.ubos.org/nada](http://www.ubos.org/nada)

**Uganda Bureau of Statistics.** 2010. *Uganda Census of Agriculture 2008/2009 – Volume II, Methodology Report*. Kampala, Uganda. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Methodology\\_4/UGA\\_ENG\\_MET\\_2008-09.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Methodology_4/UGA_ENG_MET_2008-09.pdf)).

**14. CONTACT**

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Website: Uganda Bureau of Statistics – <http://www.ubos.org/>

Website: Ministry of Agriculture, Animal Industry and Fisheries – <http://www.agriculture.go.ug/>

Website: CountrySTAT Uganda – <http://countrystat.org/home.aspx?c=UGA>

<sup>3</sup> In addition, the agricultural module of the PHC 2002 contained a form to identify household-based agricultural holdings.

<sup>4</sup> The concurrent collection and processing of data provided an advantage, in that the data processing was a means of monitoring data quality and providing immediate feedback to the field operations team and the district supervisors.

## UGANDA – CENSUS OF AGRICULTURE 2008/2009 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS	
	Holdings
<b>Total</b>	<b>3 945 753</b>
Civil persons	3 469 321
An individual	2 374 582
Two or more individuals	1 094 739
Not declared	476 432

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX	
	Number
<b>Total</b>	<b>3 575 065</b>
Male	2 821 070
Female	753 994

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>19 254 223</b>
Male	9 723 027
Female	9 531 196
Engaged in agricultural activities on the holding	11 599 777
Male	5 751 673
Female	5 848 104

METHODS OF IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>31 357</b>	<b>6 925</b>
Surface	n.a.	1 525
Sprinkler	n.a.	343
Localized irrigation	n.a.	5 057

SOURCES OF IRRIGATION WATER		
	Holdings	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>31 357</b>	<b>6 925</b>
Surface water	5 864	n.a.
River/lake/pond	1 304	n.a.
Dam/reservoir	1 274	n.a.
Deep well/tube well	5 063	n.a.
Shallow well	16 482	n.a.
Municipal/town council water supply	880	n.a.
Harvested water	2 086	n.a.
Other sources of water	4 427	n.a.

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Total tractors of all kinds	27 828	32 806
Ploughs (machine-powered)	66 891	91 755
Other (machine-powered)	n.a.	
Trailers	3 569	3 349
Harrow/cultivator	4 125	6 479
Planter	7 647	10 950

TEMPORARY CROPS HARVESTED	
	Area (ha)
<b>Total</b>	<b>n.a.</b>
Cereals	n.a.
Maize	1 014 260
Finger millet	249 987
Sorghum	399 252
Rice	75 085
Oilseed crops	n.a.
Sesame	175 596
Soybeans	36 444
Groundnuts	345 232
Root/tuber crops	n.a.
Cassava	871 389
Sweet potatoes	440 256
Irish potatoes	32 758
Leguminous crops	n.a.
Beans	617 521
Field peas	43 837
Cowpeas	23 818
Pigeon peas	29 801

PERMANENT CROPS	
	Area (ha)
<b>Total</b>	<b>n.a.</b>
Bananas	915 878
Coffee	193 405

**AMERICAS**

## 1. HISTORICAL OUTLINE

The 2007 Census of Agriculture (CA) was the third agricultural census carried out in Antigua and Barbuda. Previous agricultural censuses were conducted in 1961 and 1984.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The General Statistics Act No. 13/1975 of 15 August 1975 provides the overall legal basis for the conduct of CAs in the country. Under this Act, the public and institutions have the obligation to cooperate with the census organization. In addition, all individual data are strictly confidential and should be used for statistical purposes only.

### *Institutional framework and international collaboration*

The CA 2007 was a collaborative exercise between the Ministry of Agriculture, Lands, Marine Resources and Agro-Industry (MALMRA) and the National Statistics Office (NSO). The Director of Agriculture and the Chief Statistician were in charge, overall, of the CA. The day-to-day activities were directed by the Senior Statistician, Censuses and Surveys and the Extension Officer appointed by the MALMRA. The Agricultural Census Office was located in the NSO.

### *Census staff*

The fieldwork for the CA 2007 involved 160 enumerators and 40 field supervisors.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview for inventory items, such as identification of holding and holder, number of parcels and land use, land tenure, permanent crops and livestock numbers.

**Reference period:** calendar year 2007, for temporary crops, machinery and equipment used on holding, agricultural practices and labour force working on the holding, etc.

## 4. ENUMERATION PERIOD

The enumeration period covered one month: November 2007.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered only agricultural (crop and livestock production) activities.

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production under single management comprising all livestock kept and land used wholly or partly for agricultural production purposes, without regard to title, legal form or size. When two or more persons jointly operated a holding on an equal basis, all such persons were considered as holders and their information was recorded on the holding form. In this case, the required information on the holder's household was to be collected for each household of the joint holders, using a single holding questionnaire.

## 6. GEOGRAPHIC COVERAGE

The CA covered the entire country, except for the commercial district of Saint John and the expatriate enclave of Holly Harbour and Mill Reef.

## 7. CUT-OFF THRESHOLDS AND OTHER EXCLUSIONS

The following thresholds were established for the collection of detailed census items (using a long questionnaire):

- at least two head of cattle and/or breeding cattle (at least one calf born in 2007);
- at least five sheep or goats or pigs and/or breeding such animals (at least one birth in 2007);
- a combination of at least five sheep, goats and pigs;
- at least 25 poultry and/or annual sales of eggs from these poultry of at least EC\$<sup>1</sup> 1 000 and/or annual sales of poultry meat from these poultry of at least EC\$ 1 000;
- at least 20 bearing fruit trees and/or annual sales of fruit from these trees of at least EC\$ 1 000;
- at least ten banana/finger rose mats and/or annual sales of fruit from these plants of at least EC\$ 1 000;
- at least ten plantain mats and/or annual sales of plantains from these plants of at least EC\$ 1 000;
- at least one eighth of an acre (0.12 acres or 5 445 square feet) of any garden crop and/or annual sales of garden crops of this land of at least EC\$ 1 000 (garden crops include vegetables, ground provisions, food crops, pineapple, papaya, herbs or any other crop not elsewhere included).

The holdings with an activity exceeding at least one of the abovementioned minimum size limits were enumerated by means of a long questionnaire. The rest of the holdings (those below all cut-off limits) were enumerated during the screening process through a short questionnaire.

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<sup>1</sup> East Caribbean dollar.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CA 2007 (see details below).

### **Frame**

For holdings operated by households, the frame was constructed by canvassing the country and filling in the household questionnaire. A list of non-household holdings was provided by MALMRA.

### **Complete and/or sample enumeration method**

All holdings in scope were covered using complete enumeration.

### **Data collection method(s)**

The information was collected by means of face-to-face interviews, using the Paper and Pen Interviewing (PAPI) method.

For census-taking purposes the country was divided into 288 enumeration districts (EDs), each containing approximately 100 households. Each ED was entrusted to one enumerator, who was required to canvass the assigned ED identifying all households within it and applying a household questionnaire (a short form). The household questionnaire was designed as a screening form to identify holdings above the thresholds, as well as a means to collect information from small holdings below the thresholds. Each household identified as having a holding completed a holding form. The second questionnaire, the “holding questionnaire” (a long form), was applied to all holdings above the threshold. Non-household holdings were separately enumerated, using the holding questionnaire.

### **Questionnaire(s)**

Two questionnaires were applied: (i) a household questionnaire (short), to collect information for small holdings below the threshold; and (ii) a holding questionnaire (long), to collect information for all holdings above the threshold. The presence of fishing activities in the households was reported in the short questionnaire.

The long questionnaire covered all 16 items recommended by the WCA 2010.

## 9. USE OF TECHNOLOGY

No information is available.

## 10. DATA PROCESSING AND ARCHIVING

Data were manually edited, coded and keypunched.

## 11. CENSUS DATA QUALITY

Field supervision was applied to ensure quality during the field operations.

## 12. DATA DISSEMINATION

No census results were disseminated at the time this publication was produced.<sup>2</sup>

## 13. DATA SOURCES

**FAO.** 2017. *Regional Roundtable on the Programme for the Census of Agriculture 2020 (WCA 2020)*, 22-26 May 2017, Port of Spain, Trinidad and Tobago. In: *World Programme for the Census of Agriculture*: [online]. Rome. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020caribbean/en/>

**Ministry of Agriculture, Lands, Marine Resources and Agro-Industry (MALMRA).** 2013. *Antigua & Barbuda presentation to the Workshop for the Caribbean FAO/UNFPA Guidelines for integrating agricultural and population censuses*. Port of Spain, Trinidad and Tobago, 10-12 June 2013. (also available at [http://www.fao.org/fileadmin/templates/ess/documents/meetings\\_and\\_workshops/IICA\\_2013/Linkages\\_TT\\_10-12June2013/Presentations/Antigua\\_and\\_Barbuda.pdf](http://www.fao.org/fileadmin/templates/ess/documents/meetings_and_workshops/IICA_2013/Linkages_TT_10-12June2013/Presentations/Antigua_and_Barbuda.pdf)).

## 14. CONTACTS

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Website: <https://statistics.gov.ag>

<sup>2</sup> Therefore, this publication does not include the tables with census results for the CA 2007.

## 1. HISTORICAL OUTLINE

The first agricultural census (AC) in Argentina was conducted in 1888. Subsequently, eleven ACs were carried out in 1895, 1908, 1914, 1937, 1947, 1952, 1960, 1969, 1988, 2002 and 2008. The data reported here relate to the AC conducted in 2008.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The AC legislation includes the following:

- Argentine Law 17622 of January 1968, Executive Orders 3110/70 and 1831/93, and Provision 176/99 on Statistical Secrecy, which establish the creation and operation of the National Institute of Statistics and Censuses (INDEC); and
- Decree No. 1764, of 28 November 2007, which established the undertaking of the AC 2008 covering agriculture and forestry.

### **Institutional framework and international collaboration**

The INDEC is the federal agency responsible for planning and coordinating national censuses and other national-level statistical surveys. The INDEC is under the direct oversight of the Secretariat of Economic and Regional Planning<sup>1</sup> of the Ministry of Economy and Production (MECON).<sup>2</sup> The INDEC coordinates the National Statistics System (SEN)<sup>3</sup> through which the national, provincial and local statistical services work together. Each provincial government has a statistics bureau, called a Provincial Direction of Statistics (DPA),<sup>4</sup> which collects and processes information.

A National Census Committee (NCS) was created under Decree No. 1764 and was chaired by the INDEC. The NCS integrated members from the Ministry of Economy (the Secretary of Agriculture), the Ministry of the Interior, the Ministry of Education, the Ministry of Science and Technology and the Ministry of Defence.

### **Census staff**

The staff involved in the field work included 24 census coordinators (one in every province and the autonomous city of Buenos Aires), 14 subcoordinators, 100 chief supervisors, more than 1 000 field supervisors and approximately 6 000 enumerators. Each enumerator had an average workload of 55 farms.

## 3. REFERENCE DATE AND PERIOD

### **Reference days:**

- 31 December 2007, for items on the identification of the holding, total area of the holding, area of permanent crops, etc.
- 30 June 2008, for inventories of livestock, agricultural machinery, etc.

**Reference period:** the agricultural year (from 1 July 2007 to 30 June 2008), for crop production, crop and livestock sales, labour, etc.

## 4. ENUMERATION PERIOD

The AC 2008 was undertaken between June 2008 and October 2009.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production) and forestry activities.

The **statistical unit** was the agricultural holding (Explotación Agropecuaria, or EAP), defined as “the organizational unit of agricultural production with at least 500 m<sup>2</sup> within a single province that, regardless of the number of parcels: (i) produces crop, livestock or forestry goods for marketing; (ii) has a management that manages the functions and assumes the risks associated with production activities; and (iii) utilizes in all its parcels the same production means and part of the same labour”. The agricultural holdings comprised both holdings in the household-sector and in non-household-sector.

## 6. GEOGRAPHIC COVERAGE

The AC 2008 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following threshold was established for an agricultural holding: 500 m<sup>2</sup> (0.05 ha) of the area of the holding.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2008.

<sup>1</sup> In Spanish, *Secretaría de Programación Económica y Regional*.

<sup>2</sup> *Ministerio de Economía y Producción*.

<sup>3</sup> *Sistema Estadístico Nacional*.

<sup>4</sup> *Dirección de Estadística*.



**Frame**

For census purposes, INDEC mapping divides the territory of each province into census “fractions” (*fracciones*), further divided into *radios*. This division is fundamentally linked to the population census. The *radio* may be classified as one of three types: rural, urban and mixed. Most of the *radios* classified as rural and mixed were covered by the AC; urban areas were excluded. In each province, *radios* that were classified as rural but that were part of mountainous areas, deserts, lake areas and watercourses were excluded. This selection of *radios* yielded the territory to be covered by the AC 2008.

**Complete and/or sample enumeration methods**

The census was a complete enumeration exercise.

**Sample design**

Not applied.

**Data collection methods**

Each province was divided in Enumeration Areas (EAs) and each EA into census segments. Field enumerators using paper questionnaires canvassed the producers with EAPs in these segments. The data collection was carried out using the PAPI method.

**Questionnaire(s)**

Two types of questionnaire were used for data collection. The first, comprehensive questionnaire included the census items related to land, irrigation, crops, livestock, forestry, agricultural practices, machinery and equipment, labour and agriculture. The second questionnaire was used to collect some economic data on the holding.

The AC questionnaire included all 16 core items recommended by FAO for the WCA 2010.

**9. USE OF TECHNOLOGY**

Provisional census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Manual data entry was used for census data capture. SAS was used for data processing and analysis, and for generating tables.

**11. CENSUS DATA QUALITY**

Post-census checks against external data, as well as against data from the previous census, showed that significant undercoverage had taken place. For this reason, only preliminary results were disseminated. Officially, 24 million ha are recognized not to have been censused (approximately 14 percent of the undercoverage).

**12. DATA DISSEMINATION**

Only certain provisional census data at the national level were disseminated (in October–November 2009). The census report, with final results, was not published, because data collection had not been completed in some important agricultural provinces, such as Buenos Aires and Corrientes. Instead, census results were published separately at provincial level only (for the 23 provinces).<sup>5</sup>

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 12–16 December 2016, Montevideo, Uruguay. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 10 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020montevideo/en/>

**Instituto Nacional de Estadística y Censos (INDEC).** 2019. Instituto Nacional de Estadística y Censos: República Argentina. In: *INDEC* [online]. Buenos Aires, Argentina. [Cited 2 August 2019]. <https://www.indec.gob.ar/>

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<sup>5</sup> Therefore, this publication does not include the tables with census results for the AC 2008.

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) of Belize was conducted in the frame of the 1970 World Census of Agriculture round, followed by a second AC carried out in 1984/1985. The third AC, to which the metadata review and data presented here refer, was carried out in 2011.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Statistical Institute of Belize (SIB) is the legally designated coordinator of the Belize National Statistical System. The SIB is mandated to designate statistics produced by the state agencies as official statistics.<sup>1</sup> It was set up on 1 April 2007 as an autonomous body having the mandate to collect, compile, analyse and disseminate official statistics related to demographic, social, environmental and economic activities of Belize.

There is no specific legal basis for the conduct of the AC.

### **Institutional framework and international collaboration**

The Ministry of Agriculture, Fisheries, Forestry, the Environment, Sustainable Development and Immigration (MAFFESD&I) was the implementing agency for the AC 2011. All key dimensions of the census (planning, implementation etc.) were handled by the Department of Agriculture of the MAFFESD&I (DoA). The SIB assisted with recruitment and with the scanning of questionnaires. The central census office was in Belmopan. Six district offices were organized at national level.<sup>2</sup> No steering committee at national or subnational level was established. FAO provided technical assistance for the elaboration of the census questionnaire and training manual.

### **Census staff**

The AC 2011 census staff included two census coordinators, six district agricultural coordinators, 24 supervisors, 168 enumerators, and one person as supporting staff.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 February 2011, for stock items, such as farm area, land tenure, land use, livestock numbers.

**Reference period:** calendar year 2010 (from 1 January to 31 December 2010), for flow items, such as planted area, harvested area, machinery and equipment, and farm labour.

## 4. ENUMERATION PERIOD

Data collection was undertaken from 1 February to 31 August 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural production activities (crop and livestock production). Information on aquaculture and agroforestry activities was also collected.

The **statistical unit** was the farm, defined as an economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form, or size. The farmland may consist of one or more parcels, in one or more separate locations; however, they must all be within the same district and share the same “production means” utilized by the farm, such as labour, farm buildings, and machinery or draught animals.

## 6. GEOGRAPHIC COVERAGE

The AC 2011 covered the entire country (both rural and urban areas) except Belize City.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were applied for defining the farm:

- 0.5 acres (approximately 0.202 ha) with at least one of the following land uses on the day of the census: (i) temporary and permanent crops (pure and mixed stands) and forages, (ii) fallow for more than one year, but less than three years, or (iii) pastures; or
- any piece of land that does not meet the conditions mentioned above, but has any of these livestock on the census day: (i) at least two head of cattle, or five goats, pigs and/or sheep combined, (ii) at least ten chickens, ducks or geese combined, (iii) any aquaculture ponds, or (iv) at least ten bee colonies.

<sup>1</sup> See <http://sib.org.bz/data-portals/bnss/>

<sup>2</sup> Corozal, Orange Walk, Belize, Cayo, Stann Creek, Toledo.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2011.

### **Frame**

A list of agricultural households was provided by the 2010 Population and Housing Census (PHC). In addition, to update that list, a village listing form was used to identify first agricultural households, and then farms; the head of household was asked the screening questions (see threshold point 7) and when a “yes” answer was given, the enumerator proceeded with the questionnaire. Belize used the EAs established for the PHC 2010. In 2002, the DoA conducted an exercise for setting up the Belize Farm Registry (FR).

### **Complete and/or sample enumeration methods**

The survey universe was composed of all farms (reporting units) existing in Belize on the census day. The AC 2011 was carried out on a complete enumeration basis.

### **Sample design (if sampling was used)**

Not applicable.

### **Data collection method(s)**

Face-to-face interviewing using paper questionnaires (the PAPI method) was applied in the AC 2011.

### **Questionnaire(s)**

One questionnaire was used for data collection.

The AC 2011 questionnaire covered 15 items from the 16 core items recommended in the WCA 2010.<sup>3</sup>

## 9. USE OF TECHNOLOGY

Optical scanning was used for data capture.

## 10. DATA PROCESSING AND ARCHIVING

The SIB scanned the questionnaires to capture the census data.

## 11. CENSUS DATA QUALITY

Several issues related to the quality of the enumerators’ work in filling in the census questionnaires and to the respondents’ misunderstanding certain questions were identified. These issues resulted in poor clarity of numbers, sums of numbers not being equal to the sums recorded, unreliable data on areas for mixed crops, etc. and affected the quality of data and the time required for data entry and data processing process.

## 12. DATA DISSEMINATION

No census results were disseminated at the time this publication was produced.<sup>4</sup>

## 13. DATA SOURCES

**FAO.** 2017. Regional Roundtable on the Programme for the Census of Agriculture 2020 (WCA 2020), 22–26 May 2017, Port of Spain, Trinidad and Tobago. In: *World Programme for the Census of Agriculture*: [online]. Rome, Italy. [Cited 30 August 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020caribbean/en/>

**MAFFESD&I.** 2013. *Belize presentation to the Workshop for the Caribbean FAO/UNFPA Guidelines for integrating agricultural and population censuses*. Port of Spain, Trinidad and Tobago, 10–12 June 2013. (also available at [http://www.fao.org/fileadmin/templates/ess/documents/meetings\\_and\\_workshops/IIICA\\_2013/Linkages\\_TT\\_10-12June2013/Presentations/Belize\\_Agricultural\\_statistical\\_data\\_collection.pdf](http://www.fao.org/fileadmin/templates/ess/documents/meetings_and_workshops/IIICA_2013/Linkages_TT_10-12June2013/Presentations/Belize_Agricultural_statistical_data_collection.pdf)).

Information provided by the MAFFESD&I.

## 14. CONTACT

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<sup>3</sup> The following item was not covered: “Other economic production activities of the holding’s enterprise”.

<sup>4</sup> Therefore, this publication does not include the tables with census results for the AC 2011.

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) was conducted in 1950 and the second in 1984. The 2013 AC, to which the present metadata review and data refer, was the third census to be conducted in the Plurinational State of Bolivia.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis of the AC 2013 was provided by the following:

- Constitution of 2009, Article 298, paragraph I, number 16;
- Decree Law No. 14100, of 5 November 1976, which established that the National Institute of Statistics (INE) is the technical executive body of the National Statistical Information System (SNIE) and has the responsibility for directing, planning and conducting all activities related to the implementation of the national agricultural censuses;
- Supreme Decrees No. 13659 (of 14 June 1976), No. 16156 (of 1 February 1979), No. 17358 (of 25 April 1980), No. 19417 (of 21 February 1980) and No. 20345 (of 20 June 1984), which entrust the INE with the planning and realization of national agricultural censuses; and
- Supreme Decree 29560, of 14 May 2008, issued by the Minister Council of Government, authorizing INE to carry out the AC 2013.

### **Institutional framework and international collaboration**

In 2013, the AC was under the responsibility of the INE, with support from the Ministry of Development Planning (MPD) and the Ministry of Rural Development and Lands (MDRT).<sup>1</sup> A Committee for the AC 2013 was established, comprising relevant stakeholders. The Committee was involved in activities related to the elaboration of the census instruments, planning of census operations, etc.

### **Census staff**

The census staff involved in the data collection operation consisted of 8 849 people, including 5 500 enumerators, 1 833 supervisors and 1 516 other personnel.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for livestock, machinery and equipment, etc.

**Reference period:** the agricultural year (July 2012–June 2013), for land use, labour, etc.

## 4. ENUMERATION PERIOD

The enumeration was carried out from 15 September to 15 November 2013.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF STATISTICAL UNIT

The **census scope** covered agricultural (crop and livestock production) activities, as well as forestry activities, the collection or extraction of non-timber species (chestnut, rubber, cocoa, etc.), hunting and fishing. A community survey was carried out together with the AC 2013.

The **statistical unit** was the agricultural production unit (UPA), which “comprises the land or parcel, set of land or parcels, used wholly or partially for agricultural activities, and that is conducted as an economic unit by a producer, regardless of size, tenure or legal status”.

## 6. GEOGRAPHIC COVERAGE

The AC covered all rural areas and certain urban areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No exclusions were applied in the AC 2013.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2013.

### **Frame**

The census frame was established using the list of producers at the community level, based on which UPAs and plots with agricultural activity were identified. The cartography and the list of producers facilitated the location of UPAs in the field.

<sup>1</sup> On 16 February 2011, by means of Supreme Decree No. 0796, the Minister of Development Planning is authorized to sign the Financing Agreement to finance the project titled *Fortalecimiento de la Capacidad Estadística y de la Base de Información para la Planificación Basada en Evidencias (FCEBIPBE)*, with the International Development Association (IDA) of the World Bank. On 28 June 2011, the Financing Agreement 4845 - BO was approved through Law No. 146. On 15 July 2011, through a Bi-Ministerial Resolution between the Ministry of Development Planning and the Ministry of Economy and Public Finance, they decided to appoint the National Institute of Statistics (INE), the executing entity of the Financing Agreement 4845 - BO.

**Complete and/or sample enumeration methods**

The AC 2013 was conducted by complete enumeration.

**Sample design (if sampling was used).**

No sampling was used.

**Data collection method(s)**

The data collection was carried out using face-to-face interview and paper questionnaires, that is, the PAPI method.

**Questionnaire(s)**

Two questionnaires were used for data collection: (i) a census questionnaire, to collect information from the UPAs; and (ii) a community questionnaire, to collect community-level data. The AC 2013 census questionnaire covered all 16 core items recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Global Positioning System (GPS) was used to locate the UPAs. The census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Once the fieldwork was completed, the information was processed. The latter stage of work comprised: coding, data entry, processing, and building the database. Data entry and coding involved more than 700 persons. This activity was carried out from December 2013 to July 2014. At the same time, consistency criteria and data imputation rules were formulated, in cooperation with the Brazilian Institute of Geography and Statistics (IBGE). For the CA, it was decided to use open-source Free Software technology. The SPSS programme was used to tabulate the results.

**11. CENSUS DATA QUALITY**

Validation of the census data was automated. Automatic criteria of consistency and imputation were established for each question, through the relationship of variables and the grouping of atypical cases or inconsistencies; in these cases, the PostgreSQL software was used.

**12. DATA DISSEMINATION**

The dissemination of census results was performed using printed publications and through the INE website. Likewise, the database was available to users in Retrieval of Data for small Areas by Microcomputer (REDATAM), along with summary data sheets at municipal and community level. The publications included census results at national and departmental level. Several events with the participation of authorities, agricultural organizations and other stakeholders were organized to disseminate the census results.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 12–16 December 2016, Montevideo, Uruguay. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 10 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020montevideo/en/>

**Instituto Nacional de Estadística.** 2015a. *Censo Agropecuario 2013, Bolivia*. La Paz, Bolivia. (also available at [https://www.sudamericarural.org/images/en\\_papel/archivos/CENSO-AGROPECUARIO-BOLIVIA\\_final.pdf](https://www.sudamericarural.org/images/en_papel/archivos/CENSO-AGROPECUARIO-BOLIVIA_final.pdf)).

**Instituto Nacional de Estadística.** 2015b. *Manual De Jefe(A) de Brigada y Empadronadores* [online]. La Paz, Bolivia. [Cited 16 September 2019]. <https://slideplayer.es/slide/1114704/>

**14. CONTACT**

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## BOLIVIA (PLURINATIONAL STATE OF) – AGRICULTURAL CENSUS 2013 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total agricultural production units</b>	<b>871 927</b>	<b>34 654 984</b>
Individual producer	855 356	28 744 711
Society	13 166	2 792 652
Government	1 573	105 453
Community	683	1 297 749
Others	1 149	1 714 420

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>871 927</b>	<b>34 654 984</b>
Holdings without land	10 319	
Holdings with land	861 608	34 654 984
Legal ownership	767 108	29 140 111
Rented from others	22 860	483 000
Other form of tenure	71 640	5 031 873

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>871 927</b>	<b>34 654 984</b>
Holdings without land	10 319	
Holdings with land	861 608	34 654 984
Less than 0.1 ha	52 224	2 525
0.10–0.19 ha	35 070	4 941
0.20–0.49 ha	66 829	21 066
0.50–0.99 ha	76 299	51 195
1–1.99 ha	110 819	147 508
2–2.99 ha	74 162	170 970
3–3.99 ha	52 793	173 497
4–4.99 ha	39 047	166 953
5–9.99 ha	115 909	781 659
10–19.99 ha	95 167	1 243 908
20–49.99 ha	69 401	2 048 769
50–99.99 ha	39 890	2 370 734
100–199.99 ha	12 887	1 635 679
200–499.99 ha	9 833	3 017 517
500–999.99 ha	5 503	3 306 785
1 000–2 499.99 ha	3 111	4 914 112
2 500–4 999.99 ha	1 872	6 579 127
5 000 ha and over	792	8 018 039

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>871 927</b>	<b>34 654 984</b>
Agricultural land	n.a.	18 656 538
Arable land	n.a.	5 265 251
Land under temporary crops	n.a.	2 539 689
Land under temporary meadows	n.a.	1 635 898
Land temporarily fallow	n.a.	1 089 665
Land under permanent crops	n.a.	220 550
Permanent meadows and pastures	n.a.	13 170 736
Forest and other wooded land	n.a.	13 844 735
Other land	n.a.	2 153 712

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX	
	Number
<b>Total</b>	<b>868 522</b>
Male	649 198
Female	219 205
Not specified	119

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>4 689 264</b>
Male	2 882 291
Female	1 806 973

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	322 388	8 315 504
Buffaloes	167	16 785
Sheep	260 039	6 267 743
Goats	73 372	1 868 512
Pigs/swine	211 759	1 415 274
Equines	n.a.	665 683
Horses	n.a.	324 756
Asses	n.a.	307 684
Mules and hinnies	n.a.	33 243
Camels and camelids	n.a.	2 506 435
Alpacas	10 047	444 273
Llamas	70 820	2 062 162
Poultry (1 000 head)	n.a.	5 833
Chickens	n.a.	5 159
Ducks	n.a.	605
Turkeys	n.a.	47
Other	n.a.	22
Other animals	n.a.	n.a.
Rabbits and hares	n.a.	759 850
Insects		
Bees (hives)	21 220	89 421

IRRIGATION	
	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>251 042</b>

MACHINERY AND EQUIPMENT USED ON THE HOLDING	
	Units
Total tractors of all kinds	36 562
Other (machine-powered)	
Powered threshers	1 847
Harvesters with motor	6 175
Balers with motor	801
Motocultors	4 725
Mowers or cutters	259 062
Harrows	29 018
Fertilizer hoppers	3 106
Seeders	154 849

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) in Brazil was conducted in 1920. Since 1940, ACs have been conducted on a decennial basis<sup>1</sup> until 1970, and quinquennially<sup>2</sup> thereafter, until 1985. A lack of resources delayed the implementation of the AC 1996 and of its next edition, the AC 2006, to which the metadata review and data presented here refer.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The AC legislation includes:

- Law No. 5878 of 11 May 1973, Article 2 (Items I and II), with reference to the basic objective of the Brazilian Institute of Geography and Statistics (IBGE); and
- Decree 74084 of 20 May 1974, which approved the General Plan of Statistical and Geographical Information.

### **Institutional framework and international collaboration**

Within the legislation in force, IBGE was responsible for planning, conducting and coordinating the AC 2006 in Brazil. The Research Directory, the Operational Coordination of the Census and the Technical Management of the Agricultural Census (GTA) of IBGE were directly responsible for the census. The fieldwork was coordinated by IBGE territorial units.

### **Census staff**

Approximately 90 000 people were trained for the fieldwork, out of which 80 000 were engaged as field interviewers and field supervisors; other 10 000 people served as reserve staff. Field supervision was also provided by the GTA team.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 December 2006, for items on total area of the holding, land tenure, livestock, machinery, etc.

**Reference period:** calendar year 2006, for items on crop and animal production, investments, inputs, etc.

## 4. ENUMERATION PERIOD

The census enumeration was conducted from 16 April to 31 August 2007.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and livestock production) activities, as well as forestry and aquaculture activities.

The **statistical unit** was the agricultural holding, defined as any production unit dedicated wholly or partially to agricultural, forestry and aquaculture activities, subject to a single management, with the objective of producing for sale or subsistence, regardless of size, legal form (own, partnership, lease, etc.) or location (rural or urban). The agricultural holdings were classified according to the legal status of the producer as: individual holder, condominium, consortium or partnership; cooperative; incorporated or limited liability company; public utility institutions (church, NGO, hospital), or government.

## 6. GEOGRAPHICAL COVERAGE

The census covered the entire country, including urban areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No cut-off thresholds were used for agricultural holdings. More detailed information was collected from the holdings above a certain threshold (for further details, see below, "Data collection method(s)" subsection).

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2006.

### **Frame**

The 2000 Population and Housing Census and the cartographic documentation constituted the source of the AC 2006 frame. No list frames were available in digital media with georeferenced addresses of the holdings. Census coverage was ensured on the basis of the canvassing of the EAs by enumerators.

### **Complete and/or sample enumeration methods**

The AC 2006 was a complete enumeration operation of all agricultural holdings in the country.

<sup>1</sup> Census years: 1940, 1950, 1960 and 1970.

<sup>2</sup> Census years: 1975, 1980 and 1985.

**Sample design (if sampling was used)**

No sampling was used.

**Data collection method(s)**

Data collection was performed through face-to-face interviews using Personal Digital Assistants (PDAs). Due to the use of PDAs, the data collection programme was structured to allow for gathering more details on specific production issues. The PDAs were programmed in a modular manner, to enable use of a detailed questionnaire on all holdings with more than:

- 50 head of cattle;
- five cows for milk production;
- 2 000 head of poultry;
- permanent crops over 50 feet; or
- forest products over 500 feet.

**Questionnaire(s)**

An electronic questionnaire was used for data collection. The AC 2006 covered all 16 items recommended by FAO under the WCA 2010.

**9. USE OF TECHNOLOGY**

IBGE introduced electronic questionnaires into PDAs integrated with GPS to obtain georeferenced information on all farms in the country. The census data were disseminated online.

**10. DATA PROCESSING AND ARCHIVING**

The entire data collection and supervision software was developed in house by IBGE, using the Visual Studio platform in the Microsoft Operations Manager 2005 environment and Microsoft SQL Server 2000, with the assistance of Microsoft Brazil consulting. In addition, the GEOPAD application was installed to view, navigate and view maps and use GPS guidance. Updated versions of the software were installed automatically as soon as census enumerators connected the PDAs to the central server to transmit the data collected. Once internally validated by the device, the data were immediately transmitted to the database at the IBGE state unit. The previous AC (1996) served as the basis for defining the parameter values for the electronic editing process.

**11. CENSUS DATA QUALITY**

Automatic validation was incorporated into PDAs. Previously programmed skip patterns and real-time edits, performed during enumeration, ensured faster and more reliable interviews. In addition, the Bluetooth® technology incorporated into the PDAs allowed for direct data transmission to IBGE's central mainframe by each of enumerators on a weekly basis.

**12. DATA DISSEMINATION**

The preliminary census results were published in 2007. The final results were released in 2009 through a printed volume and CD-ROMs. The census results were disseminated at the national and subnational scope (country, state and municipality) and are available online at IBGE's website.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 12–16 December 2016, Montevideo, Uruguay. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 10 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020montevideo/en/>

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**IBGE.** 2012. *Censo Agropecuário, 2006, Brasil, Grandes Regiões e Unidades da Federação, Segunda apuração*. Rio de Janeiro, Brazil. (also available at [ftp://ftp.ibge.gov.br/Censo\\_Agropecuario/Censo\\_Agropecuario\\_2006/Segunda\\_Apuracao/tabelas\\_pdf/tab\\_2\\_7.pdf](ftp://ftp.ibge.gov.br/Censo_Agropecuario/Censo_Agropecuario_2006/Segunda_Apuracao/tabelas_pdf/tab_2_7.pdf)).

**Oliveira, O., Bolliger, F. and Florido, A.** 2007. *Brazil Agricultural Census 2006: Innovations and Impact*. Paper presented at the Fourth International Conference on Agriculture Statistics, Volume 4 (ICAS-4), 22–24 October 2007, Beijing, China. (also available at <http://www.stats.gov.cn/english/icas/papers/P020071017541825784798.pdf>).

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# BRAZIL – AGRICULTURAL CENSUS 2006 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS <sup>1</sup>		
	Holdings	Area (ha)
<b>Total</b>	<b>5 175 636</b>	<b>333 680 037</b>
Individual	4 952 265	280 849 807
Condominium, consortium or partnership	115 700	18 584 255
Cooperative	9 084	1 395 045
Limited liability company	53 656	28 581 360
Institution	1 464	441 475
Government	4 396	655 854
Others	39 071	3 172 241

LAND TENURE	
	Area (ha)
<b>Total</b>	<b>333 680 037</b>
Owned	302 138 391
Non-legal ownership	5 957 124
Land under partnership	3 240 841
Non-legal owner-like possession	7 216 236
Rented from others	15 127 498

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>5 175 636</b>	<b>333 680 037</b>
Holdings without land	255 019	
Holdings with land	4 920 617	333 680 037
Less than 0.1 ha	101 291	3 749
0.1–0.2 ha	50 206	7 039
0.2–0.5 ha	165 435	55 028
0.5–1 ha	289 905	199 013
1–2 ha	442 163	563 899
2–3 ha	319 671	711 147
3–4 ha	256 148	826 226
4–5 ha	215 988	947 784
5–10 ha	636 344	4 484 892
10–20 ha	736 798	10 289 758
20–50 ha	843 920	26 120 877
50–100 ha	390 882	26 483 343
100–200 ha	219 432	29 218 870
200–500 ha	150 698	46 384 925
500–1 000 ha	54 158	37 240 391
1 000–2 500 ha	32 242	48 640 082
2 500 ha and over	15 336	101 503 014

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>5 175 636</b>	<b>333 680 037</b>
Agricultural land	4 789 490	220 534 031
Land under temporary and forage crops	3 313 755	48 812 817
Land under permanent crops	1 480 251	11 679 152
Land under cultivated pasture	1 699 329	102 408 873
Land under natural pasture	1 672 338	57 633 189
Forest and wooded land	1 981 750	91 724 815
Cultivated area with forest species also used for crops and grazing animals	305 825	8 316 119
Other land	2 419 473	13 107 485

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>4 952 265</b>	<b>280 849 807</b>
Male	4 319 123	264 628 226
Female	633 142	16 221 581

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>12 801 406</b>
Male	8 291 357
Female	4 510 049
Engaged in agricultural activities on the holding	12 577 729

EMPLOYEES WORKING ON THE HOLDING	
	Number
<b>Total</b>	<b>3 766 799</b>
Male	3 224 360
Female	542 439
Individuals	2 881 232
Male	2 477 938
Female	403 294
Juridical persons	624 362
Male	526 476
Female	97 886
Others	261 205
Male	219 946
Female	41 259

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE	
	Number
<b>Total</b>	<b>4 952 265</b>
Male	4 319 123
Female	633 142
Under 25 years	163 187
Male	142 065
Female	21 122
25–35 years	669 555
Male	602 069
Female	67 486
35–45 years	1 081 097
Male	967 705
Female	113 392
45–55 years	1 152 280
Male	1 012 100
Female	140 180
55–65 years	1 010 822
Male	868 759
Female	142 063
65 years and over	875 324
Male	726 425
Female	148 899

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>3 927 445</b>	
Cattle	2 678 392	176 000 000
Buffaloes	13 279	885 119
Sheep	438 623	14 167 504
Goats	286 676	7 107 613
Pigs/swine	1 496 111	31 189 351
Equines	1 764 358	5 947 076
Horses	1 407 817	4 541 833
Mules and hinnies	366 413	750 529
Asses	394 710	654 714
Poultry (1 000 head)	2 728 938	1 174 118
Chickens	2 713 403	1 143 456
Other	299 105	30 662
Other animals	n.a.	
Rabbits	17 615	294 584

<sup>1</sup> Production units engaged in agricultural, forestry and aquaculture activities.

## 1. HISTORICAL OUTLINE

Starting in 1896, a separate census of agriculture (CA) was taken every five years in Manitoba and, beginning in 1906, in Alberta and Saskatchewan. Since 1956, the five-year agricultural census was extended to the entire country, and conducted in conjunction with the Census of Population (CP). The metadata review and data presented here refer to Canada's CA 2011.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Constitution Act of 1867 (formerly, the British North America Act) determined that a census would be taken every ten years, starting in 1871. The Statistics Act of 1971 stipulates that a CP and a CA shall be taken every five years, in years ending in one and six. The provisions of the Statistics Act (amended in 2005) on conducting the CA are: (i) Subsection 19(1) and Section 20; (ii) Subsection 21(1); and (iii) Subsection 21(2). According to the Act, the CA and the CP should be conducted in the same month.

### **Institutional framework and international collaboration**

Statistics Canada, a centralized statistical agency, is in charge of conducting the CA and the CP. The development, testing, processing, data validation and preparation for data dissemination for the CA and the CP are mostly handled by different groups within Statistics Canada.

### **Census staff**

No enumerators were directly involved in field data collection. In 2011, for the first time, all known farm operations received their questionnaires by mail through Canada Post rather than through a local enumerator. Farm operators either mailed back the form directly to Statistics Canada in the National Capital Region, or completed and submitted an electronic form on the Internet.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 10 May 2011, for livestock, management decisions, the value and inventory of farm machinery and equipment, etc.

### **Reference periods:**

- reference year 2011, for land tenure, net area, hay and crops, etc.;
- the calendar year 2010, for farm labour, financial information, information on agricultural production methods, etc.

## 4. ENUMERATION PERIOD

Questionnaires were posted on 2 May 2011. Respondents were asked to complete and return their questionnaires on "census day" (10 May 2011). Data collection was closed on 25 November 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural operation, defined as "a farm, ranch or other agricultural operation that produces at least one agricultural product intended for sale".

## 6. GEOGRAPHIC COVERAGE

The CA 2011 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Only market-oriented agricultural operations were covered by the CA 2011.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CA 2011. The CA 2011 was conducted in conjunction with the CP. The two censuses were conducted concurrently and shared a common "census day" (see section 4).

### **Frame**

The CP questionnaire, which was received by all households, including agricultural households, included a question asking if any household member was the operator of an agricultural operation, as defined by the census scope. This information was provided to the CA staff during the enumeration period, to supplement the frame.

### **Complete and/or sample enumeration methods**

The CA is a complete enumeration of all agricultural operations, including those operated by agricultural households and corporate farm enterprises.

### **Sample design (if sampling was used)**

No sampling was used.

**Data collection method(s)**

Paper, Internet and telephone collection methods were available. Questionnaires were either completed on paper and mailed back to Statistics Canada's Data Operations Centre, completed online via Computer-assisted Web Interviewing (CAWI), or completed over the phone via Computer-assisted Telephone Interviewing (CATI) by calling the toll-free Census Help Line.<sup>1</sup>

**Questionnaire(s)**

The CA used a single questionnaire, available in both English and French. The CA 2011 questionnaire covered 14 of the 16 core items<sup>2</sup> recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

The CAWI and CATI methods were applied for census data collection. Optical scanning was used for the data capture of paper questionnaires. An online database enables users to retrieve customized tables with census data at the national, state and county levels.

**10. DATA PROCESSING AND ARCHIVING**

The CA and CP questionnaires were separately dealt with once they arrived at Statistics Canada's Data Operations Centre. They were sorted, electronically scanned and the data automatically captured using Intelligent Character Recognition (ICR). Any responses that were not recognized by the ICR process were sent to a Statistics Canada employee, who reviewed the questionnaire image and entered the correct data into the system. Questionnaires completed and submitted on the Internet also went to the Data Operations Centre.

Once captured, the data were loaded onto an automated processing system that took them through detailed edit, follow-up and imputation processes. The data were first subjected to a series of rigorous quality control and processing edits to identify and resolve problems related to inaccurate, missing or inconsistent data. A Statistics Canada employee then followed up on the problematic records that could not be resolved in editing, to clarify the missing or incomplete data. Finally, situations that could not be resolved through either editing or follow-up were handled with an imputation procedure that replaced each missing or inconsistent response either with a value consistent with the other data on the questionnaire or with a response obtained from a similar agricultural operation.

**11. CENSUS DATA QUALITY**

After closing the data collection period, a data validation and certification process was conducted.

A coverage evaluation study was undertaken during the period of follow-up collection, to determine the level of CA 2011 undercoverage in three important dimensions: farm count, land area and total sales. The resulting undercoverage estimates inform the data certification process and are published to advise users on data quality.

**12. DATA DISSEMINATION**

The CA 2011 had three major data releases, online and free of charge:

- basic counts and totals for all farm and farm operator variables were released on 10 May 2012;<sup>3</sup>
- selected historical farm and farm operator data (some series covering 1921–2011) were released on 10 December 2012; and
- selected data on the socio-economic characteristics of farm operators, farm families and the farm population, based on the agriculture-population linkage database were released on 27 November 2013.

**13. DATA SOURCES**

**Statistics Canada.** 2012a. 2011 Census of Agriculture. In: *Statistics Canada* [online]. Ottawa, Canada. [Cited 19 August 2019]. <https://www.statcan.gc.ca/eng/ca2011/index>

**Statistics Canada.** 2012b. *Overview of the Census 2011, Census year 2011*. Catalogue No. 98-302-XIE. Ottawa, Canada. (also available at <https://www12.statcan.gc.ca/census-recensement/2011/ref/overview-aperçu/98-302-XIE.pdf>).

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Website: <https://www.statcan.gc.ca/>

<sup>1</sup> A "reminder questionnaire" was posted in mid-May to farm operators from whom a response had not yet been received. Starting from 1 June 2011, outstanding questionnaires were followed up on by telephone, with the data collection period continuing through the summer and early autumn until the close of collection on 25 November 2011.

<sup>2</sup> The following items were not covered: (i) "Presence of aquaculture on the holding"; and (ii) "Other economic production activities of the holding's enterprise".

<sup>3</sup> These data are tabulated at the national, provincial and three subprovincial levels of geography: (i) census agricultural region; (ii) census division; and (iii) census consolidated subdivision.

# CANADA – CENSUS OF AGRICULTURE 2011 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>205 730</b>	<b>64 812 723</b>
Sole proprietorship	114 006	25 018 970
Partnership without a written agreement	39 663	9 898 859
Partnership with a written agreement	10 672	3 175 933
Family corporation	35 749	20 659 199
Non-family corporation	4 965	3 033 436
Other operating arrangements	675	3 026 327

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>205 730</b>	<b>64 812 723</b>
Owned area	197 227	41 865 023
Leased from governments	17 591	8 936 156
Rented or leased from others	69 737	14 905 736
Area crop-shared from others	10 611	1 776 891
Land area used through other arrangements	10 564	643 341
Total area of land used by others <sup>1</sup>	34 686	3 314 424

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>205 730</b>	<b>64 812 723</b>
Less than 4 ha	12 991	22 749
4–28 ha	32 705	449 350
28–53 ha	24 205	942 272
53–73 ha	21 705	1 363 291
73–97 ha	11 719	976 636
97–162 ha	24 974	3 124 294
162–227 ha	15 053	2 858 013
227–308 ha	11 781	3 086 078
308–453 ha	13 413	4 944 602
453–647 ha	10 831	5 779 083
647–906 ha	9 222	6 974 869
906–1 165 ha	5 230	5 315 922
1 165–1 424 ha	3 482	4 440 041
1 424 ha and over	8 419	24 535 523

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>205 730</b>	<b>64 812 723</b>
Agricultural land	194 438	57 699 763
Arable land	166 161	37 285 042
Land under temporary crops	116 923	28 343 023
Land under temporary meadows	109 417	6 856 822
Land temporarily fallow	20 221	2 085 196
Land under permanent crops	17 599	178 739
Permanent meadows and pastures	114 640	20 235 982
All Other land	165 404	7 112 960

HOLDERS, BY SEX AND AGE <sup>2</sup>		Number
<b>Total</b>		<b>293 925</b>
Male		213 265
Female		80 665
Under 35 years		24 120
Male		17 870
Female		6 245
35–54 years		127 895
Male		89 630
Female		38 260
55 years and over		141 920
Male		105 755
Female		36 170

HOLDERS, BY SEX		
	Number <sup>2</sup>	Area operated (ha) <sup>3</sup>
<b>Total</b>	<b>293 925</b>	<b>64 812 723</b>
Male	213 265	63 439 903
Female	80 665	20 087 279

EMPLOYEES WORKING ON THE HOLDING		Number
<b>Total paid employees</b>		<b>297 683</b>
Permanent employee		112 059
Seasonal employee		185 624

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>n.a.</b>	
Cattle	85 890	12 789 965
Bison (buffalo)	1 211	125 142
Sheep	10 111	1 108 574
Goats	5 949	225 461
Pigs	7 371	12 679 104
Equines	50 668	434 880
Horses and ponies	47 454	392 340
Llamas and alpacas	4 107	31 499
Other equines	4 715	11 041
Poultry (1 000 head)	21 791	144 654
Chickens	20 645	133 026
Turkeys	2 767	8 022
Other	4 480	3 607
Other animals	n.a.	
Rabbits	2 792	184 935
Deer (excluding wild deer)	380	20 939
Mink	284	783 185
Elk (wapiti)	572	31 112
Wild boars	150	9 788
Insects		
Bees (colonies)	3 272	561 297

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
<b>Total tractors of all kind</b>	<b>190 162</b>	<b>685 914</b>
Tractors under 60 hp	141 853	311 782
Tractors over 149 hp	53 429	85 681
Other	n.a.	
Pick-ups and cargo vans	164 784	272 769
Other farm trucks	82 127	162 206
Cars and other passenger vehicles	81 316	96 711
Combines	70 007	90 903
Swathers and mower-conditioners	102 469	142 246
Balers	91 883	123 072
Forage harvesters	18 387	20 765
Tillage, cultivation, seeding and planting equipment	123 526	n.a.
Irrigation equipment	16 453	n.a.
All other farm machinery and equipment	158 016	n.a.

<sup>1</sup> Area of land used by others is excluded from total farm area.

<sup>2</sup> Holder counts have been independently randomly rounded to a multiple of 5. As a result, some totals may not be equal to the sum of their parts.

<sup>3</sup> Land areas corresponding to male and female holders do not add up to the total farm land area as some farms include both male and female operators.

## 1. HISTORICAL OUTLINE

The first agricultural census (AC) in Chile was conducted in 1930. Since 1936, ACs have been carried out regularly, on a ten-year basis,<sup>1</sup> normally following the Population and Housing Censuses (PHCs). The present metadata review and data refer to the seventh AC, the 2006/2007 National Census of Agriculture and Forestry (CAF).

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The Organic Law of the National Institute of Statistics (INE), No. 17374 of 15 October 1970 and the Decree of the Ministry of Economy No. 1062 of 30 October 1970, constitute the basis of the current institutional framework for conducting censuses in Chile. The Organic Law of the INE establishes, at Article 1, that the INE, as an independent, decentralized body, is the legal entity responsible for official statistics and censuses in the Republic of Chile, which is related to the Government through the Ministry of Economy, Development and Reconstruction (MEDR).

### *Institutional framework and international collaboration*

The INE is the technical body responsible for the preparation and organization of ACs, data processing and dissemination of census results. On the basis of Supreme Decree No. 373, approved on 14 December 2006, the MEDR indicates the year 2007 for conducting the CAF 2006/2007 and ordered, according to Article 3, the creation of the National Commission of the VII National Agricultural and Forestry Census, which was responsible for coordinating the census activities. The elaboration of the methodological instruments was carried out in consultation with the main users of agricultural and forestry statistics.

### *Census staff*

The staff involved in census activities comprised 1 583 persons, including 1 156 enumerators, 190 supervisors and 237 other personnel.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 March 2007, for inventory items, such as number of livestock, non-residential buildings (for keeping livestock), etc.

### *Reference periods:*

- agricultural year 2006/2007 (from 1 May 2006 to 30 April 2007), for land use, cultivated area, irrigated area, use of agricultural equipment, employment on the holding, organic agriculture, etc.
- years 2005/2006 and 2006/2007, for development instruments, loan instruments, etc.

## 4. ENUMERATION PERIOD

The fieldwork was carried out in 59 working days: from 12 March to 31 May 2007.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production) and forestry.

The **statistical unit** was the agricultural and forestry holding (AFH), defined as the unit comprising all land with crop, livestock or forestry managed by a holder, regardless of form of tenure or size. The holding may comprise part of a property (cadastral plot) or one or several adjacent or separate properties in the same commune, whenever they constitute a technical unit. Holdings were classified as being operated by: (i) a natural person; or (ii) a juridical person. The census results are provided for the overall AFHs, as well as separately for agricultural holdings.

## 6. GEOGRAPHIC COVERAGE

The CAF 2006/2007 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were established for a holding (at least one threshold should be met):

- 0.1 ha of temporary or permanent crops;
- 0.5 ha of meadows, provided that these are used for animal husbandry;
- 0.5 ha of forests;
- two large animals of two years of age and over, or four large animals, under two years of age;
- ten small animals;
- ten ostriches or emus;
- 50 geese, turkeys or rabbits;
- 100 other poultry; or
- ten beehives.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the CAF 2006/2007.

<sup>1</sup> 1936, 1955, 1965, 1976, 1997 and 2006/2007.

**Frame**

The CAF 2006/2007 used, as the starting point, the database of cadastral properties built on the basis of the information obtained from the Cadastre Register, updated in June 2006, which was integrated with the data from the sixth National Agricultural Census (1997). The resulting list was distributed to each of the 15 regions in the country to locate the properties and verify coverage.

**Complete and/or sample enumeration methods**

The CAF 2006/2007 was a complete enumeration operation of all agricultural holdings in the country.

**Sample design (if sampling was used)**

No sampling was applied.

**Data collection method(s)**

Data collection was done by means of face-to-face interviews, using the PAPI method.

**Questionnaire(s)**

For data collection, one questionnaire was used (which contained 451 questions grouped into 17 sections). For the extreme zones of the country, the census questionnaire was supplemented with two annexes, which included specific questions relevant to those regions.

The census covered all 16 items recommended by FAO to be collected in the WCA 2010.

**9. USE OF TECHNOLOGY**

The digital cartography generated in the INE was used for census preparation. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

The IT Department of the INE developed and implemented a computing and communication processing platform to provide support to all census phases, from data collection to data entry. This allowed for remote entry of the information collected during the census fieldwork, to perform the corresponding validations online and to execute the final storage in devices, all the while delivering the necessary security levels given the nature of the information processed. Data entry, validation and processing were carried out simultaneously in the 15 regions, which were divided into 61 census areas, each equipped with computers connected to the Internet by means of broadband connections.

**11. CENSUS DATA QUALITY**

During the field data collection, two validation manuals were used (“Correction Guidelines”): (i) the first manual, for enumerators, included instructions on dealing with inconsistencies in filling in the questionnaire; (ii) the second manual, for supervisors, provided instructions on verifying the consistency of the information, etc. The validation manuals were applied both to the main census form and to the annexes formulated for “extreme” zones.

**12. DATA DISSEMINATION**

The preliminary results were delivered in 17 tabulations and made public in October 2007. They included information from all sections of the questionnaire. All of the information in the tabulations with preliminary results was disaggregated geographically up to the commune level. In April 2008, microdata were released at the regional level, ensuring due protection of statistical secrecy.<sup>2</sup> The final tabulations, at national and regional level, were made available on the institutional website in April 2008. Printed reports and CD-ROMs are also available.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 12–16 December 2016, Montevideo, Uruguay. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 10 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020montevideo/en/>

**Instituto Nacional de Estadística (INE).** 2006. *VII censo agropecuario y forestal: manual del empadronador*. Santiago de Chile, Chile. (also available at [http://www.censoagropecuario.cl/aspectosmetodologicos/files/manual/manual\\_empadronador.pdf](http://www.censoagropecuario.cl/aspectosmetodologicos/files/manual/manual_empadronador.pdf)).

**Instituto Nacional de Estadística (INE).** 2008. Census reports and methodological notes. In: INE [online]. Santiago de Chile, Chile. [Cited on 2 August 2019]. <https://www.ine.cl/estadisticas/economia/agricultura-agroindustria-y-pesca/censos-agropecuarios>

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<sup>2</sup> Microdata are available on the website, upon request.

## CHILE – CENSUS OF AGRICULTURE AND FORESTRY 2006/2007 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Agricultural and forestry holdings</b>	<b>301 269</b>	<b>36 439 533</b>
Agricultural holdings	280 484	29 781 691
Civil persons	268 968	13 000 966
Juridical persons	11 516	16 780 725
Forestry holdings	20 785	6 657 842

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total agricultural holdings</b>	<b>280 484</b>	<b>29 781 691</b>
Holdings without land	1 824	
Holdings with land	278 660	29 781 691
Less than 1 ha	34 699	17 924
1–5 ha	84 975	209 799
5–10 ha	46 139	325 200
10–20 ha	42 611	595 899
20–50 ha	36 965	1 145 153
50–100 ha	14 911	1 028 222
100–200 ha	8 149	1 125 248
200–500 ha	5 677	1 736 509
500–1 000 ha	2 056	1 414 035
1 000–2 000 ha	1 048	1 440 758
2 000 ha and over	1 430	20 742 944

LAND USE		
	Holdings	Area (ha)
<b>Total agricultural holdings</b>	<b>280 484</b>	<b>29 781 691</b>
Agricultural land	n.a.	13 895 580
Cropland	n.a.	1 296 394
Fallow land	n.a.	353 036
Land under permanent pastures and meadows	n.a.	12 246 149
Other land	n.a.	15 886 111
Forest and wooded land	n.a.	6 404 907
Other land	n.a.	9 481 204

EMPLOYEES WORKING ON THE HOLDING, BY SEX <sup>1</sup>		Number
<b>Total employees</b>		<b>1 326 608</b>
Male		935 963
Female		390 645
Permanent employees		188 156
Male		168 262
Female		19 894
Temporary employees		1 138 452
Male		767 701
Female		370 751

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>n.a.</b>	
Cattle	125 408	3 718 532
Sheep	76 197	3 888 485
Goats	17 061	705 527
Pigs/swine	74 875	2 928 606
Horses	88 345	304 252
Mules and hinnies	2 730	6 667
Asses	4 609	15 016
Llamas	1 243	48 989
Alpacas	755	26 147
Other animals	n.a.	
Rabbits	2 777	43 630
Boar	245	4 005
Deer	77	5 827

METHODS OF IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>119 286</b>	<b>1 093 813</b>
Gravity	103 085	789 840
Traditional sprinkling	5 882	30 072
Spool or pivot	405	26 427
Drip and tape	15 834	209 349
Micro-spray and microjet	2 877	38 125

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	70 591	479 404
Vegetables and melons	94 822	95 551
Leguminous and tuber crops	66 196	70 899
Other temporary crops	n.a.	n.a.
Industrial crops	7 595	69 972
Flowers	2 964	2 124
Forage crops	54 018	510 371

PERMANENT CROPS		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Orchards	97 522	324 294
Vineyards (grapes)	17 529	128 946
Nurseries	956	2 298

<sup>1</sup> Table refers to agricultural holdings.

## 1. HISTORICAL OUTLINE

The first National Agricultural Census (AC)<sup>1</sup> in the Republic of Colombia was carried out in 1960 and covered 16 administrative departments. The second AC was carried out in 1970 and covered 21 administrative departments. The AC 2014 was the third agricultural census conducted in the country and covered all rural areas.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The AC legislation includes:

- Law 2 of 16 January 1962, Article 8 of which establishes that “starting with the year 1970, the censuses of population, buildings and houses and agriculture will have a decennial periodicity”;
- Law 79 of 1993;
- CONPES<sup>2</sup> 1881 of 1982, regarding the main characteristics of the third AC;
- Resolution 1680 of 2011, which adopted provisions for the participation of indigenous organizations in the censuses carried out by the National Administrative Department of Statistics (DANE);
- National Development Plan 2010–2014; and
- Article 61 of Law 1429 of 2010, through which the Colombian rural registry was established.

### **Institutional framework and international collaboration**

The AC 2014 was conducted by the DANE in close collaboration with the Ministry of Agriculture and Rural Development (MARD), which also provided financial assistance to the project. The census was also conducted in collaboration with, among others, the Ministry of Environment and Sustainable Development, the Technical Directorates of DANE, the DNP, the IDEAM, the National Natural Parks Directorate, the production unions, international and national expert committees, indigenous communities, Afro-Colombian organizations, and academics.

### **Census staff**

Approximately 25 000 persons were deployed to conduct the AC 2014.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as livestock numbers, machinery and equipment, non-residential buildings.

### **Reference periods:**

- the last 30 days (that is, the 30 days immediately preceding the day of the interview), for items on labour, the non-agricultural activities of the holding, etc.;
- the last 12 months, for items related to cropped area, aquaculture, etc.

## 4. ENUMERATION PERIOD

The census data collection was conducted from December 2013 to December 2014, in three phases. In the first phase, four departments were enumerated, from December 2013 to March 2014, by means of sweeping fieldwork. In the second and third phases, the remaining 28 departments were enumerated, from April to December 2014, by means of both sweeping (in cases of easy access) and routing (where access was difficult, in the jungle) fieldwork.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

As for the **census scope**, the AC 2014 was a widened agricultural census that covered all rural households, including non-agricultural production households. The census covered agricultural production (crop and livestock) activities, as well as the forestry, aquaculture and capture fishing activities carried out by households and units (enterprises) with legal personality in rural areas.

As for the **statistical unit**, two types of statistical units were defined in the third AC: (i) the agricultural production unit (UPA) and (ii) the non-agricultural production unit (UPNA). An UPA was defined as “a unit of organization of agricultural production that can be formed by a part of a property, a complete property, a set of properties or parts of continuous or separate properties, located in one or more municipalities, regardless of size, land tenure and the number of properties comprised, that must meet the following three conditions: (i) it produces crop, livestock, forestry or aquaculture products and/or develop activities related to capture fisheries intended for own consumption and/or for sale; (ii) it has a single agricultural producer that assumes the responsibility and risks of the productive activity; (iii) it uses at least one means of production such as buildings, machinery, equipment and/or labour”. The UPNA was defined as a unit engaged in non-agricultural activities only, such as industry, trade and other services.

## 6. GEOGRAPHIC COVERAGE

The third AC covered the rural areas of the country (continental and insular), indigenous reservations, black communities and 56 natural parks. Urban areas were not covered.

<sup>1</sup> In Spanish: *Censo Nacional Agropecuario 2013–2014*.

<sup>2</sup> *Consejo Nacional de Política Económica y Social*.



## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No threshold was applied for data collection.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The census was conducted using the classical approach.

### **Frame**

The frame was established on the basis of the land registry and rural cadastre maps.

### **Complete and/or sample enumeration methods**

The third AC involved a complete enumeration of all UPAs and UPNAs in the rural areas of the country.

### **Sample design (if sampling was used)**

No sampling was applied.

### **Data collection method(s)**

Data collection was carried out through face-to-face interviewing, using CAPI with smartphones in combination with the PAPI method.

### **Questionnaire(s)**

A single questionnaire was used for census data collection, for both UPAs and UPNAs. The AC 2014 covered all 16 core items recommended in the WCA 2010.

## 9. USE OF TECHNOLOGY

New technologies were used in the third AC: (i) digital aerial photography and satellite images; (ii) CAPI with smartphones for data capture, and georeferencing using GPS; and (iii) online dissemination of census results.

## 10. DATA PROCESSING AND ARCHIVING

Data capture was done using CAPI method (when electronic questionnaires were used), as well as manually (for printed questionnaires). An Integrated Monitoring and Operational Control System (SIMCO) served as the centralized system for data processing and archiving for the third AC. Four types of validation process were defined, according to the level of aggregation.

## 11. CENSUS DATA QUALITY

To ensure quality in the design and preparation of the census, various field tests, including a pilot census, were carried out to evaluate the functionality of the census questionnaire, the productivity of the enumerator during the interview, the strategy of communication, etc.

## 12. DATA DISSEMINATION AND USE

Techniques of anonymization were applied to the database to ensure the confidentiality of the information, to enable safe access to the census microdata provided online.

## 13. DATA SOURCES

**Departamento Administrativo Nacional de Estadística (DANE).** 2016. Censo Nacional Agropecuario 2014. In: *DANE* [online]. Bogotá D.C., Colombia [Cited 16 September 2019]. <http://www.dane.gov.co/index.php/estadisticas-por-tema/agropecuario/censo-nacional-agropecuario-2014>

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 12–16 December 2016, Montevideo, Uruguay. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 10 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020montevideo/en/>

## 14. CONTACT

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# COLOMBIA – AGRICULTURAL CENSUS 2014 – MAIN RESULTS

NUMBER OF PRODUCTION UNITS AND AREA		
	Units	Area (ha)
<b>Total production units</b>	<b>2 913 163</b>	<b>111 452 998</b>
Agricultural production units (UPAs) <sup>1</sup>	2 370 099	108 993 335
Non-agricultural production units (NUPA)	543 064	2 459 663

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES <sup>1</sup>		
	Holdings	Area (ha)
<b>Total</b>	<b>2 370 099</b>	<b>108 993 335</b>
Less than 5 ha	1 669 287	2 160 347
5–10 ha	253 349	1 801 601
10–50 ha	328 152	7 156 965
50–100 ha	60 394	4 217 217
100–500 ha	47 627	9 429 675
500–1 000 ha	5 448	3 794 994
1 000 ha and over	5 842	80 432 535

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>2 370 099</b>	<b>108 993 335</b>
Agricultural land	2 282 679	43 024 740
Arable land	1 110 879	8 476 711
Land temporarily fallow	83 353	215 011
Land under agricultural infrastructure	376 465	121 407
Land under stubble	1 666 041	9 628 689
Permanent meadows and pastures	1 340 788	24 797 933
Non-agricultural land	1 079 326	218 886
Forest and other wooded land	714 806	63 214 574
Other land	256 329	2 535 135

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX <sup>2</sup>		
	Number	Area operated (ha)
<b>Holder is an individual</b>	<b>451 991</b>	<b>9 810 160</b>
Male	307 565	7 943 613
Female	144 426	1 866 547
<b>More than one co-holder (joint holders)</b>	<b>273 234</b>	<b>2 471 788</b>
Co-holders are male only	38 268	463 256
Co-holders are female only	9 405	48 797
Co-holders are both male and female	225 561	1 959 735

MEMBERS OF HOUSEHOLDS IN RURAL AREAS, BY SEX		Number
<b>Total</b>		<b>5 126 734</b>
Male		2 649 650
Female		2 477 084
Engaged in agricultural activities on the holding		2 466 254
Male		1 309 501
Female		1 156 753
Aged 15 years and above		1 771 200
Male		948 433
Female		822 767
Aged 10–15 years		264 304
Male		138 345
Female		125 959
Aged under 10 years		430 750
Male		222 723
Female		208 027

PERMANENT WORKERS IN THE HOLDINGS		Number
<b>Total permanent workers</b>		<b>4 531 650</b>
Male		3 507 547
Female		1 024 103

LIVESTOCK		
	Holdings	Heads
<b>Total holdings with livestock</b>	<b>1 077 584</b>	
Cattle	648 199	21 502 811
Buffaloes	5 587	175 492
Sheep	54 627	777 513
Goats	46 770	753 778
Pigs/swine	189 114	1 055 414
Equines	289 879	1 211 889
Poultry (1 000 head)	573 811	720 368

METHODS OF IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>280 341</b>	<b>n.a.</b>
Surface	131 304	5 396 638
Sprinkler	152 970	5 196 742
Localized irrigation	20 980	1 711 354
Others	172 887	5 478 437

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	261 546	1 372 480
Rice	41 963	515 871
Maize	190 668	726 563
Other cereals	28 915	130 047
Root/tuber crops	639 655	996 355
Cassava	178 529	443 930
Potatoes	39 279	214 059
Other tuber crops	102 692	338 366
Vegetables	189 639	361 321
Aromatic, condimentary and medicinal crops	28 555	65 846
Flower crops	7 229	13 110
Other crops	83 325	584 803

<sup>1</sup> UPAs are units engaged in agricultural, forestry, aquaculture and/or capture fisheries activities.

<sup>2</sup> Holders who have a permanent residence in the administrative unit where the UPA is located.

## 1. HISTORICAL OUTLINE

The National Agricultural Census (NAC) 2014 of the Republic of Costa Rica is the sixth agricultural census to be conducted. The previous agricultural censuses were conducted in 1950, 1955, 1963, 1973 and 1984.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the NAC was provided by the following:

- Law No. 7839 of 1998, as amended by Law No. 7963 of 1999 (Article 4), is the governing law of the National Statistical System (SEN).<sup>1</sup> Law No. 7839 stipulates that NACs should be conducted with a five-year periodicity.
- Law No. 9071 of 2012 (Article 2) indicates that the state has to provide the needed funds to carry out agricultural censuses.

### **Institutional framework and international collaboration**

The National Institute of Statistics and Censuses (INEC)<sup>2</sup> is the main agency responsible for conducting NACs. The main supporting bodies for conducting the 2014 AC were the Executive Secretariat for Agricultural Sector Planning, the Ministry of Agriculture and Livestock and the Central Bank.

INEC received financial and technical assistance from FAO (for census preparation and implementation), as well as from the Inter-American Institute for Cooperation on Agriculture (IICA, for designing and implementation of a training strategy, called the “waterfall method”).

### **Census staff**

The census staff comprised over 2 200 persons (regional coordinators, cantonal coordinators, section supervisors, controllers and enumerators).

## 3. REFERENCE DATE AND PERIOD

**Reference day:** day of the interview, for inventory items such as location of the farm, livestock numbers and characteristics of the households.

**Reference period:** agricultural year 2014 (from 1 May 2013 to 30 April 2014), for items such as land use, agricultural practices, labour inputs, use of machinery and equipment.

## 4. ENUMERATION PERIOD

Data collection was conducted from 2 to 30 June 2014.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crops and livestock production) activities. The NAC 2014 also collected items related to non-agricultural activities associated with the holding, such as aquaculture and forestry activities.

The **statistical unit** for the NAC 2014 was the agricultural farm, defined as “any land area, dedicated totally or partially to agricultural production for sale or self-consumption, managed by a household, society, company, public institution or other, whose tasks may be coordinated or directly accomplished by a person or with the help of others, and whose activities are carried out under the same management, by using the same means of production, such as labour, machinery, equipment and work animals”. The definition of agricultural holdings includes aquaculture and forestry activities. Therefore, if the holding has only one those activities, it is considered as an agriculture holding. The farm can be constituted by one or more plots, under property or under other type of tenure, and may be located together or separately from one another, in the same canton or in different cantons. It includes family gardens, hydroponics and organoponics agricultural systems.

The agricultural producer is the individual or legal entity that assumes full economic responsibility in the management of the farm and that may or may not have technical functions; it may manage the farm personally or exercise this function through another person who administers it.

## 6. GEOGRAPHIC COVERAGE

The NAC 2014 covered the entire country, both urban and rural area.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

When publishing data, cases where a given farm had less than 1 000 m<sup>2</sup> (0.1 ha) were reflected as 0.0.<sup>3</sup>

<sup>1</sup> *Sistema Estadístico Nacional.*

<sup>2</sup> *Instituto Nacional de Estadística y Censos.*

<sup>3</sup> During census data collection, small holdings were included. During the phase of dissemination, these holdings were included as holdings without land. Holdings without land are those that comply with any of the following criteria: (i) the total extension of the farm is very small, such that when it is expressed in ha, it is considered equivalent to 0.0; and (ii) the total extension of the farm is equivalent to “other class of land”, so that the land is not considered as an indispensable production input – an example is a warehouse of 5 000 m<sup>2</sup> that at the same time constitutes the total extension of the farm (in other words, the structure covers the entire area of the farm). For confidentiality reasons, it was decided that at least three holdings should be reflected in census reports for each geographical region of a country, used for administrative or other purposes (i.e. district, province).

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The NAC 2014 used the classical approach.

### **Frame**

Data from the Ministry of Agriculture and Livestock were a source for the agricultural census frame. The cartography of the National Population and Housing Census 2011 was used for the NAC 2014.

### **Complete and/or sample enumeration methods**

The complete enumeration method was used for the NAC 2014.

### **Sample design (if sampling was used)**

No sampling method was used.

### **Data collection method(s)**

The face-to-face interviewing method was used to collect information from holdings, using the PAPI method.

### **Questionnaire(s)**

A single questionnaire was applied to collect all census information. Compared to the previous NAC, the NAC 2014 collected new items, such as data on irrigation and drainage practices, agricultural practices, agricultural equipment and infrastructure, agricultural support services, and variables related to food security and the environment.

The sixth NAC covered 15 of the 16 core items recommended in the WCA 2010.<sup>4</sup>

## 9. USE OF TECHNOLOGY

GPS and Geographic Information Systems (GIS) were used to georeference the farms.<sup>5</sup> The census results were disseminated online.

## 10. DATA PROCESSING AND ARCHIVING

Data entry was done by scanning the questionnaires. The data processing programme was developed by INEC using C# and C#Pro. A designing, processing and analysis team supported this process. Microsoft SQL Server was used as a database management system. Census data were exported using SPSS.

## 11. CENSUS DATA QUALITY

To ensure quality in the design and preparation of the census, several field tests in different parts of the country were carried out, including the 2013 pilot agricultural census, in which the following were evaluated: the functionality of the census questionnaire, the productivity of the enumerator during the interview, the communication strategy, etc.

## 12. DATA DISSEMINATION

The census results and final tables were disseminated largely through printed publications, CD-ROMs and websites. Based on the results of the sixth NAC, an agricultural statistical atlas was elaborated. Census information was disseminated at the country, province and canton level, according to the territorial administrative divisions of the Republic of Costa Rica in effect during the census.

The results of the NAC 2014 are available to the public through the INEC website.<sup>6</sup>

## 13. DATA SOURCES

**Instituto Nacional de Estadística y Censos.** 2015. *VI Censo Nacional Agropecuario 2014, Resultados Generales*. San Jose, Costa Rica. (also available at <http://inec.cr/sites/default/files/documentos/agropecuario/publicaciones/reagropeccenagro2014-002.pdf>).

## 14. CONTACT

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<sup>4</sup> The item "Other economic production activities of the holding's enterprise" was not covered.

<sup>5</sup> The devices were equipped with the following applications: Ourux Maps and Advancement of Mobile Interview System (Sistema de Avance de Entrevista Móvil (SAEM)). Enumerators used cartography to visit the area assigned to them; the maps also contained information such as the delimitation of the EA, the names of localities, identifiable structures such as health centres, education centres, churches or commercial places. In addition, other conventional symbols were highlighted (roads, motorways, roads, railways, rivers, creeks, bridges, etc.).

<sup>6</sup> See <http://www.inec.go.cr/censos/censo-agropecuario-2014>

# COSTA RICA – VI NATIONAL AGRICULTURAL CENSUS 2014 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>93 017</b>	<b>2 406 418</b>
Civil persons	80 987	1 316 807
Juridical persons	7 940	945 216
Partnership	2 995	76 816
Other	1 095	67 579

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>93 017</b>	<b>2 406 418</b>
Legal ownership	n.a.	2 194 208
Rented from others	n.a.	179 905
Other form of tenure	n.a.	32 305

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Total</b>	<b>93 017</b>	<b>2 406 418</b>
1 parcel	71 000	1 609 085
2 parcels	13 947	368 203
3 parcels	4 620	182 644
4 parcels and over	3 450	246 487

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>93 017</b>	<b>2 406 418</b>
Holdings without agricultural land <sup>1</sup>	3 115	2 164
Holdings with land	89 902	2 404 255
Less than 1 ha	13 683	6 489
1–2 ha	11 356	14 503
2–3 ha	8 673	19 701
3–4 ha	6 089	19 782
4–5 ha	5 556	23 611
5–10 ha	14 453	98 631
10–20 ha	10 755	145 027
20–50 ha	10 034	306 568
50–100 ha	4 774	324 889
100–200 ha	2 383	316 388
200 ha and over	2 146	1 128 666

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>93 017</b>	<b>2 406 418</b>
Agricultural land	n.a.	n.a.
Arable land	34 901	167 133
Land under permanent crops	52 132	377 214
Land under permanent meadows and pastures	44 285	1 044 910
Forest and other wooded land	33 128	736 505
Other land	32 300	80 656

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>80 987</b>	<b>1 316 807</b>
Male	68 389	1 210 244
Female	12 598	106 564

HOLDINGS, BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>80 987</b>
1 person	13 185
2–3 persons	32 537
4–5 persons	26 951
6–9 persons	7 918
10 persons and over	396

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>269 602</b>
Male	146 124
Female	123 478
Engaged in agricultural activities on the holding	128 546
Male	91 787
Female	36 759

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE	
	Number
<b>Total</b>	<b>80 987</b>
Male	68 389
Female	12 598
15–19 years	182
Male	152
Female	30
20–24 years	1 077
Male	875
Female	202
25–29 years	2 196
Male	1 794
Female	402
30–39 years	8 765
Male	7 135
Female	1 630
40–49 years	18 336
Male	15 354
Female	2 982
50 years and over	50 431
Male	43 079
Female	7 352

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>58 176</b>	
Cattle	37 171	1 278 817
Sheep	1 792	35 800
Goats	2 348	12 852
Pigs/swine	14 355	435 243
Poultry (1 000 head)	36 752	18 589
Other animals	20 122	
Insects		
Bees (hives)	1 893	30 851

MACHINERY AND EQUIPMENT OWNED BY THE HOLDINGS		
	Holdings	Units
Total tractors of all kinds	10 743	11 512
Ploughs (machine-powered)	7 672	4 139
Other (machine-powered)	n.a.	
Biodigester	1 737	1 990
Pumps	72 371	131 391
Harvester	1 047	1 010
Milk cooler	2 794	3 306
Dryers	561	700
Chainsaw	31 241	34 957
Milk machine	4 051	10 178
Solar panel	1 931	3 195
Grass chopper	8 283	8 718
Harrow	4 658	3 644
Rotator	2 030	1 151
Seeder	659	600
Sprayer	2 143	2 637

<sup>1</sup> Holding with insignificant land area (equivalent to 0.0 ha) and/or without any land used for agricultural production.

## 1. HISTORICAL OUTLINE

El Salvador conducted its first agricultural census in 1950, followed by other two agricultural censuses carried out in 1961 and 1971. After 36 years, the country conducted its fourth Census of Agriculture (CA) in 2007–2008,<sup>1</sup> within the framework of the 2010 WCA round.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

Organic Law of the Statistical Service, by means of Decree No. 1784 of October 1970, established the General Directorate of Statistics and Censuses (DIGESTYC) as a body within the Ministry of Economy (MINEC). Article 8, point b) charged DIGESTYC with the functions of planning, undertaking and dissemination of the results of the CA. In addition, Decree No. 134 of 14 October 1946 organized the activity of the Ministry of Agriculture (MoA), which contains the Directorate of Agricultural Economics (DGEA), responsible for the elaboration of statistics and analysis of the sector.

### *Institutional framework and international collaboration*

The CA 2007/2008 was implemented with the collaboration and support provided by the MoA and other national authorities. Important financial and technical assistance was provided by the Government of Japan, the Inter-American Development Bank (IADB) and FAO.

### *Census staff*

The census fieldwork was conducted in close cooperation with the MoA, which provided field personnel. The census staff consisted of 448 enumerators and 100 field supervisors.

## 3. REFERENCE DATE AND PERIOD

**Reference days:** 1 October 2007, for stock items, such as livestock, stock of machinery and buildings.

### **Reference periods:**

- the agricultural year (May 2006–April 2007), for crop production, apiculture, food security, organic agriculture, labour force, commercialization of production, etc.
- October 2006–September 2007, for data on coffee.
- calendar year 2006 (January–December 2006), for information on greenhouses, animal production, agricultural practices, agricultural inputs and credit.

## 4. ENUMERATION PERIOD

Data collection was undertaken between October 2007 and March 2008.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production). Detailed information on aquaculture was collected. The **statistical unit** was the agricultural holding, an economic unit of production that carries out crop, livestock production or aquaculture activities, constituted of one or more plots located in the same municipality, and that can be managed by a person or a group of persons (civil or juridical). Three types of holdings were distinguished: holdings with (i) commercial producers; (ii) subsistence producers; or (iii) production obtained in gardens, aimed mainly for family consumption.

## 6. GEOGRAPHICAL COVERAGE

The census covered the entire territory of El Salvador.

## 7. CUT-OFF THRESHOLDS AND OTHER EXCLUSIONS

All holdings with lands in rural areas were enumerated. The holdings raising livestock (including beehives) were covered by the census regardless of their location (in rural or urban area).

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used for conducting the census.

### **Frame**

Prior to the census, a directory of large holdings was elaborated from administrative registers. A second list of agricultural holders living in urban areas was established, according to the information collected during the Population Census (PC) carried out in 2007 (the PC included a specific question about agricultural activities in the household). As a result, 22 509 agricultural households in 2 069 urban “segments” (PC) were listed.

<sup>1</sup> IV Censo de Agropecuario 2007-2008.

**Complete and/or sample enumeration method(s)**

The CA 2007/2008 combined complete enumeration and sampling.

Rural areas (6 218 “segments”) were canvassed and all segments were covered. Inside the segments, all commercial holdings were enumerated. Subsistence holdings and holdings with only backyard production were sampled at a rate of 20 percent (using systematic random sampling, or SRS). The holders to be interviewed were selected during the fieldwork by applying a filter form to all households in rural areas.

**Sample design (if sampling was used)**

Given the small proportion of holders living in urban areas (estimated at less than 2.5 percent) the 6 208 urban “segments” from the recent PC were classified in two groups: 4 139 segments (66.7 percent) with no agricultural holder living in them and 2 069 with some holders, covering 22 509 agricultural households in urban areas. Four strata were defined;<sup>2</sup> sampling rates of 20 percent, 30 percent, 100 percent and 8.5 percent respectively were applied to select the segments. Afterwards, the selected segments were canvassed and the filter form applied to every household in the segment. All households with commercial agriculture (in urban areas) were enumerated and households with subsistence agriculture or backyard production (in urban areas) were subsampled at a rate of 20 percent (using SRS).

**Data collection method(s)**

The face-to-face interviewing method was used to collect information from holdings, using the PAPI method.

**Questionnaire(s)**

Four types of forms for data collection were used: (i) listing form; (ii) listing quality control at segment level; (iii) commercial form and (iv) subsistence form.

All 16 core items recommended by the WCA 2010 were included in the questionnaire for commercial holdings, which included specific sections dedicated to aquaculture, agricultural practices, manpower, livestock and food security.

**9. USE OF TECHNOLOGY**

Electronic methods (such as online data dissemination, CD-ROMs) were used to publish the census results.

**10. DATA PROCESSING AND ARCHIVING**

Manual data entry was used for data capture.

**11. CENSUS DATA QUALITY**

A Post-enumeration Survey (PES) was conducted to assess the census quality. A systematic sample of 5 percent of census segments was taken. All segments in the sample were completely re-enumerated by means of a specific form. The rate of undercoverage was 10.9 percent.

The comparison of census data with external data (such as estimates from MoA) showed that there were large discrepancies for several parameters. A special commission to reconcile the figures was formed in April 2009 and only partial results were delivered until the reconciliation had taken place.

**12. DATA DISSEMINATION**

The final results were delivered in December 2009 in hard copy and CD-ROMs, and are available online.

**13. DATA SOURCES**

**Ministerio de Economía.** 2009a. *Censo Agropecuario 2007, El Salvador 2007* [online]. San Salvador [Cited 14 August 2019]. <http://www.censos.gob.sv/cenagro/index.html>

**Ministerio de Economía.** 2009b. *IV Censo Agropecuario 2007-2008, Resultados Nacionales*. San Salvador, El Salvador. (also available at <http://cedesan.conasan.gob.sv/index.php/component/remository/func-startdown/71/?Itemid=1098>).

**Ministerio de Economía.** 2009c. *IV Censo Agropecuario 2007-2008, Resumen de Resultados*. San Salvador, El Salvador. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/ESV\\_SPA\\_RES.REP\\_2008.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/ESV_SPA_RES.REP_2008.pdf)).

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<sup>2</sup> Four strata were defined: (i) urban segments with one to five holders (1 059 segments); (ii) urban segments with more than five and less than 40 holders (903 segments); (iii) urban segments with more than 40 holders (107 segments); and (iv) urban segments with no holders (4 139 segments).

## EL SALVADOR – CENSUS OF AGRICULTURE 2007/2008 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>397 433</b>	<b>929 308</b>

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>397 433</b>	<b>929 308</b>
Legal ownership	n.a.	690 091
Rented from others	n.a.	194 586
Other form of tenure	n.a.	44 631

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>397 433</b>	<b>929 308</b>
Holdings without land	6 957	
Holdings with land	390 476	929 308
Less than 1 ha	141 823	n.a.
1–2 ha	126 232	n.a.
2–4 ha	66 964	n.a.
4–6 ha	19 663	n.a.
6–8 ha	6 759	n.a.
8–10 ha	5 499	n.a.
10–20 ha	10 110	n.a.
20–40 ha	6 295	n.a.
40–100 ha	4 954	n.a.
100–200 ha	1 435	n.a.
200 ha and over	741	n.a.

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>397 433</b>	<b>929 308</b>
Cultivated land	n.a.	528 814
Land under temporary meadows	n.a.	208 839
Land temporarily fallow	n.a.	59 164
Permanent meadows and pastures	n.a.	53 596
Non-agricultural area	n.a.	19 507
Forest	n.a.	43 621
Agricultural facilities	n.a.	14 935
Lake	n.a.	832

HOLDERS IN THE HOUSEHOLD SECTOR, BY AGE	
	Number
<b>Total</b>	<b>394 649</b>
Under 24 years	15 875
24–33 years	55 928
34–43 years	88 053
44–53 years	91 404
54–63 years	73 342
64 years and over	70 047

LABOUR FORCE OF THE HOLDING	
	Number
<b>Family members engaged in agricultural activities on the holding</b>	<b>550 171</b>
<b>Total employees</b>	<b>1 247 704</b>
Male	1 128 903
Female	118 801
Permanent employees	64 261
Male	58 604
Female	5 657
Temporary employees	1 183 443
Male	1 070 299
Female	113 144

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	59 614	1 042 931
Sheep	n.a.	1 982
Goats	n.a.	6 987
Pigs/swine	6 604	274 765
Horses	n.a.	12 666
Asses (donkeys)	n.a.	144
Poultry (1 000 head)	6 097	32 257
Other animals	5 882	
Rabbits	1 104	20 929
Insects		
Bees (hives)	1 139	68 902

IRRIGATION BY LAND USE TYPES	
	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>33 253</b>
Land under cultivation	25 066
Land under permanent pastures	8 187



## 1. HISTORICAL OUTLINE

Six agricultural censuses (ACs) have been conducted in Grenada in the last 50 years. Two ACs were conducted as a part of the West Indies ACs, in 1946 and 1961, while the other four were conducted as Grenada's Agricultural Censuses (GACs), in 1975, 1981, 1995 and 2012.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

Statistical Act No. 30 of 1960, revised under Act No. 21 of 1961, empowers the Central Statistical Office (CSO) of the Ministry of Finance of Grenada "to take any census". According to Section 4 ("Delegation of functions") of Statistical Act No. 30, the Statistical Officer may delegate in writing his powers and functions.

### *Institutional framework and international collaboration*

For the GAC 2012, the Grenada Cabinet of Ministers approved the delegation of functions of the Statistical Office, giving the authority to conduct the census to the Ministry of Agriculture (MoA). According to this authority, the Planning Unit of the MoA was designated for conducting the GAC 2012.

The Chief Agricultural Planning Officer at the MoA was responsible for the general coordination of the GAC 2012 and an inter-institutional Agricultural Census Committee (ACC)<sup>1</sup> was established. The ACC was the central coordinating body and was chaired by the Permanent Secretary of the MOA.

Other than the contribution from the national budget, the GAC 2012 was funded by the European Union (EU) in the sum of € 420 000. FAO provided technical support for the implementation of the census by means of two Technical Cooperation Projects (TCPs).

### *Census staff*

The fieldwork for the GAC 2012 involved two quality control officers, nine parish coordinators, 40 supervisors and 190 enumerators.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of enumeration for stock items, such as holding area, number of parcels, land tenure, land use, livestock numbers.

### *Reference periods:*

- the census reference year (from October 2011 to September 2012) or the 12 months prior to the visit of the enumerator, for planted and harvested area, irrigation, fertilizers and agricultural pesticides, farm machinery and equipment, etc.
- the week preceding the enumeration day, for labour force.

## 4. ENUMERATION PERIOD

Enumeration started on 24 September 2012 and was completed on 15 January 2013.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered the agricultural activities (crop and livestock production). The fishing activities of households were included in the listing form.

The **statistical unit** in the GAC 2012 was the farm, defined as an "economic unit of agricultural production under single management comprising all livestock kept and all lands used, wholly or partly, for agricultural production purposes, without regard to title, legal form, or size. Single management may be exercised by an individual or household, jointly by two or more individual or households, by a clan, village or juridical person such as a company, cooperative or government agency. The farm's land may consist of one or more parcels located in one or more watersheds (WSs), provided that the parcels share the same 'production means' utilized by the farm, such as labour, farm buildings, machinery or draught animals".

There are two types of agricultural holdings: holdings in the household sector and holdings in the non-household sector.

## 6. GEOGRAPHICAL COVERAGE

The census covered the entire island of Grenada and the Grenadine islands of Carriacou and Petit Martinique.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The holdings with activity exceeding at least one of the following cut-off limits were enumerated by means of a long questionnaire:

- one or more cattle;
- five or more sheep, goats or pigs combined;
- breeding of sheep, goats or pigs;
- 25 or more poultry/chicken;
- 25 or more nutmeg, cocoa, bananas, fruit, nut and spice trees combined;
- 0.25 acres (0.1 ha) of garden crops; and
- sales of agricultural products in the last 12 months amounting to more than EC\$ 2 500.

The rest of holdings (below the above cut-off limits) were enumerated using a short questionnaire.

<sup>1</sup> This comprised representatives of producers and users of both public- and private-sector institutions. The exercise was carried out in close collaboration with the CSO.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the GAC 2012.

### **Frame**

A list of large farms or “non-household” farms was prepared prior to the census taking. The rest of the units were identified through the short questionnaire applied for screening all households in the country. The frame for agricultural holdings in the household sector was obtained from the 2011 Population and Housing Census (PHC), while the frame for the agricultural holdings in the non-household sector was obtained from the registers held by various growers’ associations.

### **Complete and/or sample enumeration method(s)**

All holdings in scope were covered using complete enumeration.

### **Sample design (if sampling was used)**

Not applied.

### **Data collection method(s)**

The information was collected by means of face-to-face interviews using PAPI.

The country was divided into EDs (287 in total). The enumerators had to canvass the assigned ED identifying all households in it and applying the short questionnaire (GAC 01) to identify those holdings above the thresholds and to collect information from small holdings below it. The long questionnaire (GAC 02) was applied to all holdings above the thresholds. A complete enumeration was conducted in 98 percent of the EDs, with the exception of a few gated areas.

### **Questionnaire(s)**

Two questionnaires were used: (i) a short listing form (GAC 01); and (ii) a long farm questionnaire (GAC 02). The census covered all 16 core items recommended by FAO.

## 9. USE OF TECHNOLOGY

A combination of hand-drawn, digitized, topographic and satellite photographic material was used by enumerators.

## 10. DATA PROCESSING AND ARCHIVING

Data were manually edited, coded and keypunched. Data were entered using Microsoft Access Database. Analysis and tabulation were done in SPSS.

## 11. CENSUS DATA QUALITY

Field supervision was applied to ensure quality during the field operations. Checking against external data was performed to assess the accuracy of the data.

## 12. DATA DISSEMINATION

The final results of the GAC 2012 were published through a final report, soft copies of which are available upon request. A gender analysis and a comparative study between the 1995 and 2012 ACs was also done and soft copies of these are available upon request.

## 13. DATA SOURCES

**Ministry of Agriculture, Lands, Forestry, Fisheries and Environment.** 2012. *Agriculture Census. Field Team Manual.* St. George’s, Grenada.

**Ministry of Agriculture, Lands, Forestry, Fisheries and Environment.** 2015. *Grenada Census of Agriculture 2012, Final results.* St. George’s, Grenada.

## 14. CONTACTS

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# GRENADA – AGRICULTURAL CENSUS 2012 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>9 345</b>	<b>9 542</b>
Civil persons	9 306	n.a.
Juridical persons	26	n.a.
Other	13	n.a.

LAND TENURE		
	Holdings	Area (ha)
<b>Total holdings with land</b>	<b>9 203</b>	<b>9 542</b>
Legal ownership	8 219	8 158
Rented from others	600	917
Other form of tenure	384	468

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Total holdings with land</b>	<b>9 203</b>	<b>9 542</b>
1 parcel	8 977	8 652
2 parcels	218	865
3 parcels	7	17
4 parcels and over	1	8

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>9 345</b>	<b>9 542</b>
Holdings without land	142	
Holdings with land	9 203	9 542
Less than 0.2 ha	n.a.	268
0.2–0.4 ha	n.a.	447
0.4–0.8 ha	n.a.	873
0.8–2 ha	n.a.	1 915
2–4 ha	n.a.	1 737
4–10 ha	n.a.	1 684
10–20 ha	n.a.	516
20–40 ha	n.a.	2 102

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>9 345</b>	<b>9 542</b>
Agricultural land	9 051	5 205
Cropland area	8 993	4 966
Land under temporary crops	4 622	372
Land temporarily fallow	1 968	600
Land under permanent crops	8 937	3 993
Permanent meadows and pastures	763	238
Non-agricultural land	7 726	751
Forest/bush	3 860	3 540
Other land	n.a.	48

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>9 306</b>	<b>8 711</b>
Male	6 631	7 045
Female	2 675	1 666

HOLDINGS BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>9 306</b>
1 person	2 448
2–3 persons	3 233
4–5 persons	2 232
6–9 persons	1 265
10 persons and over	128

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>30 265</b>
Male	16 046
Female	14 219

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>1 164</b>	
Cattle	673	1 973
Sheep	2 173	10 912
Goats	2 445	12 736
Pigs/swine	575	4 638
Asses (donkeys) and mules	57	68
Poultry (1 000 head)	n.a.	n.a.
Chickens	1 213	77
Ducks	15	0.2
Turkeys	106	0.7
Other animals	n.a.	
Rabbits	518	5 013
Insects		
Bees (hives)	35	1 899

EMPLOYEES WORKING ON THE HOLDING, BY SEX	
	Number
<b>Total employees</b>	<b>4 452</b>
Male	3 886
Female	566

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE	
	Number
<b>Total</b>	<b>9 306</b>
Male	6 628
Female	2 678
Under 29 years	669
Male	543
Female	126
30–39 years	1 284
Male	923
Female	361
40–49 years	2 044
Male	1 489
Female	555
50–59 years	2 284
Male	1 654
Female	630
60–69 years	1 459
Male	992
Female	467
70 years and over	1 566
Male	1 027
Female	539

## 1. HISTORICAL OUTLINE

The General Agricultural Census (GAC) 2008/2009 is the first agricultural census to be carried out in Haiti. Earlier structural data on agriculture were provided through population censuses (PCs), which were conducted in 1950, 1971 and 1982, and included a section with agriculture-related items.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The Law of 7 September 1951 organized the Haitian Institute of Statistics and Informatics<sup>1</sup> (IHSI) and charged it with the organization of the National Statistical System on a decentralized basis. The IHSI performs the normative role in the system and is responsible for demographic and social surveys; sectoral offices have the executive mandate for undertaking sector surveys and censuses.

The Presidential Decree published in the Official Gazette of 23 October 2008, Volume 163, No. 97, entrusted the Ministry of Agriculture, Natural Resources and Rural Development (MARNDR) with undertaking the GAC 2008/2009.

### *Institutional framework and international collaboration*

In support of the implementation of the census activities, the following bodies were set up:

- the Central Bureau of Agricultural Census (BCRA), which is responsible for planning and carrying out all census activities throughout the national territory, through the departmental sections of the GAC, which ensure coordination at the departmental level;
- the National Orientation Committee of the GAC, which backs census operations at high level; and
- the Technical Support and Steering Committee (CATP), which provides technical support to the Bureau Central Census of Agriculture (BCRA) in defining the methodological approach, and which includes mainly the IHSI, the National Coordination of Food Security (CNSA) and the National Centre for Geospatial Information (CNIGS).

The GAC was taken with the financial support of the EU and with technical assistance from FAO.

### *Census staff*

The census staff amounted to 1 210 persons, comprising the staff involved in census data collection (1 005 enumerators, 171 controllers, 17 county supervisors and 17 national supervisors) and the staff of the BCRA.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for stock items.

**Reference period:** the agricultural year (from 1 March 2008 to 28 February 2009), for other items.

## 4. ENUMERATION PERIOD

The fieldwork started on 11 March 2009, and was finalized at the end of November 2009.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** is the agricultural holding, defined as an economic unit of agricultural production subject to a single management, comprising all livestock therein and all land used wholly or partly for agricultural production, regardless of the title of ownership, legal status or size. A community survey was undertaken jointly with the GAC.<sup>2</sup>

## 6. GEOGRAPHIC COVERAGE

The GAC 2008/2009 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Only the production units reaching or exceeding a conventional unit, the “farm unit”, were enumerated. The following thresholds were applied for the agricultural holdings to subject to enumeration:

- 0.04 carreaux of Utilised Agricultural Area (UAA)<sup>3</sup> (equivalent to 516 square meters, or 0.05 ha) for land without irrigation and 0.015 carreaux of UAA (equivalent to 193.5 m<sup>2</sup>, or 0.02 ha) for irrigated land;
- five trees of mango (for holdings with usufruct rights to trees);
- one cow or oxen, three goats or sheep (breeding females), three pigs (breeding females), five rabbits (breeding females), 15 hens or five beehives.

Nevertheless, the low thresholds made it possible to cover almost all farmers.

<sup>1</sup> Institut Haïtien de Statistique e d'Informatique.

<sup>2</sup> The community survey covered sociodemographic and geographic aspects of each commune, their agricultural characteristics, the state of the environment, natural risks, roads, water, energy, services, agro-industries, the cultural profile of the commune, the main economic activities, employment, social situation and conflicts and development perspectives.

<sup>3</sup> Carreaux de Surface Agricole Utile (SAU).

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the GAC. A community survey was conducted along with the GAC.

### **Frame**

The census frame was the cartography prepared in the pre-census phase.

### **Complete and/or sample enumeration method**

The AC was conducted using complete enumeration.

### **Sample design (if sampling was used)**

Not applicable.

### **Data collection method(s)**

The information was collected by means of face-to-face interviews with paper questionnaires (PAPI method).

### **Questionnaire(s)**

Two questionnaires were used: (i) to collect the GAC information at holding level and (ii) for the community survey. The GAC questionnaire included all 16 core items recommended in the WCA 2010.

## 9. USE OF TECHNOLOGY

Census results were disseminated and are accessible online.

## 10. DATA PROCESSING AND ARCHIVING

Data were manually entered and coded. Once the questionnaires were keypunched, a consistence checking programme was used.

## 11. CENSUS DATA QUALITY

Intensive field supervision was applied to ensure quality during the field operations. Manual editing and checks for inconsistencies were performed at central level. Many inconsistencies were solved through telephone communications.

## 12. DATA DISSEMINATION

The first provisional data were published in May 2011. In October 2012, the final GAC data were delivered, including the results of the community survey. Overall, 11 printed reports with CD-ROMs, one atlas and one leaflet were produced and disseminated. The products with census results, including metadata, were also published online.

## 13. DATA SOURCES

**MARNDR.** 2019. *Recensement Général de l'Agriculture* [online]. Port-au-Prince, Haiti. [Cited 29 July 2019]. <http://www.agriculture.gouv.ht/view/01/?Recensement-General-de-l-465#.W7UhZWgzZPY>

## 14. CONTACT

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## HAITI – AGRICULTURAL CENSUS 2008/2009 – MAIN RESULTS

NUMBER OF HOLDINGS WITH UAA, BY LEGAL STATUS		
	Holdings	UAA (ha)
<b>Total</b>	<b>1 018 951</b>	<b>949 752</b>
Civil persons	1 015 024	945 770
Juridical persons	3 927	3 981

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>1 018 951</b>	<b>991 287</b>
Legal ownership and owner-like possession	n.a.	930 142
Non-legal ownership or owner-like possession	n.a.	52 470
Other form of tenure	n.a.	8 675

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>1 018 951</b>	<b>949 752</b>
Holdings without UAA	44 169	
Holdings with UAA	974 782	949 752
Less than 0.01 ha	11 048	476
0.01–0.13 ha	32 495	2 998
0.12–0.3 ha	83 000	15 201
0.3–0.4 ha	137 535	43 535
0.4–0.6 ha	182 740	97 962
0.6–1.29 ha	306 268	283 550
1.29–3 ha	168 832	294 737
3–4 ha	34 974	107 109
4–5 ha	9 901	43 202
5–6 ha	3 761	21 434
6–13 ha	3 820	31 475
13 ha and over	408	8 071

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	UAA (ha)
<b>Total</b>	<b>1 015 024</b>	<b>945 770</b>
Male	757 354	751 826
Female	257 670	193 944

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		Number
<b>Total</b>		<b>1 015 024</b>
Male		757 354
Female		257 670
Under 25 years		43 538
Male		31 446
Female		12 092
25–34 years		159 033
Male		114 174
Female		44 859
35–44 years		259 064
Male		192 520
Female		66 544
45–54 years		272 507
Male		209 948
Female		62 559
55–64 years		162 087
Male		124 122
Female		37 965
65 years and over		118 795
Male		85 144
Female		33 651

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Engaged in agricultural activities on the holding</b>		<b>4 297 249</b>
Male		2 382 282
Female		1 914 967

HIRED MANAGERS AND EMPLOYEES ON THE HOLDING		Number
<b>Total hired managers</b>		<b>14 625</b>
<b>Total employees</b>		<b>89 190</b>
Male		64 389
Female		24 801

HOLDINGS, BY MAIN PURPOSE OF PRODUCTION		
	Holdings	UAA (ha)
<b>Total producing mainly for</b>	<b>1 018 951</b>	<b>949 752</b>
Home consumption	407 612	310 552
Sale	611 339	639 199

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	n.a.	
Cattle	n.a.	1 103 532
Sheep	n.a.	359 181
Goats	n.a.	2 104 986
Pigs/swine	n.a.	1 093 749
Equines	353 654	623 678
Horses	197 216	273 017
Mules and hinnies	110 614	133 092
Asses	157 611	217 569
Poultry (1 000 head)	777 067	8 912
Chickens	765 422	7 323
Ducks	48 237	231
Geese	434	2
Turkeys	113 709	482
Pigeons	52 584	632
Guinea fowl	43 239	242
Insects		
Bees (hives)	6 148	31 376

IRRIGATION		Area irrigated (ha)
<b>Total irrigated land</b>		<b>97 015</b>

MACHINERY AND EQUIPMENT USED ON THE HOLDING		Holdings
Total tractors of all kind		9 148
Combine harvesters		260
Other (machine-powered)		n.a.
Electric generator		4 161
Irrigation pump		7 042
Spray pump		40 006
Tiller		7 351
Centrifuge		122
Milkmaid		23
Transport vehicle		3 120

## 1. HISTORICAL OUTLINE

The first Census of Agriculture (CA) in Jamaica was undertaken, together with the Census of Population and Housing, in 1943. The second CA was carried out in 1961, while the third was conducted in 1968/1969, and represented the first participation of Jamaica in the FAO World Census of Agriculture Programme. Subsequently, agricultural censuses were undertaken in 1978/1979 and 1996. The metadata presented here refers to the sixth CA conducted in Jamaica in 2007.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The CA 2007 was taken under the provisions of the Statistics Act (Amended).<sup>1</sup> In accordance with Section 4 of the Act, Agricultural Order 2007 was approved by the House of Representatives on 22 January 2007, authorizing the taking of a CA in Jamaica between 19 February and 31 December 2007. Under Section 6 of the Act, the CA 2007 Regulations were elaborated by the Minister of Finance and Planning, on 22 January 2007, outlining the conditions under which the CA was to be conducted.

### *Institutional framework and international collaboration*

According with the Statistics Act, the Director General of the Statistical Institute of Jamaica (STATIN) is responsible for taking all censuses in Jamaica (Art. 3c of the Statistics Act, 1984). Census planning was organized through a joint consultative committee comprising representatives from STATIN, the Ministry of Agriculture, the Rural Agricultural Development Authority, the University of West Indies and the Planning Institute of Jamaica. The census was executed mainly by the staff of the STATIN.

### *Census staff*

The field staff comprised 600 temporary workers, serving as area managers, supervisors and interviewers.<sup>2</sup>

## 3. REFERENCE DATE AND PERIOD

### *Reference days:*

- 16 February 2007, for items related to livestock;
- the day of enumeration for holding and holder identification, total area, number of parcels, land use and tenure, size of holder's household, etc.

**Reference period:** the reference year (calendar year 2006), for items on income, crops, labour, use of machinery, main marketing problems, agricultural practices and facilities, and irrigation, etc.

## 4. ENUMERATION PERIOD

The census was launched on 20 February 2007 and finished by mid-August of the same year.<sup>3</sup>

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). Items were also collected related to oyster, shrimp and lobster farming (aquaculture from marine environment).

The **statistical unit** is the agricultural holding, defined as all the lands being utilized in full or in part for agricultural purposes, and is located in a single parish. It may consist of one parcel of land or of several parcels. A farm may comprise land in crops or may be animals only. Where it comprises several parcels, all parcels must be located within the same parish to be considered a single farm. Where there are animals only, and no land is dedicated to their rearing, these are referred to as landless farms. In terms of size, a holding or farm is any agricultural enterprise with a minimum of at least one of the cut-off limits described below (see section 7).

## 6. GEOGRAPHIC COVERAGE

The census covered farming activities in all non-urban areas and a few selected urban areas. All parishes with the exception of Kingston were included.

## 7. CUT-OFF THRESHOLDS AND OTHER EXCLUSIONS

Holdings with activity over at least one of the following cut-off limits were enumerated:

- one "square chain" (approximately 400 m<sup>2</sup>, or 0.04 ha) of cultivation (crops including flowers whether in a greenhouse/shade house or not);
- 12 bearing economic trees (citrus, mangoes, breadfruit, etc.);

<sup>1</sup> Ch. 368, Law 34 of 1995; Act 3 of 1984; Act 11 of 2003.

<sup>2</sup> STATIN's senior field supervisors and zone supervisors acted as assistant area managers and provided guidance on the use of maps and the resolution of mapping queries. The country was divided into seven areas, each coordinated by an area manager, and in 3 198 Enumeration Districts, of which 2 950 were finally canvassed.

<sup>3</sup> Enumeration took place through visits to all households in these areas, each household being identified either as a farm or non-farm household. A questionnaire was then administered for every farm identified in each household. The total number of enumeration districts identified for coverage was 3 198 of which 160 were classified as urban. All parishes, with the exception of Kingston, were included. Each household in the prescribed areas was to be visited and basic information collected with regard. A listing schedule was designed for this purpose, on which was identified the name and address of the head of the household, the number of persons in each household by gender, the number of individuals of 14 years and over, the number of persons who operate farms, the names of these persons and the number of farms which they operate. A census questionnaire was then completed for each farm identified.

- two head of cattle;
- two pigs or five goats or five sheep;
- 50 poultry (any combination) including ducks, turkeys etc.;
- six beehives; or
- one fish (including ornamental) or shrimp pond of any size.

Holdings below the threshold were enumerated by means of the listing form.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

Although a modular approach was planned for conducting the CA 2007, only one census module was implemented by the country, due to budget and time constraints.

### **Frame**

A listing of households was designed through enumerators' visits to households. In addition, the lists of farms with 20 ha or more, based on the previous agricultural census, were scrutinized and updated.

### **Complete and/or sample enumeration methods**

The AC was conducted using complete enumeration.

### **Sample design (if sampling was used)**

Not applicable.

### **Data collection method(s)**

Enumeration took place through visits to all households in the enumeration districts, each household being identified as either a farm or non-farm household. A questionnaire was then administered for every farm identified in each household. The total number of enumeration districts identified for coverage was 3 198, of which 160 were classified as urban. All parishes with the exception of Kingston were included.

### **Questionnaire(s)**

One questionnaire was used in the CA 2007. The census questionnaire covered 13 items from the 16 core items recommended in the WCA 2010.<sup>4</sup>

## 9. USE OF TECHNOLOGY

Census results were disseminated and are accessible online.

## 10. DATA PROCESSING AND ARCHIVING

Data were manually entered and coded. Editing of primary data was done through inconsistency checking routines. External data were used for the validation of census results.

## 11. CENSUS DATA QUALITY

No information on census data quality was provided in the census reports available.

## 12. DATA DISSEMINATION

The census results were disseminated through reports with preliminary and final census results and through institution's website.

## 13. DATA SOURCES

**Statistical Institute of Jamaica.** Census of Agriculture 2007. In: *Statistical Institute of Jamaica* [online]. Kingston, Jamaica. [Cited 13 August 2019]. <http://statinja.gov.jm/agricensus.aspx>

## 14. CONTACT

Statistical Institute of Jamaica  
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 Website: <https://statinja.gov.jm>

<sup>4</sup> The following items were not covered: (i) "Presence of aquaculture on the holding", (ii) "Presence of forest and other woodland on the holding" and (iii) "Other economic production activities of the holding's enterprise".



# JAMAICA – CENSUS OF AGRICULTURE 2007 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>228 683</b>	<b>325 810</b>
Civil persons	210 853	n.a.
Juridical persons	17 830	n.a.

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>228 683</b>	<b>325 810</b>
Holdings without land	28 070	
Holdings with land	200 613	325 810
Less than 1 ha	151 929	47 712
1–5 ha	43 731	86 011
5–10 ha	2 922	19 721
10–25 ha	1 283	19 166
25–50 ha	338	11 896
50–100 ha	170	11 742
100–200 ha	100	13 707
200 ha and over	140	115 854

LAND USE <sup>1</sup>		
	Holdings	Area (ha)
<b>Total</b>	<b>228 683</b>	<b>325 810</b>
Active farmland	n.a.	202 727
Cropland	n.a.	154 524
Permanent meadows and pastures	n.a.	48 203
Inactive farmland	n.a.	114 048
Ruininate and fallow	n.a.	80 560
Woodland and other land on farms	n.a.	33 488
Other land	n.a.	9 035

HOLDERS IN THE HOUSEHOLD SECTOR, BY AGE	
	Number
<b>Total</b>	<b>210 853</b>
Under 25 years	12 356
25–34 years	31 890
35–44 years	46 898
45–54 years	43 846
55–64 years	31 557
65–74 years	23 914
75 years and over	14 123
Not reported	6 269

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>n.a.</b>	
Cattle	n.a.	94 964
Sheep	454	7 255
Goats	60 315	482 345
Pigs	32 865	223 954
Equines	5 980	9 363
Poultry (1 000 head)	n.a.	n.a.
Layers	3 288	766
Broilers	29 761	6 009
Other poultry	4 802	108
Insects		
Bees (hives)	578	11 895

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	n.a.	n.a.
Corn	16 824	1 577
Vegetables and melons	n.a.	n.a.
Cabbages	15 649	1 917
Carrots	15 614	2 265
Pumpkin	23 413	2 782
Watermelons	3 150	722
Tomatoes	17 260	1 995
Other vegetables	25 731	3 147
Root/tuber crops	n.a.	n.a.
Cocoyam	18 718	1 560
Irish potatoes	3 344	605
Sweet potatoes	28 348	3 436
Cassava	18 100	2 750
Dasheen	17 466	1 790
Yams	95 940	17 345
Spice and aromatic crops	n.a.	n.a.
Hot pepper	11 685	1 380
Sweet pepper	15 939	1 705
Other spice crops	n.a.	1 014
Leguminous crops	n.a.	n.a.
Red peas	8 607	735
Gungo peas	15 969	1 957
Peanuts	4 563	1 477
Sugar crops	n.a.	n.a.
Sugar cane	33 183	58 273
Other temporary crops	n.a.	n.a.

<sup>1</sup> Data are presented according to national land use classes.

## 1. HISTORICAL OUTLINE

The first agricultural census in Mexico was carried out in 1930, followed, every ten years, by those carried out in 1940, 1950, 1960, 1970, 1981 and 1991. The Census of Agriculture and Forestry (CAF), to which the present metadata review and data refer, was conducted in 2007.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis of the CAF 2007 included the following:

- Articles 26 and 73 of the Constitution of 7 April 2006, establishing the National Statistical and Geographic Information System (SNIEG);
- the Law of the SNIEG of 11 March 2008;

The SNIEG is coordinated by the National Institute of Statistics and Geography (INEGI), in compliance with Article 52 of the Law of the SNIEG. Article 59 of the Law entrusted the INEGI with undertaking national censuses.

### **Institutional framework and international collaboration**

The INEGI was in charge of conducting the CAF 2007.

### **Census staff**

For the first stage (enumeration of the land plots), the CAF 2007 employed 12 401 enumerators and 2 526 field supervisors, and for the second stage (data collection) 14 462 enumerators and 2 930 field supervisors were hired.

## 3. REFERENCE DATE AND PERIOD

### **Reference day:**

- the day of the interview, for permanent crops, type of irrigation and demographic characteristics; and
- 30 September 2007, for stock of livestock, machinery and equipment.

### **Reference periods:**

- from March to September 2007, for the identification of land farmed by the owner and their characteristics, as well as all information on spring-summer cycle crops;
- from October 2006 to February 2007, for autumn-winter cycle crops;
- from October 2006 to September 2007, for the use of machinery and equipment, agricultural practices, facilities, end-use of products, credit, insurance, government support and other services, etc.; and
- the last five years, for forest planting and potential agricultural land.

## 4. ENUMERATION PERIOD

Census activities were performed in two stages: (i) the enumeration of the *land plots* was carried out from 11 June to 20 July 2007; and (ii) collection of data from the *production units* was carried out from 1 October to 30 November 2007.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production) and forestry.

The **statistical unit** was the production unit, comprising: (i) the land plots with or without agricultural or forestry activity in the rural area, or with agricultural activity in the urban area, located in the same municipality; (ii) the animals that are owned or raised for agricultural purposes (to obtain their meat, milk, eggs, leather, honey, or for work), regardless of their location; as well as the equipment, machinery and vehicles for agricultural or forestry activities, as long as, all of these have been managed under a single administration during the period from March to September 2007. Two types of statistical units were defined in the CAF: (i) the agricultural production unit (UPA) and the non-agricultural production unit (UPNA). UPAs are units engaged in agricultural and/or forestry activities.

## 6. GEOGRAPHIC COVERAGE

The CAF covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No thresholds or other exclusions were applied in the CAF 2007.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CAF 2007.

### **Frame**

The CAF frame was built as a result of the land plot enumeration, based on which the list (directory) of producers by locality was established.

**Complete and/or sample enumeration methods**

The CAF 2007 was conducted using complete enumeration.<sup>1</sup>

During the land plot enumeration stage, 9.3 million land plots were identified, providing the universe for the second stage (data collection).

During data collection, information was obtained on 5.5 million production units, of which 4.07 million had agricultural or forestry activities<sup>2</sup> and 1.48 million reported no such activities.

**Sample design (if sampling was used)**

No sampling was used.

**Data collection method(s)**

A face-to-face interview using electronic devices (CAPI method) was applied, except in those cases where the production units were located in high-risk areas, where the data collection was carried out through printed questionnaires (PAPI). The information relating to the production units was incorporated into the PDA devices supplied; the information was geo-statistically referenced during land plot enumeration.

**Questionnaire(s)**

Two census questionnaires were used for census data collection in the CAF 2007: (i) one questionnaire for production units and (ii) a short questionnaire to collect census data from households with backyard activities.<sup>3</sup>

The CAF 2007 questionnaire covered 14 of the 16 core items<sup>4</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Satellite images were used to support fieldwork during the enumeration of land plots, together with other cartographic materials to locate, identify and delimit each of the land plots enumerated. The CAPI method (with PDA devices) was used for CAF data collection. The census results were disseminated and are accessible online. Users can safely access the data through the microdata laboratory.

**10. DATA PROCESSING AND ARCHIVING**

CAF data processing (including data validation) was carried out in the central and regional offices, through various IT systems previously designed for this purpose. A special software for PDAs for data processing was applied. Oracle and Java were also used.

**11. CENSUS DATA QUALITY**

Controls were designed during the processing stage to obtain reliable results.<sup>5</sup> Data was transferred from the municipal census coordination offices to the central offices, which enabled the national database to be integrated almost immediately after receiving the information.

Google Images were used only during the first stage (enumeration of land plots), mainly when an area had a high concentration of plots or when the size of plots was less than 1 ha.

**12. DATA DISSEMINATION**

The final results of the CAF 2007 (accompanied with appropriate metadata, including the questionnaire, technical notes and support documents for a better interpretability of census data) were disseminated in 2009. The methodological syntheses were published in 2013 and are available on the INEGI website.<sup>6</sup> Safe access to CAF microdata is provided to users.

Also, as a part of the results of the CAF 2007, an Agricultural Geostatistical Information Consultation System (SCIGA, from its Spanish name) was designed.

**13. DATA SOURCES**

**Instituto Nacional de Estadística y Geografía.** 2013. *Censo Agrícola, Ganadero y Forestal 2007* [online]. Aguascalientes, Mexico. [Cited 25 July 2019]. <https://www.inegi.org.mx/programas/cagf/2007/>

**14. CONTACT**

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<sup>1</sup> Two strategies were used for data collection: (i) the localization of farmers ("door-to-door"), based on the full coverage of all localities with less than 9 000 inhabitants; (ii) the localization of farmers through direct visits in localities with 9 000 or more inhabitants. This operation was carried out from 1 October to 30 November 2007.

<sup>2</sup> For more details, refer to table 107 of the CA 2007 results ([https://www.inegi.org.mx/contenidos/programas/cagf/2007/tabulados/Tabulado\\_VIII\\_CAGyF\\_107.pdf](https://www.inegi.org.mx/contenidos/programas/cagf/2007/tabulados/Tabulado_VIII_CAGyF_107.pdf)).

<sup>3</sup> The short questionnaire was used to collect census data from the households engaged in small-scale agricultural activities in localities with less than 9 000 inhabitants.

<sup>4</sup> The following items were not covered: (i) "Presence of aquaculture on the holding"; and (ii) "Other economic production activities of the holding's enterprise".

<sup>5</sup> Consistency checks were designed in the CAPI data entry application to ensure the reliability of census data. For more details, refer to section 10 above ("Data processing and archiving") and related footnotes.

<sup>6</sup> At <https://www.inegi.org.mx/programas/cagf/2007/>

## MEXICO – CENSUS OF AGRICULTURE AND FORESTRY 2007 – MAIN RESULTS

NUMBER OF AGRICULTURAL AND FORESTRY HOLDINGS AND AREA		
	Units	Area (ha)
<b>Total production units</b>	<b>5 548 845</b>	<b>112 349 110</b>
Agricultural production units (UPAs) <sup>1</sup>	4 067 618	68 535 298
Non-agricultural production units (NUPAs)	1 481 227	43 813 812

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>4 067 618</b>	<b>68 535 298</b>
Owned	3 745 854	62 908 266
Non-legal owner-like possession	182 719	1 425 073
Rented from someone else	235 743	2 426 869
Sharecropping	83 060	633 254
Others	30 254	1 141 836

LAND FRAGMENTATION		
	Holdings	Number of parcels
<b>Total</b>	<b>4 067 618</b>	<b>7 494 369</b>
1 parcel	2 594 889	2 594 889
2 parcels	724 479	1 448 958
3 parcels	330 613	991 839
4 parcels	171 417	685 668
5 parcels and over	246 220	1 773 015

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>4 067 618</b>	<b>68 535 298</b>
Less than 2 ha	1 796 750	1 976 711
2–5 ha	962 187	3 458 195
5–20 ha	944 063	9 742 927
20–50 ha	217 392	6 867 598
50–100 ha	78 004	5 626 467
100–1 000 ha	62 577	16 172 478
1 000–2 500 ha	3 783	5 985 998
2 500 ha and over	2 862	18 704 925

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>4 067 618</b>	<b>68 535 298</b>
Agricultural land	n.a.	52 345 970
Cropland	n.a.	30 878 698
Permanent meadows and pastures	n.a.	21 467 272
Forest and other wooded land	n.a.	2 097 416
Non-agricultural area	n.a.	14 091 913

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>4 067 618</b>	<b>68 535 298</b>
Male	3 427 353	61 215 026
Female	640 265	7 320 272

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Engaged in agricultural and forestry activities</b>		<b>7 578 170</b>
Male		5 832 389
Female		1 745 781

EMPLOYEES WORKING ON THE HOLDING		Number
<b>Total</b>		<b>5 139 787</b>
Male		4 543 387
Female		596 400

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		Number
<b>Total</b>		<b>4 067 618</b>
Male		3 427 353
Female		640 265
14 to 19 years		17 633
Male		15 689
Female		1 944
20–29 years		263 921
Male		236 396
Female		27 525
30–39 years		663 097
Male		580 117
Female		82 980
40–49 years		852 407
Male		722 751
Female		129 656
50–59 years		889 278
Male		741 239
Female		148 039
60–69 years		697 510
Male		568 685
Female		128 825
70 years and over		596 140
Male		474 844
Female		121 296
Unspecified age group		87 632

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	1 129 217	23 316 942
Sheep	543 986	7 306 600
Goats	261 100	3 620 673
Pigs	979 348	9 021 192
Equines	n.a.	n.a.
Horses	507 670	1 328 524
Mules	131 194	234 009
Asses	302 779	581 401
Poultry (1 000 head)	n.a.	n.a.
Chickens	11 082	320 754
Ducks	2 059	41
Geese	921	9
Turkeys	4 069	262
Other poultry	n.a.	35 352
Other animals	n.a.	
Rabbits	22 535	500 349
Insects		
Bees (hives)	33 981	1 351 041

METHODS OF IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>630 313</b>	<b>5 310 622</b>
Coated channels	159 876	n.a.
Ground channels	405 851	n.a.
Sprinkler	48 645	n.a.
Micro spraying	8 191	n.a.
Drip	20 881	n.a.
Others	64 112	n.a.

<sup>1</sup> UPAs are units engaged in agricultural and/or forestry activities.

## 1. HISTORICAL OUTLINE

The first National Agricultural Census (AC) in Nicaragua was conducted in 1963. A second census was conducted in 1971.<sup>1</sup> Almost 30 years later, Nicaragua carried out its third agricultural census, in 2001. The fourth AC, to which these metadata review and data refer, was conducted in 2011.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The census legislation includes:

- Decree<sup>2</sup> No. 102, approved on 4 October 1979, for the creation and organization of the National Institute of Statistics and Census (INEC), later renamed as the National Institute of Development Information (INIDE), responsible for conducting national surveys, including CAs; and
- Presidential Decree No. 66-2010, approved on 4 October 2010, Article 1 of which affirms “the national interest for preparation, planning, organization, collection, processing and dissemination of the Fourth National Agricultural Census (IV CENAGRO)”.

### **Institutional framework and international collaboration**

INIDE was in charge of the planning, technical organization and carrying out of the fourth AC, in close coordination with the Ministry of Agriculture and Forestry (MAGFOR).

A National Census Commission was established for the implementation and coordination of census activities. The Commission comprised the President of the Republic (head of the AC) and officials from the following ministries and institutions: the Ministry of the Interior, the Ministry of Foreign Affairs, the Ministry of Finance and Public Credit, the President of the Central Bank, the Ministry of Development, Industry and Trade, the Army of Nicaragua and the National Police.

The fourth AC was funded by the Government of Canada, the IADB, the Swiss Confederation, the Government of Norway, the Government of Brazil, the International Fund for Agricultural Development (IFAD) and the US Agency for International Development (USAID). In addition, FAO provided technical assistance for the AC.

### **Census staff**

For fieldwork operations there were recruited 4 244 employees, out of which 3 197 were enumerators and 1 047 supervisors.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as livestock, machinery and equipment, agricultural infrastructure.

### **Reference periods:**

- the agricultural year (from 1 May 2010 to 30 April 2011), for cultivated area and main purpose of production, forestry, aquaculture, labour force, water sources and irrigated area, agricultural loans, etc.;
- the last 12 months (1 May 2010 to 31 May 2011) for average milk production.

## 4. ENUMERATION PERIOD

Data collection was conducted from 15 May to 16 June 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). Some information on forestry and aquaculture was also collected. A community survey was carried out together with the census.

The **statistical unit** was the agricultural holding, defined as land used wholly or partly for agricultural production, livestock or a combination of both, which are operated as an economic unit within a municipality, regardless of size, type of tenure, or legal status. Agricultural holdings can be an individual (natural person), a cooperative, family collective, an enterprise, an indigenous community and the public administration.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Not applicable.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2011.

<sup>1</sup> However, all of information collected during the census was lost in the earthquake of 1972.

<sup>2</sup> Decree of the Board of Government of National Reconstruction of the Republic of Nicaragua.

**Frame**

Agriculture Record Segments (SEAs) from the AC 2001 were used, as well as the urban segments from the Population and Housing Census 2005 (CPV'05), which were households declaring to have a household member who performed some agricultural activity (as employer/employee or self-employed). For the Caribbean Coast, where MAGFOR sectors were not delimited, mapping provided by the CPV'05 was used.

**Complete and/or sample enumeration methods**

The fourth AC in Nicaragua was carried out using complete enumeration.

**Sample design (if sampling was used)**

No sampling was used.

**Data collection method(s)**

The information was collected by means of face-to-face interviews using paper questionnaires (the PAPI method).

**Questionnaire(s)**

Two questionnaires were used in the AC: one for holding-level data collection and the other for the community survey. The AC 2011 questionnaire covered all 16 items recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Census results were disseminated through the INIDE website. Safe access to AC microdata is provided to users.

**10. DATA PROCESSING AND ARCHIVING**

Coding and editing were done after fieldwork to check for inconsistencies. Double data entry was performed to minimize errors at the data entry stage. This stage was followed by an automated data editing.

**11. CENSUS DATA QUALITY**

A PES was conducted 15 days after completion of field data collection (July 2011), to assess the coverage and content errors of census data.<sup>3</sup>

**12. DATA DISSEMINATION**

The final results were disseminated through a final printed report, Atlas and 17 agricultural profiles. Five special studies were conducted by specialists in different subject areas.<sup>4</sup> The census results, including the microdata are available on the INIDE website.

**13. DATA SOURCES**

**INIDE.** 2012. *Informe Final, IV Censo Nacional Agropecuario*. Managua, Nicaragua. (also available at <http://www.inide.gob.ni/Cenagro/INFIVCENAGRO/IVCENAGROINFORME/assets/basic-html/index.html#1>).

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<sup>3</sup> The PES covered 8 875 farms. The purpose of the PES was to assess the coverage errors and response errors for certain variables.

<sup>4</sup> These were: (i) Small and Median Producers; (ii) Agricultural Sector in the Caribbean Coast in Nicaragua; (iii) Employment in the Agricultural Sector; (iv) Rural Agricultural Services; and (v) Water.

## NICARAGUA – AGRICULTURAL CENSUS 2011 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>262 546</b>	<b>6 054 869</b>
Individual	261 321	5 777 035
Family group	470	31 502
Cooperative	262	44 191
Public administration	60	6 110
Others	433	196 031

LAND TENURE		
	Number of parcels	Area (ha)
<b>Total</b>	<b>394 068</b>	<b>6 054 869</b>
Legal ownership	350 132	5 804 971
Rented from others	15 023	78 884
Non-legal owner-like possession	20 788	147 889
Other form of tenure	8 125	23 125

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>262 546</b>	<b>6 054 869</b>
Less than 0.35 ha	31 804	5 139
0.35–0.70 ha	16 676	10 374
0.70–1.76 ha	38 215	47 763
1.76–3.52 ha	35 672	94 725
3.52–7.04 ha	33 686	178 479
7.04–14.08 ha	29 881	314 171
14.08–35.22 ha	37 440	892 343
35.22–70.44 ha	21 238	1 086 834
70.44–140.88 ha	10 911	1 092 752
140.88–352.2 ha	5 469	1 171 892
352.2 ha and over	1 554	1 160 398

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>262 546</b>	<b>6 054 869</b>
Agricultural land	n.a.	n.a.
Arable land	n.a.	3 756 966
Land under temporary crops	n.a.	737 218
Land under temporary meadows	n.a.	2 317 868
Land temporarily fallow	n.a.	701 880
Land under permanent crops	n.a.	359 641
Permanent meadows and pastures	n.a.	953 832
Forest and other wooded land	n.a.	803 504
Other land	n.a.	180 927

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>261 321</b>	<b>5 777 035</b>
Male	200 428	5 008 662
Female	60 893	768 373

EMPLOYEES WORKING ON THE HOLDING, BY SEX		Number
<b>Total</b>		<b>950 040</b>
Male		789 832
Female		160 208
Permanent employees		132 445
Male		113 779
Female		18 666
Temporary employees		817 595
Male		676 053
Female		141 542

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		Number
<b>Total</b>		<b>261 321</b>
Male		200 428
Female		60 893
16–24 years		8 873
Male		6 796
Female		2 077
25–34 years		40 090
Male		31 977
Female		8 113
35–44 years		56 375
Male		44 126
Female		12 249
45–54 years		53 776
Male		40 484
Female		13 292
55–64 years		42 640
Male		31 661
Female		10 979
65 years and over		40 496
Male		30 221
Female		10 275
Age unknown		19 071
Male		15 163
Female		3 908

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	136 687	4 136 422
Pigs/swine	116 392	418 485
Poultry (1 000 head)	216 755	12 863
Other	126 067	

METHODS OF IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>11 598</b>	<b>100 097</b>
Surface	4 929	57 068
Sprinkler	2 773	29 010
Drip	1 586	5 675
Manually (watering can, hose)	2 699	2 673
Others	233	5 672

PERMANENT CROPS		
	Holdings	Area (ha)
<b>Total</b>	<b>104 334</b>	<b>293 231</b>
Tropical and subtropical fruits	n.a.	n.a.
Papayas	n.a.	722
Avocados	n.a.	1 930
Pineapples	n.a.	2 394
Mangoes	n.a.	2 683
Bananas	n.a.	54 462
Citrus fruits	n.a.	10 063
Oilseed crops	n.a.	n.a.
Oil palms	n.a.	13 261
Coconuts	n.a.	3 669
Sugar crops	n.a.	n.a.
Sugar cane	n.a.	63 544
Beverage crops and spice crops	n.a.	n.a.
Cocoa	n.a.	11 106
Coffee	n.a.	127 055
Other	n.a.	2 342

## 1. HISTORICAL OUTLINE

The first nationwide agricultural census (AC) in Panama was conducted in 1950 through complete enumeration; the second one was carried out in 1961, on a sample basis. Other five decennial censuses were conducted, through complete enumeration, in 1971, 1981, 1991 and 2001. The most recent one, to which the metadata review and data presented here refer, was carried out in 2011.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis included:

- Law No. 10 of 22 January 2009, that created the National Institute of Statistics and Censuses (INEC) as a National Direction ascribed to the General Comptroller of the Republic and substituting the former National Direction of Statistics and Censuses. Article 10 of the Law entrusts the INEC with undertaking of national censuses, including the ACs, and its Article 37 establishes that an AC should be undertaken at least once every ten years.
- Executive Decree N° 878 of 8 September 2010, which regulates the Seventh Agricultural Census 2011.

### **Institutional framework and international collaboration**

The INEC was in charge of the planning, technical organization and execution of the AC 2011. A National Census Committee was established, integrating representatives from the Ministry of Agricultural Development (MIDA); the Agricultural Development Bank (BDA); the National Revenue Service; and the INEC (including the heads of all divisions involved in the census).

### **Census staff**

The data collection staff consisted of approximately 40 000 persons, including enumerators, field supervisors, area supervisors, inspectors, secretaries and drivers.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for stock items such as number of trees and livestock, stock of machinery and equipment owned, number of household members, etc.

### **Reference periods:**

- the agricultural year (from 1 May 2010 to 30 April 2011), for crops, purpose of production, use of machinery and equipment, income source, etc.;
- the calendar year 2010, for land tenure, temporary and permanent crops, irrigation, agricultural practices, and aquaculture;
- the week before the enumeration day, for milk, cheese and eggs production, and the quantity and value sold;
- the previous month, for employment on the holding; and
- the period from 1 January 2011 to the day of the interview, for slaughtering of cattle.

## 4. ENUMERATION PERIOD

The field data collection was conducted from 24 April to 1 May 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). The census questionnaire also included some information on aquaculture.

The **statistical unit** was the agricultural holding, defined as “any extension of land used totally or partially for agricultural, livestock or forestry activities, regardless of title, size, or location, by a producer and the members of the producer’s household”.<sup>1</sup>

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country. In the cases of Colon City, San Miguelito District, and urban sectors of Ancon, Cristobal and Panama City, only holders detected in the Population and Housing Census (PHC) 2010 were interviewed.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The AC 2011 covered the holdings with more than 0.01 ha of land.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2011.

<sup>1</sup> However, if a member of a producer’s household works on a separate land, this will be treated as an independent agricultural holding unit; it may consist of one or several farms. Several farms or land parcels together constitute an agricultural holding unit, provided that they are located in the same district.



**Frame**

The PHC 2010 was undertaken less than one year before the AC 2011. A question in the PHC questionnaire allowed for the identification of households with agricultural activity. The PHC 2010 included a question to identify the households conducting agricultural holdings.

**Complete and/or sample enumeration methods**

The AC 2011 was carried out by complete enumeration.

**Sample design (if sampling was used)**

No sampling was used.

**Data collection method(s)**

Data collection was done by direct interview and the information was collected in paper forms (PAPI method).

**Questionnaire(s)**

For the AC 2011 data collection, one questionnaire was used, which covered 13 of the 16 core items<sup>2</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

The INEC prepared a spatial database of the entire country, which enabled preparation of maps to satisfy the needs of the censuses and surveys, as well as their planning and execution. Census results are available online.

**10. DATA PROCESSING AND ARCHIVING**

To obtain the census results in a timely manner, IINEC decentralized the data entry process to its regional offices in nine data capture centres. Microcomputer networks were established in each of the capture centres, consisting of a server with the Windows 2008 Server operating system, laptop computers for supervisors and data entry devices. The system for the processing of census questionnaires was developed using Microsoft Visual Studio.Net 2005, SQL Server 2008 database, CsPro 4.0.002 and Microsoft Office 2003.

**11. CENSUS DATA QUALITY**

The quality of final census data was assessed by means of control checks against sampling survey data of selected crops (coffee, sugar cane, rice, maize, etc.) and livestock.

**12. DATA DISSEMINATION**

The census results were published in seven volumes, including a methodological report of the AC 2011, from January 2012 to October 2013.<sup>3</sup> The census data are available online.

**13. DATA SOURCE**

**Instituto Nacional de Estadística y Censo.** 2011a. *Informe Metodológico del VII Censo Nacional Agropecuario, Contraloría General de la República de Panamá.* Panama. (also available at <http://www.contraloria.gob.pa/INEC/archivos/P6611Informe%20Metodologico%20del%20Censo%20Agropecuario%202011.pdf>).

**Instituto Nacional de Estadística y Censo.** 2011b. *Volumen I. Resultados Finales Básicos, VII Censo Nacional Agropecuario, Contraloría General de la República de Panamá.* Panama. (also available at [http://www.inec.gob.pa/Publicaciones/Default3.aspx?ID\\_PUBLICACION=364&ID\\_CATEGORIA=15&ID\\_SUBCATEGORIA=60](http://www.inec.gob.pa/Publicaciones/Default3.aspx?ID_PUBLICACION=364&ID_CATEGORIA=15&ID_SUBCATEGORIA=60)).

**14. CONTACT**

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<sup>2</sup> The following items were not covered: (i) "Presence of aquaculture on the holding"; (ii) "Presence of forest and other wood land on the holding"; and (iii) "Other economic production activities of the holding's enterprise".

<sup>3</sup> The seven volumes with census results are: (i) Volume I – Basic Final Results, VII National Agricultural Census 2011, January 2012; (ii) Volume II – Characteristics of the Producers and Farms, July 2012; (iii) Volume III – Tenure and Land Use, September 2012; (iv) Volume IV – Annual or Temporary Crops, November 2012; (v) Volume V – Permanent Crops, November 2012; (vi) Volume VI – Characteristics of Livestock Activities, November 2012; (vii) Gender Focus, October 2013, (viii) Methodological Report of the Agricultural Census 2011.

# PANAMA – AGRICULTURAL CENSUS 2011– MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>248 560</b>	<b>2 698 841</b>
Civil persons	246 820	2 385 107
Company or legal partnership	663	244 951
Others	1 077	68 783

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>248 560</b>	<b>2 698 841</b>
Holdings operated under one tenure	236 081	2 195 353
Legal ownership and owner-like possession	144 207	1 310 948
Non-legal ownership or owner-like possession	64 030	656 026
Rented from others	2 218	35 120
Land under collective ownership	25 626	193 260
Holdings operated under two or more tenure forms	12 479	503 489

LAND FRAGMENTATION		
	Holdings	
<b>Total</b>	<b>248 560</b>	
1 parcel	208 650	
2 parcels	24 226	
3 parcels	8 752	
4–5 parcels	4 580	
6–9 parcels	1 740	
10 parcels and over	612	

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>248 560</b>	<b>2 698 841</b>
Less than 0.1 ha	88 675	2 762
0.10–0.19 ha	9 378	1 150
0.20–0.49 ha	8 090	2 203
0.50–0.99	14 232	8 205
1.00–1.99 ha	27 484	31 312
2.00–2.99 ha	17 031	35 690
3.00–3.99 ha	10 646	32 823
4.00–4.99 ha	6 868	28 030
5.00–9.99 ha	20 095	130 762
10.00–19.99 ha	17 757	232 960
20.00–49.99 ha	16 289	485 640
50.00–99.99 ha	7 184	474 737
100.00–199.99 ha	3 051	396 350
200.00–499.99 ha	1 369	377 283
500.00–999.99 ha	294	189 564
1 000.00–2 499.99 ha	94	130 744
2 500.00 ha and over	23	138 629

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>248 560</b>	<b>2 698 841</b>
Agricultural land	407 731	2 266 062
Land under temporary crops	141 066	254 302
Land temporarily fallow	46 839	285 913
Land under permanent crops	219 826	188 519
Permanent meadows and pastures	86 740	1 537 328
Forest and other wooded land	30 440	367 780
Other land	56 300	64 999

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>856 839</b>
Male	450 186
Female	406 653
Engaged in agricultural activities on the holding	241 582
Male	166 727
Female	74 855

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE	
	Number
<b>Total</b>	<b>245 105</b>
Male	165 974
Female	79 131
Under 21 years	1 859
21–24 years	5 028
25–34 years	31 237
35–44 years	52 849
45–54 years	54 354
55–64 years	45 884
65 years and over	53 894

EMPLOYEES WORKING ON THE HOLDING	
	Number
<b>Total</b>	<b>298 296</b>

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>70 217</b>	
Cattle	43 858	1 728 748
Buffaloes	90	2 401
Sheep	1 333	18 713
Goats	1 027	8 354
Pigs/swine	23 909	322 121
Equines	42 328	116 791
Horses	40 965	114 395
Asses (donkeys) and mules	1 363	2 396
Poultry (1 000 head)	n.a.	n.a.
Chickens	158 587	18 719
Ducks and geese	15 830	103
Turkeys	5 207	18

METHODS OF IRRIGATION	
	Holdings
<b>Total</b>	<b>9 044</b>
Surface	3 641
Sprinkler	4 168
Drip	4 842
Other methods	7 248

SOURCES OF IRRIGATION WATER	
	Holdings
<b>Total</b>	<b>9 044</b>
River or stream	5 121
Well or groundwater	2 688
Waterhole	1 965
Aqueduct	7 460
Other	620

## 1. HISTORICAL OUTLINE

The first nationwide census of agriculture (CA) in Paraguay was undertaken in 1942/1944. The second census was undertaken in 1957, the third in 1981 and the fourth in 1991. The National Census of Agriculture 2008,<sup>1</sup> to which the metadata and data presented here refer, is the fifth CA to be conducted in the country.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legislation relating to the CA consisted of:

- Law No. 81/92 of November 1992, which organizes the Ministry of Agriculture and Livestock (MGA). According to this law, the Directorate of Agricultural Censuses and Statistics (DCEA) is responsible for developing and keeping up-to-date the statistics related to the agricultural sector and, for this purpose, periodically conducting national agricultural censuses;
- Decree No. 6507/05, which regulates the responsibilities for conducting the CA (the census budget is approved by means of Government Decree); and
- the Statistics Law of 1942 (Decreto-Ley No. 11.126), which regulates the functionality of the General Directorate of Statistical Surveys and Census (DGEEC/STP).

### **Institutional framework and international collaboration**

The DCEA of the MGA was in charge of the technical direction and general supervision of the CA 2008. The hiring, training and evaluation of the personnel involved in census data collection was outsourced.<sup>2</sup>

The CA 2008 was funded by the European Union<sup>3</sup> and the national budget.

### **Census staff**

In total, 5 035 persons were involved in the fieldwork, of which 3 994 enumerators, 774 supervisors, 235 district chiefs, 17 departmental chiefs, 12 departmental coordinators, and three other support staff.

## 3. REFERENCE DATE AND PERIOD

### **Reference days:**

- the day of the interview, for the demographic characteristics of the household members and the existence of pastures;
- 1 May 2008, for permanent crops, forestry, livestock, stock of owned machinery, etc.

**Reference period:** agricultural year (from 1 July 2007 to 30 June 2008), for land tenure, land use, temporary crops, employment, use of machinery, credit, agricultural practices and selling of produce, etc.

## 4. ENUMERATION PERIOD

The census enumeration was conducted in two stages: (i) from 14 April to 31 August 2008; and (ii) from October 2008 to January 2009, to complete the enumeration and improve coverage of large- and medium-size holdings.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding, defined as all land wholly or partly used for agricultural production and operated as one technical unit under a single management or together with others, without regard to title, legal form, size or location.

Two types of holdings are included in the definition: those “with land” (conventional holdings) and those “without land”, for which the land is not a substantial input for production and the holdings are engaged in livestock farming.

## 6. GEOGRAPHIC COVERAGE

The agricultural census covered the entire country.

## 7. CUT-OFF THRESHOLDS AND OTHER EXCLUSIONS

The census covered all holdings above any of the following minimum size limits:

- 0.1 ha of temporary crops, commercial orchards and/or permanent crops (fruit trees and permanent industrial crops in regular plantation), or flowers and/or ornamental plants including greenhouses;
- three adult bovines;
- five sheep or goats, or pigs (any age);
- 100 roosters, hens, chickens, chicks, ducks, guineas, turkeys or geese; or
- ten beehives.

<sup>1</sup> In Spanish, the *Censo Nacional Agropecuario 2008*.

<sup>2</sup> The hiring, training and evaluation of the personnel involved in census data collection was done under the management of Euro Invest S.A., a company in charge of the management of human resources.

<sup>3</sup> Project for Strengthening the Competitiveness of the Paraguayan Exporting Sector – FoCoSep.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The CA 2008 was carried out using the classical approach. The census enumeration was conducted in two stages, to ensure full coverage.

### **Frame**

The census frame was the cartography prepared in the pre-census phase.

### **Complete and/or sample enumeration methods**

A complete enumeration of holdings above the established thresholds was used in the CA 2008.

### **Sample design (if sampling was used)**

Not applicable.

### **Data collection method(s)**

The fieldwork data collection was performed in two stages to ensuring full coverage. In the first stage, the country was canvassed and the identified holdings were interviewed. To complete the coverage, in the second stage, different types of producers that had not been enumerated during the first stage of enumeration were covered.<sup>4</sup> The census was undertaken through personal interviews, using the PAPI method.

### **Questionnaire(s)**

One questionnaire was used for data collection. The CA 2008 covered 14 of the 16 core items recommended in the 2010 WCA.<sup>5</sup>

## 9. USE OF TECHNOLOGY

In the pre-enumeration stage, GPS was used for cartographic works to delimit the EAs. A bar code optical reader was used for monitoring and control of documents. The census data were disseminated online.

## 10. DATA PROCESSING AND ARCHIVING

Data entry was done manually, by the recruited operators. Validation was carried out using a computer data validation program. Imputations were done by means of automatic allocation, based on the means of district production averages. The SPSS programme was used, based on the tabulated design of the 1991 census for comparability. The archives are placed on a central server and are managed through networks.

## 11. CENSUS DATA QUALITY

A PES was conducted in February 2009 in four departments and seven districts to evaluate the quality of the data.

## 12. DATA DISSEMINATION

The census results were released through printed publications (in six volumes) and are accessible online.

## 13. DATA SOURCES

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 12–16 December 2016, Montevideo, Uruguay. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 10 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020montevideo/en/>

**Ministerio de Agricultura y Ganadería.** 2009. *Censo Agropecuario Nacional 2008, Volumen I-VI*. San Lorenzo, Paraguay. (also available at <http://www.arp.org.py/images/files/CENSO%20AGROPECUARIO%202008.pdf>).

## 14. CONTACT

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<sup>4</sup> All types of holdings that had not been covered during the first stage were enumerated.

<sup>5</sup> The following core items were not covered by the CA: (i) "Presence of aquaculture on the holding"; (ii) "Presence of irrigation on the holding".

# PARAGUAY – CENSUS OF AGRICULTURE 2008 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>289 649</b>	<b>31 086 894</b>
Civil persons	286 807	21 776 705
An individual	278 967	15 698 194
Two or more individuals	7 840	6 078 511
Society or company	1 599	8 508 427
Government	108	115 393
Other form of legal status	1 135	686 369

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>289 649</b>	<b>31 086 894</b>
Owned	134 912	24 350 406
Partial ownership	64 619	1 280 518
Rented or sharecropping	22 456	2 467 234
Non-legal owner-like possession	77 878	1 409 051
Other form of tenure	13 854	1 579 686

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>289 649</b>	<b>31 086 894</b>
Holdings without land	774	
Holdings with land	288 875	31 086 894
Less than 1 ha	15 586	6 894
1–5 ha	101 643	231 118
5–10 ha	66 218	416 702
10–20 ha	57 735	685 381
20–50 ha	22 865	619 986
50–100 ha	6 879	459 555
100–200 ha	5 234	699 257
200–500 ha	5 251	1 600 537
500–1 000 ha	2 737	1 810 119
1 000–5 000 ha	3 443	7 200 531
5 000–10 000 ha	684	4 702 034
10 000 ha and over	600	12 654 779

LAND USE		
	Holdings	Area (ha)
<b>Total holdings with land</b>	<b>288 875</b>	<b>31 086 894</b>
Agricultural land	n.a.	21 674 935
Cropland	260 473	3 365 203
Fallow land	102 572	472 143
Permanent meadows and pastures	148 935	17 837 589
Forest and other wooded land	102 611	7 477 454
Other land	248 907	1 934 506

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>1 077 589</b>
Engaged in agricultural activities on the holding	421 667

EMPLOYEES WORKING ON THE HOLDING, BY SEX	
	Number
<b>Total</b>	<b>320 428</b>
Male	299 251
Female	21 177
Permanent employees	81 754
Male	68 191
Female	13 563
Temporary employees	238 674
Male	231 060
Female	7 614

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	n.a.	
Cattle	191 689	10 496 641
Sheep	23 134	364 514
Goats	9 689	129 898
Pigs	199 895	1 072 655
Horses	73 729	283 804
Asses (donkeys)	2 975	10 700
Poultry (1 000 head)	n.a.	n.a.
Chickens	233 369	16 056
Other	100 145	1 120
Insects		
Bees (hive)	11 515	61 228

MACHINERY AND EQUIPMENT BELONGING TO THE HOLDING		
	Holdings	Units
Total tractors of all kind	17 733	25 823
Other (machine-powered)	n.a.	
Subsoiler	26 658	14 722
Carpidora rotary	5 400	6 227
Grain seeder	5 294	6 410
Seeder for sowing	7 281	9 173
Automotive harvester	5 547	7 393
Sprayer	3 013	3 771
Trucks, jeep	19 563	29 063

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) in Peru was conducted in 1961 (jointly with the Census of Population and Housing), followed by the ACs conducted in 1972 and 1994. The fourth AC, to which the metadata review and data presented here refer, was carried out in 2012.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The AC legislation consisted of the following:

- Census Law No. 13248, of 24 August 1959, by which it was established that, starting in 1960, economic censuses (among others) are to be carried out in the agricultural sector;
- Statistical Law No. 21372 of December 1975, which established the National Statistical System (SEN) and the National Statistical Institute (INE) as the coordinators of the system;
- Legislative Decree No. 604, April 1990, which established the National Institute of Statistics and Informatics (INEI) (Article 9b);
- Emergency Decree DU-055/2011, of 15 October 2011, by which the conduct of the IV National Census of Agriculture was declared, and its planning, organization and direction was entrusted jointly to the INEI and the Ministry of Agriculture (MoA);
- Supreme Resolution No. 004-2012-AG, Lima, of 23 February 2012, according to which the Executive established the operation and composition of the Advisory Committee of the fourth AC, which was in charge of supporting and advising the preparation and execution of the AC itself; and
- Law No. 29158 (Organic Law of the Executive Power), Articles 35 and 37.

### **Institutional framework and international collaboration**

INEI is the main institution responsible for the implementation of ACs in the country. An Advisory Committee was formed with representatives from INEI, the MoA, the Ministry of Finance, regional statistical offices, regional agricultural offices, producers' associations, etc. The AC 2012 was funded from the national budget. Technical assistance for the AC 2012 was provided by FAO.

### **Census staff**

In total, approximately 44 000 persons were involved in the census activities.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for land use, presence of crops, land tenure, irrigation, stock of machinery and equipment, livestock, demographic characteristics of the household, etc.

### **Reference periods:**

- agricultural year 2011/2012 (from 1 August 2011 to 31 July 2012), for temporary crop plantings, agricultural practices and employment, etc.
- the last 12 months, for technical assistance and credit received by holdings, training, etc.

## 4. ENUMERATION PERIOD

Data collection was carried out from 15 October to 15 November 2012.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and livestock production) activities.

The **statistical unit** was the agricultural unit (AU), defined as “the land or set of lands used totally or partially for agricultural production, including livestock, conducted as an economic unit, by an agricultural producer, regardless of size, tenure regime or legal status”. AUs were classified according to their juridical status.

## 6. GEOGRAPHIC COVERAGE

The AC covered the entire country, including urban areas where AUs were identified.<sup>1</sup>

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No exclusions were applied.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2012.

<sup>1</sup> Only those districts where there were no agricultural units (purely urban districts) were excluded.

**Frame**

The frame was built in the first phase of the census activities.

**Complete and/or sample enumeration methods**

The census was a complete enumeration exercise carried out in two phases:

- The first phase focused on the location of operators (names and addresses) for every parcel found in the field and land owners with or without agricultural activity, as well as on the location of the lands.
- In the second phase, one paper questionnaire was filled out for each identified holding. The collection of data on land use was done on a parcel basis.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

The census was conducted through face-to-face interviews, using the PAPI method.

**Questionnaire**

A single questionnaire was used in the AC 2012.

The questionnaire covered 15 of the 16 core items recommended in the 2010 WCA.<sup>2</sup>

**9. USE OF TECHNOLOGY**

Scanning technology was applied for census data capture. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Scanning technology was used for census data capture.

**11. CENSUS DATA QUALITY**

From the total agricultural units enumerated in the AC, 98.5 percent of questionnaires were fully completed, while 1.5 percent included incomplete information.

**12. DATA DISSEMINATION**

Preliminary results were published in December 2012. In July 2013, the final results were disseminated by means of a printed report and CD-ROMs. Safe access to census microdata was also provided. Links to the AC results are available in the web portals of each institution that participated in the Advisory Committee, as well as of the decentralized offices of the MoA. The census results were disseminated at the national and subnational (departmental, provincial, district, etc.) levels.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 12–16 December 2016, Montevideo, Uruguay. In: *World Programme for the Census of Agriculture* [online]. Rome. [Cited 10 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020montevideo/en/>

**Instituto Nacional de Estadística e Informática (INEI).** 2019. *IV Censo Nacional Agropecuario 2012* [online]. Lima, Peru. [Cited on 12 August 2019]. <http://siea.minagri.gob.pe/siea/?q=iv-censo-nacional-agropecuario-2012>

**Instituto Nacional de Estadística e Informática (INEI).** 2013. *Resultados Definitivos, IV Censo Nacional, Agropecuario 2012*. Lima, Peru. (also available at <https://www.agrorural.gob.pe/dmdocuments/resultados.pdf>).<sup>3</sup>

**14. CONTACT**

Instituto Nacional de Estadística e Informática (INEI)  
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Website: [www.inei.gob.pe](http://www.inei.gob.pe)

<sup>2</sup> The following item was not covered: "Presence of aquaculture on the holding".

<sup>3</sup> Other census materials are available on the INEI website: <https://www1.inei.gob.pe/>

## PERU – AGRICULTURAL CENSUS 2012 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>2 260 973</b>	<b>38 742 465</b>
Civil persons	2 246 702	14 112 231
Juridical persons	14 271	24 630 233

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>2 246 702</b>	<b>14 112 231</b>
Male	1 554 781	10 921 621
Female	691 921	3 190 610

LAND TENURE		
	Holdings	Area (ha)
<b>Total holdings with land</b>	<b>2 213 506</b>	<b>38 742 465</b>
Holdings operated under one tenure form	2 012 846	37 355 553
Owned	1 516 888	34 173 649
Leased	94 244	380 504
Communal	256 387	1 406 074
Land under possession	94 063	913 422
Others	51 264	481 904
Holdings operated under two or more tenure forms	200 660	1 386 911

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		Number
<b>Total</b>		<b>2 246 702</b>
Male		1 554 781
Female		691 921
Under 15 years		359
Male		223
Female		136
15–29 years		272 159
Male		189 367
Female		82 792
30–44 years		659 309
Male		471 589
Female		187 720
45–64 years		848 425
Male		588 131
Female		260 294
65 years and over		466 450
Male		305 471
Female		160 979

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Total holdings with land</b>	<b>2 213 506</b>	<b>38 742 465</b>
1 parcel	1 093 522	28 763 850
2 parcels	468 010	4 076 536
3 parcels	260 162	2 184 290
4 parcels	144 517	1 199 592
5 parcels	146 488	1 288 808
6–10 parcels	76 883	868 737
11–15 parcels	14 897	199 764
16 parcels and over	9 027	160 888

HOLDINGS BY HOUSEHOLD SIZE		Number
<b>Total</b>		<b>2 246 702</b>
1 person		428 103
2–3 persons		848 993
4–5 persons		638 652
6–9 persons		314 597
10 persons and over		16 357

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>2 260 973</b>	<b>38 742 465</b>
Holdings without land	47 467	
Holdings with land	2 213 506	38 742 465
Less than 0.5 ha	507 137	99 700
0.5–0.9 ha	324 706	204 933
1.0–1.9 ha	430 877	536 481
2.0–2.9 ha	240 694	531 380
3.0–3.9 ha	154 291	491 510
4.0–4.9 ha	96 710	404 748
5.0–5.9 ha	81 986	421 869
6.0–9.9 ha	136 578	996 442
10.0–14.9 ha	81 937	926 383
15.0–19.9 ha	36 337	595 696
20.0–24.9 ha	27 560	580 586
25.0–29.9 ha	12 652	333 586
30.0–34.9 ha	17 142	526 939
35.0–39.9 ha	6 217	226 663
40.0–49.9 ha	11 864	504 472
50.0–99.9 ha	23 363	1 519 797
100.0 ha and over	23 455	29 841 281

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total</b>		<b>7 646 887</b>
Male		5 564 446
Female		2 082 441
Engaged in agricultural activities on the holding		3 830 549
Male		1 632 956
Female		2 197 593

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>2 260 973</b>	<b>38 742 465</b>
Agricultural land <sup>1</sup>	2 128 087	7 125 008
Arable land	1 830 380	4 924 324
Land under temporary crops	1 389 823	1 954 995
Land temporarily fallow	1 202 269	2 969 330
Land under permanent crops	782 789	2 200 683
Forest and other wooded land	422 090	10 939 274
Natural pastures	640 888	18 018 795
Other land	974 463	2 659 388

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	881 920	5 156 044
Sheep	655 604	9 523 198
Goats	95 184	1 038 109
Pigs/swine	598 363	2 224 295
Camels and camelids	111 237	4 431 785
Alpacas	82 459	3 685 516
Llamas	55 250	746 269
Poultry (1 000 head)	1 268 020	121 394
Chickens	270 930	92 017
Ducks	217 834	1 681
Turkeys	126 757	1 966
Other	1 185 566	25 730
Other animals	776 424	
Rabbits and hares	71 766	490 836
Guinea pigs	763 360	12 695 030

<sup>1</sup> Agricultural land without pastures and meadows.



*Puerto Rico is one of the territories collectively referred to as “U.S. Outlying Areas”. For statistical purposes, it is recorded as a separate entity in the World Census of Agriculture Database (in the Americas Region). Consequently, the results related to the United States of America bear only upon the continental territory of the country.*

## 1. HISTORICAL OUTLINE

The first Census of Agriculture (CA) in the Commonwealth of Puerto Rico was conducted in 1910. From that year to 1950, a CA was taken every ten years, in conjunction with the decennial censuses of population. Later, the timing was adjusted, such that the CA is conducted on the basis of a five-year data collection cycle, covering the years ending in 2 and 7. The CA 2002 for Puerto Rico was the first to be taken on a calendar-year basis, bringing the Puerto Rico census in line with the United States of America; subsequent censuses continue to be done on a calendar basis. The present metadata review and data refers to the CA 2012.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA is required by law under the Census of Agriculture Act of 1997, Public Law 105-113 (Title 7, United States Code, Section 2204g). The law directs the Secretary of Agriculture to conduct a census of agriculture every five years, covering the years ending in 2 and 7.

### **Institutional framework and international collaboration**

The census data for Puerto Rico were collected in accordance with a Memorandum of Agreement approved by the Administrator of NASS and by the President of the Puerto Rico Planning Board. The census was conducted with the cooperation and assistance of the Puerto Rico Department of Agriculture (DA), the University of Puerto Rico, and the Cooperative State Research, Education, and Extension Service. The NASS provided technical assistance at various levels, while the DA of Puerto Rico was responsible for recruiting and training local officers and field staff and supervising local administrative matters.

### **Census staff**

One NASS staff is assigned to the CA in Puerto Rico. The project manager, crew leaders and enumerators employed for the census in Puerto Rico received special training, in accordance with instructions prepared by NASS. The training included practice on interviewing and filling out the report form, as well as detailed discussion of the enumerator’s instructions.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 December 2012, for inventory items such as livestock, machinery, equipment, buildings, facilities on farms and operator’s characteristics.

**Reference period:** the calendar year (from 1 January to 31 December 2012), for crop production, crop and livestock sales, and expense data.

## 4. ENUMERATION PERIOD

The enumeration period was from 1 January to 31 December 2012.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production).

The **statistical unit** is a farm, defined as “a place from which USD 500 or more of agricultural products were produced and sold, or normally would had been sold, during the 12-month period between 1 January and 31 December 2012.” The statistics collected in the census relate to places with agricultural operations qualifying as farms according to the census definition.

## 6. GEOGRAPHIC COVERAGE

The CA covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following minimum size limit was used to include units in the census: “USD 500 or more of agricultural products were produced and sold, or normally would have been sold, during the census year”.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CA 2012.

### **Frame**

The Puerto Rico CA 2012 was conducted using a multiple frame approach, consisting of a list frame and an area frame.<sup>1</sup>

<sup>1</sup> Every address on the census list was posted a report form except for certain special records, which were enumerated face to face. This was achieved by combining the information extracted from the CML provided by the Puerto Rico DA and the area sample survey, which was conducted to identify the farms not listed on the CML.

### **Complete and/or sample enumeration methods**

The CA 2012 was a complete enumeration. A report form was sent to farm operators on the census list (CML). This was supplemented by an area sample, which accounted for farms Not-on-the-Mail-List (NML).<sup>2</sup>

### **Sample design (if sampling was used)**

From the initial CML of 16 971 names and addresses stratified by size and type of farm, equal weighting was applied to responding farms and non-responding farms, computed by response homogeneity group (RHG). Records found to be undeliverable were excluded from the nonresponse calculations. Farms not included in the CML were sampled in an area frame.<sup>3</sup>

### **Data collection method(s)**

Data collection was accomplished primarily through the mail-out/mail-back method. The list was mailed with a census report form. Those that did not respond to this first report form received a second report form in the post. Enumerators from the DA and the Extension Service conducted a field follow-up, to visit and enumerate operations that did not respond by post. Farmers returned the completed form to the National Processing Centre (NPC) in Jeffersonville, IN, for processing.

### **Questionnaire(s)**

One questionnaire (reporting form) was used for the CA 2012.<sup>4</sup> The CA 2012 covered all 16 core items recommended in the WCA 2010.

## **9. USE OF TECHNOLOGY**

New technology was applied in the CA 2012 for data capture of paper questionnaires (using optical scanning), data archiving and anonymization, as well as online dissemination of census results. An online database enables users to retrieve customized tables with census data at the national, state and county level.

## **10. DATA PROCESSING AND ARCHIVING**

The report forms returned were automatically checked in by scanning devices that identified each case referring to the barcode in the address label of the form. Data were retrieved from the returned forms using optical scanning. Missing data were supplied on the basis of similar farms and were assigned farm classification codes, which were necessary for tabulating the data. Data from each report were subjected to a detailed item-by-item computer edit.

## **11. CENSUS DATA QUALITY**

The total sampling error was derived from the estimate of the NML component using an area frame and assumptions were used to allocate equal weights to respondents and non-respondents in the CML component. The NML and CML components were combined to provide a single estimate. The estimate reflects complete and unduplicated coverage, provided that nonresponse bias and non-sampling errors are not operative.

## **12. DATA DISSEMINATION**

The census data are publicly available at the website of the United States Department of Agriculture (see section 13). Users may choose between the Spanish and English versions.

## **13. DATA SOURCES**

**United States Department of Agriculture, National Agriculture Statistics Service (USDA, NASS).** 2014a. Census of Agriculture. In: *USDA, NASS* [online]. Washington, D.C. [Cited 15 July 2019]. [www.agcensus.usda.gov](http://www.agcensus.usda.gov).

**United States Department of Agriculture, National Agriculture Statistics Service (USDA, NASS).** 2014b. *2012 Census of Agriculture, Puerto Rico, Island and Municipio Data, Volume 1*, Geographic Area Series Part 52. Washington, D.C., United States of America. (also available at [https://www.nass.usda.gov/Publications/AgCensus/2012/Full\\_Report/Outlying\\_Areas/prv1.pdf](https://www.nass.usda.gov/Publications/AgCensus/2012/Full_Report/Outlying_Areas/prv1.pdf)).

## **14. CONTACT**

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 Telephone: (+1) 7877220871  
 Website: <https://www.agricultura.pr/>

<sup>2</sup> Of approximately 7 500 segments available for sampling, 300 segments were selected. All NML farms discovered within the 300 sampled segments were included in the area sample. This ensured that complete enumeration was achieved.

<sup>3</sup> NASS stratified the area frame based on agricultural intensity with strata. An additional sampling enhancement involved the grouping of municipalities with similar agriculture into nine clusters. Within each stratum and cluster, a random sample of PSUs was selected and then further subdivided into target sampling units called segments. During the pre-screening process, 589 NML farm operators were found in the 300 sampled area segments; however, only 295 of these original NML records were determined to be actual farm operators. Enumerators used aerial photos and municipal maps to identify all farm operators within each assigned area segment.

<sup>4</sup> The reporting form was prepared by NASS, in cooperation with the Planning Board and the Inter-Agency Working Group, which included members of the Puerto Rico DA, the College of Agricultural Sciences at the University of Puerto Rico, Mayaguez Campus (RUM), the Extension Service, and other data users.

## PUERTO RICO – CENSUS OF AGRICULTURE 2012 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>13 159</b>	<b>236 736</b>
Civil persons	11 938	164 489
Partnership	117	7 452
Juridical persons	738	55 908
Other	366	8 888

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>13 159</b>	<b>236 736</b>
Full owner	9 362	111 567
Part owner	1 069	58 020
Tenant	2 728	67 149

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>13 159</b>	<b>236 736</b>
Under 3.93 ha	5 129	8 499
3.93–7.86 ha	2 859	15 816
7.86–19.65 ha	2 872	34 408
19.65–39.30 ha	940	25 814
39.30–68.78 ha	563	29 611
68.78–102.18 ha	401	32 909
102.18 ha and over	395	89 679

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>13 159</b>	<b>236 736</b>
Cropland	12 510	175 457
Harvested cropland	10 008	51 546
Land under temporary meadows	4 048	88 842
Cropland used for cover crops	281	2 082
Land temporarily fallow	4 931	31 798
Land with failed crops	773	1 189
Pastureland and rangeland other than cropland and woodland	2 033	27 175
Woodland, forest, and underbrush	3 130	17 285
Other land	9 119	16 820

HOLDERS, BY AGE	
	Number
<b>Total</b>	<b>13 159</b>
Under 25 years	20
25–34 years	487
35–44 years	1 369
45–54 years	2 936
55–64 years	3 612
65 years and over	4 735

HOLDINGS, BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>13 159</b>
1 person	4 823
2 persons	3 421
3 persons	2 557
4 persons	1 712
5 persons and over	646

HOLDERS AND CO-HOLDERS, BY SEX	
	Number
<b>Total</b>	<b>13 159</b>
Male	12 066
Female	1 093
<b>More than one co-holder (joint holders)</b>	<b>3 261</b>
Co-holders are male	2 154
Co-holders are female	1 107

HIRED MANAGERS AND EMPLOYEES ON THE HOLDING	
	Number
Hired managers	1 974
Total employees	30 122

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	3 223	257 285
Sheep	425	12 539
Goats	470	5 655
Pigs	631	48 262
Horses	1 214	10 307
Poultry (1 000 head)	1 560	10 895
Chickens	1 521	10 871
Guinea	222	19
Other poultry	208	4
Other animals	n.a.	
Rabbits	329	15 927
Other	10	
Insects		
Bees (hives)	46	1 274

METHODS OF IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>1 073</b>	<b>21 594</b>
Surface	198	n.a.
Sprinkler	297	n.a.
Localized irrigation (drip irrigation)	468	n.a.
Others (Unspecified sources)	109	n.a.

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Four-wheel tractors	1 941	4 110
Other (machine-powered)	n.a.	
Crawler tractors	428	522
Coffee depulpers	437	503
Mechanical coffee dryers	310	560
Solar or air coffee dryers	99	167
Mechanical coffee washers	172	210
Milking machines	315	4 084
Milk coolers	315	472
Emergency electric generators	1 770	1 990

## 1. HISTORICAL OUTLINE

The 2007 Saint Lucia Census of Agriculture (CA), to which the present metadata review and data refer, is the country's sixth agricultural census. Previous agricultural censuses were conducted in 1946, 1961, 1973/74, 1986<sup>1</sup> and 1996.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA 2007 was conducted in accordance with Statistical Act No. 13 of 1973, more specifically, Sections 6, 7, 8, 9, 10, 11, 12, 13, and 14. For the AC 2007, the Cabinet of Ministers of Saint Lucia approved a Censal Decree. Section 3 of the Act prescribes the duties of the Central Statistical Office (CSO); the first listed duty is "to take any census in the Island".

Section 4 of the Act establishes that the Statistician "may delegate in writing his powers and functions under this Act". For the CA 2007, such delegation was done by means of a 2007 Censal Decree approved by the Cabinet of Ministers; the Decree appointed the Corporate Planning Unit of the Ministry of Agriculture, Forestry and Fisheries (MAFF)<sup>2</sup> as the office in charge of collaborating with the CSO.

### **Institutional framework and international collaboration**

The CA 2007 was organized on a hierarchical basis. The Chief Agricultural Planning Officer at MAFF was responsible for the general coordination of the census. The exercise was carried out in close collaboration with the Central Statistical Office (CSO) and the multi-institutional Agricultural Census Committee. The Decree appointed a Census Advisory Committee of 18 members from MAFF, the CSO and producers' associations.

The CA 2007 was funded by the national budget. FAO provided technical assistance for the census.

### **Census staff**

The fieldwork for the CA 2007 involved 186 enumerators, 36 field supervisors and five field coordinators.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items such as holder's household composition, holding area, number of parcels, land tenure, number of trees and livestock.

**Reference period:** calendar year 2006, for labour force, land use by parcel and land use categories, etc.

## 4. ENUMERATION PERIOD

The census data collection was conducted from 22 January to 15 March 2007.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production, under single management, comprising all livestock kept and land used, wholly or partly, for agricultural production purposes, without regard to title, legal form and above a certain minimal threshold (point 7).

## 6. GEOGRAPHIC COVERAGE

The census covered the entire island territory.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were established to distinguish small holdings from other holdings:

- one eighth of an acre (1 acre, or 0.4 ha) of any temporary crop;
- ten bearing trees of any tree crop;
- 100 mats of banana and/or plantain;
- one head of cattle;
- two pigs or goats or sheep or one head of any two of these; or
- 12 poultry, 12 rabbit, or 12 head of poultry and rabbits together.

Holdings with activity exceeding at least one of the cut-off limits mentioned above were enumerated by means of the holding questionnaire. The rest of the holdings were enumerated using the screening form (see section 8, "Questionnaire(s)").

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach (short-long questionnaire concept) was used in the CA 2007 (see "Questionnaire(s)" below).

<sup>1</sup> The AC 1986 was the first one to be conducted in Saint Lucia as an independent state.

<sup>2</sup> Currently: the Ministry of Agriculture, Fisheries, Physical Planning, Natural, Resources and Co-operatives.

**Frame**

Data from the 2001 Population and Housing Census (PHC), along with records from other sources (agriculture extension officers, farmer associations, etc.), were used to build the census frame. The cartography of the CA was the same as that used for the PHC 2001; the same EDs were also used. This procedure allowed for comparisons and geographical links to be drawn between the two censuses.

A list including farms of more than 25 acres, farms with greenhouses and poultry farms was compiled prior to the census enumeration to ensure complete coverage.

**Complete and/or sample enumeration methods**

The CA 2007 was conducted by complete enumeration.

**Sample design (if sampling was used)**

Not applied.

**Data collection method(s)**

The information was collected by means of face-to-face interviews using paper questionnaires (PAPI method).

**Questionnaire(s)**

Two types of questionnaires were used: (i) a “screening form”; and (ii) a “holding questionnaire” (long questionnaire). The holdings engaging in activity exceeding at least one of the cut-off limits mentioned above (see section 7), were enumerated by means of the holding questionnaire. The rest of the holdings were enumerated by means of the screening form.<sup>3</sup>

The CA 2007 covered all 16 core items recommended by FAO in the 2010 WCA round.

**9. USE OF TECHNOLOGY**

The census results were disseminated online.

**10. DATA PROCESSING AND ARCHIVING**

The data were keypunched in batches and coded. The editing of the census data was also performed manually. This comprised 100-percent first and second reviews; 10 percent of the reviewed questionnaires were screened, and if any problem was identified the entire batch was reviewed again. Imputation was used in extreme cases and after exhausting all other sources. Validation of census data was performed through quality checks, mainly with external sources. SPSS was used for data processing. Users may access the census results (only aggregate data) via institutional websites.

**11. CENSUS DATA QUALITY**

Intensive field supervision was applied to ensure quality during the field operations.

**12. DATA DISSEMINATION**

The final CA 2007 results were disseminated through: (i) the printed report of final census results; (ii) two thematic analyses, on gender and livestock respectively; (iii) a brochure titled “Portrait of main findings”; (iv) a seminar for the presentation of census results (18 October 2007); and (v) the website.

**13. DATA SOURCES**

**Ministry of Agriculture, Forestry and Fisheries, Government of St. Lucia.** 2007. 2007 St. Lucia census of agriculture. Portrait of the main findings, Summary of Census Results and their Comparison with Previous Censuses., Castries, Saint Lucia. Paper presented at the Dissemination Seminar, Castries, Saint Lucia, 18 October 2007. (also available at <http://www.malff.com/images/stories/Census%20Data/2007%20Census%20of%20Agriculture%20Summary%20Report.pdf>St Lucia\_census\_agriculture.pdf).

**14. CONTACT**

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Website: <http://moa.malff.com/index.php/hometop>

<sup>3</sup> The country was divided into 421 EDs. Enumerators were required to canvass the ED assigned identifying all households in it, and applying the screening form to identify those holdings above the thresholds, as well as to collect information on small holdings below them. The items of the screening form comprised: area with temporary crops, selected fruit trees, livestock (including poultry), beehives, and engagement in fishing activities for households below the threshold. The long questionnaire was applied to holdings above the threshold.

# SAINT LUCIA – CENSUS OF AGRICULTURE 2007– MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>9 972</b>	<b>12 223</b>
Civil persons	9 956	11 609
Juridical persons	16	614

LAND FRAGMENTATION		
	Holdings	Number of parcels
<b>Total</b>	<b>9 972</b>	<b>11 503</b>
Holdings without land	524	
Holdings with land	9 448	11 503
1 parcel	7 801	7 801
2 parcels	1 316	2 632
3 parcels	273	819
4 parcels and over	58	251

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>9 972</b>	<b>12 223</b>
Holdings without land	524	
Holdings with land	9 448	12 223
Less than 0.2 ha	2 420	182
0.2–0.4 ha	1 340	304
0.4–0.8 ha	1 749	840
0.8–2 ha	2 254	2 632
2–4 ha	1 156	2 945
4–10 ha	454	2 452
10–20 ha	51	709
20–40 ha	13	332
40 ha and over	11	1 828

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>9 972</b>	<b>12 223</b>
Agricultural land	n.a.	9 927
Arable land	n.a.	2 677
Land under temporary crops	n.a.	1 325
Land under temporary meadows	n.a.	242
Land temporarily fallow	n.a.	1 110
Land under permanent crops	n.a.	6 881
Permanent meadows and pastures	n.a.	368
Forest and other wooded land	n.a.	1 503
Other land	n.a.	794

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>9 800</b>	<b>11 609</b>
Male	6 894	9 339
Female	2 906	2 271

HOLDINGS, BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>9 800</b>
1 person	2 198
2–3 persons	3 680
4–5 persons	2 480
6–9 persons	1 322
10 persons and over	120

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE	
	Number
<b>Total</b>	<b>9 800</b>
Male	6 894
Female	2 906
Under 15 years	122
Male	85
Female	37
15–19 years	48
Male	36
Female	12
20–24 years	154
Male	126
Female	28
25–34 years	915
Male	679
Female	236
35–44 years	2 162
Male	1 541
Female	621
45–54 years	2 344
Male	1 631
Female	713
55–64 years	1 920
Male	1 340
Female	580
65 years and over	2 135
Male	1 456
Female	679

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>32 919</b>
Engaged in agricultural activities on the holding	7 195
Male	4 669
Female	2 526

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	2 231	5 345
Sheep	2 933	7 736
Goats	3 110	8 816
Pigs/swine	2 950	19 520
Equines	n.a.	n.a.
Horses	58	353
Mules	3	3
Asses (donkeys)	19	29
Poultry (1 000 head)	n.a.	n.a.
Chickens	995	131
Ducks	64	1.0
Other animals	n.a.	
Rabbits and hares	463	2 910
Insects		
Bees (hives)	15	218

IRRIGATION		
	Holdings	Area irrigated (ha)
Holdings with irrigated land	1 463	3 321

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) in Suriname was undertaken in 1953. The second and the third ones were taken in 1959 and 1969. The fourth AC was held in 1981. The fifth AC to which the metadata review and data presented here refer, was carried out in 2008.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The operations and activities of the General Bureau of Statistics (GBS) are governed by Statistics Act S.B. 2002, no 97. The GBS is responsible for the compilation and dissemination of a wide range of data.

The implementation of the census was based on the Fifth Agricultural Census Act of 10 July 2008.

### **Institutional framework and international collaboration**

The GBS is a semi-autonomous organization responsible for the national statistical system, including the conduct of censuses of population and housing. The statistical system is decentralized and the Ministry of Agriculture, Animal Husbandry and Fisheries (MAAHF) is responsible for food and agricultural statistics in Suriname, including the ACs. The Division of Agricultural Statistics (DAS), as part of the Planning and Development Directorate of the MAAHF, is in charge of the organization and execution of the census. The GBS was represented as a member in the AC Steering Committee.

The AC 2008 was funded by the Government of the Netherlands, within the framework of the implementation of the Agricultural Sector Plan (ASP) signed in June 2001.

FAO provided technical assistance for the AC.

### **Census staff**

In total, 357 people were involved with the implementation of the AC, which included the existing staff and structures of the MAAHF, and 52 persons seconded by other ministries and institutions.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 November 2008, for livestock, buildings, machinery and other stock items.

**Reference periods:** calendar year 2008 (from 1 January to 31 December 2008), for farm labour, land use, land tenure, irrigation, fertilizers, pesticides, aquaculture, machinery and equipment, etc.

## 4. ENUMERATION PERIOD

Three enumeration periods were defined, according to the areas considered: (i) the Coastal Area (1–30 November 2008); (ii) Greater Paramaribo (1–28 February 2009); and (iii) the Interior (from 1 February to 9 March 2009).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural production activities (crop and livestock production), as well as aquaculture activities.

The **statistical unit** was the agricultural holding, defined as a technical and economic production unit consisting of one or more land parcels, including non-productive land, independent of titles to the land, which is located in one or several places and wholly or partly used or intended for agriculture (crops, animal husbandry) and aquaculture under the responsibility of one person (physical or legal) or responsibility jointly with others. The types of holdings distinguished in the census were: (i) holdings in the household sector (family business, including partnership between two or more households); and (ii) holdings in the non-household sector (company, government, institution/organization, other).

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Only holdings above any of the following thresholds were enumerated: (i) 0.02 ha of land under temporary or “semi-perennial” crops;<sup>1</sup> (ii) 20 m<sup>2</sup> of leek, celery or leaf onions; (iii) 20 harvested fruit trees; (iv) ten fruit trees of a single type harvested; (v) two head of cattle; (vi) five goats; (vii) five sheep; (viii) five pigs; (ix) one sow; (x) 25 chickens; (xi) 25 ducks; (xii) five hives; (xiii) one fishpond larger than 50 m<sup>2</sup>.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2008.

<sup>1</sup> According to the national classification used for the AC 2008 data collection, “semi-perennial” crops included: bananas, papaya, pineapple, passionfruit and sugarcane.

**Frame**

The Population and Housing Census (PHC) 2004 was the frame for the sampling surveys (Interior and Greater Paramaribo), and the frame used to check for coverage in the Coastal Area, where a complete enumeration exercise was performed. The enumerators and supervisors visited more than 100 000 households, of which approximately 10 234 qualified as agricultural holdings, according to the threshold criteria (see section 7).

**Complete and/or sample enumeration methods**

The AC 2008 was carried out on a complete enumeration basis in the Coastal Area, where the vast majority of agricultural holdings were located. The census in Greater Paramaribo (district Paramaribo) and in the Interior (rural inland of Suriname) was carried out on a sample basis. Different designs were used for these two areas.

**Sample design (if sampling was used)**

For the rural area of the capital Paramaribo, a random sample of 10 percent of the Enumeration Blocks from the PHC was drawn, because of the low intensity of agricultural activities. For the Interior, a stratified sampling design was adopted, because of the considerations of the enormous geographical spread of small size holdings and difficult accessibility of the areas in the mentioned districts.

**Data collection method(s)**

Face-to-face interviews using the PAPI method were used in the AC 2008.

**Questionnaire(s)**

Two main forms were used for the AC 2008 data collection: (i) the screening form (AC-1) and (ii) the AC questionnaire (AC-2). The AC 2008 covered all 16 core items recommended to be collected in the 2010 WCA round.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

The data capture and processing was carried out using CSPRO (version 3.2). Microsoft SQL Server 2005 was used as a database system to store the data files with processed information, and to enable further statistical processing. For data dissemination, SPSS 11.5 was used to generate the tables.

**11. CENSUS DATA QUALITY**

A PES was conducted. It consisted of a re-enumeration of selected Enumeration Blocks (10 percent of census questionnaires) in the Coastal Area, Paramaribo and the Interior.

**12. DATA DISSEMINATION**

The final results of the AC 2008 were published in April 2014 and are available online.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the Programme for the Census of Agriculture 2020 (WCA 2020), 22-26 May 2017, Port of Spain, Trinidad and Tobago. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 30 August 2019]. (<http://www.fao.org/world-census-agriculture/events/wca2020caribbean/en/>)

**Ministerie van Landbouw, Veeteelt en Visserij.** 2014. *Eindrapport van de Vijfde Landbouwtelling 2008-2009*. Paramaribo, Suriname. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Reports\\_5/SUR\\_DUTCH\\_REP\\_2008-2009.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Reports_5/SUR_DUTCH_REP_2008-2009.pdf)).

**14. CONTACT**

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# SURINAME – AGRICULTURAL CENSUS 2008 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>10 234</b>	<b>63 989</b>
Civil persons	10 188	38 958
Juridical persons	46	25 031

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>10 234</b>	<b>63 989</b>
Legal ownership	n.a.	14 637
Rented from others	n.a.	34 828
Other form of tenure	n.a.	14 525

LAND FRAGMENTATION		
	Holdings	Number of parcels
<b>Total holdings with land</b>	<b>10 230</b>	<b>15 037</b>
1 parcel	6 756	n.a.
2 parcels	2 740	n.a.
3 parcels	497	n.a.
4 parcels	123	n.a.
5 parcels	51	n.a.
6 parcels and over	63	n.a.

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>10 234</b>	<b>63 989</b>
Holdings without land	4	
Holdings with land	10 230	63 989
Less than 0.1 ha	923	n.a.
0.1–0.19 ha	1 177	n.a.
0.20–0.49 ha	1 714	n.a.
0.5–0.99 ha	1 206	n.a.
1.0–1.99 ha	2 125	n.a.
2.0–2.99 ha	1 008	n.a.
3.0–3.99 ha	531	n.a.
4.0–4.99 ha	381	n.a.
5.0–9.99 ha	598	n.a.
10.0–19.99 ha	293	n.a.
20.0–49.99 ha	150	n.a.
50.0–99.99 ha	60	n.a.
100.0–199.99 ha	23	n.a.
200.0–499.99 ha	25	n.a.
500 ha and over	16	n.a.

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>10 234</b>	<b>63 989</b>
Agricultural land	n.a.	43 113
Arable land	n.a.	16 547
Land temporarily fallow	n.a.	6 624
Land under permanent crops	n.a.	5 930
Permanent meadows and pastures	n.a.	14 013
Forest and other wooded land	n.a.	14 757
Other land	n.a.	6 119

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>10 188</b>	<b>38 958</b>
Male	6 652	35 575
Female	3 536	3 383

HOLDERS IN THE HOUSEHOLD SECTOR, BY AGE	
	Number
<b>Total</b>	<b>10 188</b>
Under 25 years	323
25–34 years	1 287
35–44 years	2 462
45–54 years	2 841
55–64 years	1 832
65 years and over	1 443

HOLDINGS, BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>10 188</b>
1 person	949
2–3 persons	3 374
4–5 persons	3 451
6–9 persons	2 186
10 persons and over	228

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>33 781</b>
Male	17 050
Female	16 731
Engaged in agricultural activities on the holding	18 533
Male	10 274
Female	8 259

EMPLOYEES WORKING ON THE HOLDING, BY SEX	
	Number
<b>Total</b>	<b>8 656</b>
Male	6 592
Female	2 064
Permanent employees	4 274
Male	3 030
Female	1 244
Semi-permanent employees	442
Male	286
Female	156
Temporary employees	3 893
Male	3 233
Female	660
Not mentioned	47
Male	43
Female	4

HOLDINGS IN THE HOUSEHOLD SECTOR BY MAIN PURPOSE OF PRODUCTION	
	Holdings reporting
<b>Total producing mainly for</b>	<b>9 868</b>
Home consumption	4 035
Sale	5 833

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>7 246</b>	
Cattle	2 020	28 349
Sheep	570	4 970
Goats	462	3 434
Pigs/swine	155	8 975
Poultry (1 000 head)	4 039	491
Chickens	n.a.	433
Ducks	n.a.	56
Geese	n.a.	1

## 1. HISTORICAL OUTLINE

The first agriculture census in the United States of America was taken in 1840 as part of the sixth decennial census of population. After the 1920 census, the census interval was changed to every five years, resulting in a separate mid-decade census of agriculture being conducted in 1925, 1935, and 1945. The agriculture census continued to be taken as part of the decennial census through 1950. From 1954 to 1974, the census was taken for the years ending in 4 and 9. In 1976, Congress changed the five-year data collection cycle to years ending in 2 and 7, to coincide with other economic censuses, cycle that continues to this day. The 2012 Census of Agriculture (CA) is the twenty-eighth federal census of agriculture and the fourth to be conducted by the United States Department of Agriculture's (USDA), National Agricultural Statistics Service (NASS).

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA is required by law under the Census of Agriculture Act of 2002, Public Law 105-113 (Title 7, United States Code, Section 2204g). The law directs the Secretary of Agriculture to conduct a census of agriculture every five years, covering the years ending in 2 and 7. The CA includes each State, Puerto Rico, Guam, the U.S. Virgin Islands, the Commonwealth of Northern Mariana Islands, and American Samoa.

### **Institutional framework and international collaboration**

The NASS of the USDA is the government agency with responsibility for the CA. Farmers are required by law to respond to the CA. Throughout development of the census, NASS sought advice and input from the data user community. Integral partners included the Advisory Committee on Agriculture Statistics, state departments of agriculture and other state government officials, federal agency officials, land grant universities, agricultural trade associations, media, and various community-based organizations.

### **Census staff**

The NASS employs 230 full-time personnel for the purpose of carrying out the CA Program. The NASS entered into an agreement with the National Association of State Departments of Agriculture (NASDA) to collect data for the CA 2012.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 December 2012, for inventory items such as livestock.

**Reference period:** the calendar year 2012 (from 1 January to 31 December 2012), for items on crops and land areas, farm labour, financial information and agricultural production methods.

## 4. ENUMERATION PERIOD:

The enumeration was conducted from December 2012 to July 2013.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** for the CA 2012 was the farm, an operating unit defined as any place from which USD 1 000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year.

## 6. GEOGRAPHIC COVERAGE

Available to the county or county-equivalent level.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Agricultural holdings that do not normally produce and sell USD 1 000 or more of agricultural products per year or do not have the potential were not tabulated as farms.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CA 2012.

### **Frame**

NASS maintains a list of farmers and ranchers from which the CML is compiled.

### **Complete and/or sample enumeration methods**

The CA 2012 was an enumeration of all known agricultural holdings meeting the USDA definition of a farm.

### **Sample design (if sampling was used)**

No sampling used.

<sup>1</sup> The census results related to the United States of America bear only upon the continental territory of the country (without considering U.S. Territories and Outlying Areas).

**Data collection method(s)**

Data collection was done primarily through the mail-out/mail-back method; however, this was supplemented with Electronic Data Reporting (EDR) via the Internet, as well as personal enumeration for special classes of records in the census operations. Personal enumeration involved the use of both CATI and CAPI.<sup>2</sup> Beginning in March 2013, CATI was used to follow up on nonresponse for NML nonrespondents.

**Questionnaire(s)**

Seven regionalized versions of the main report form (questionnaire) were used for the CA 2012. The report form versions were designed to facilitate reporting on the crops most commonly grown within each report form region. Additionally, an American Indian report form was developed to facilitate reporting for operations on reservations in Arizona, New Mexico and Utah. All of the forms allowed respondents to write in specific commodities that were not listed on their form.

The CA 2012 covered all 16 core items recommended to be collected in the WCA 2010.

**9. USE OF TECHNOLOGY**

CAWI, CAPI and CATI methods were used for census data collection. Optical scanning was used for data capture of paper questionnaires. An online database enabled users to retrieve customized tables with census data at the national, state and county level.

**10. DATA PROCESSING AND ARCHIVING**

The completed forms were scanned and Optical Mark Recognition (OMR) was used to retrieve categorical responses and to identify the other answer zones in which some type of mark was present. The edit system determined the best value to impute for reported responses that were deemed unreasonable and for required responses that were absent. The complex edit ensured the full internal consistency of the record. After tabulation and review of the aggregates, a comprehensive disclosure review was conducted. Cell suppression was used to protect the cells that were determined to be sensitive to a disclosure of information.

**11. CENSUS DATA QUALITY**

NASS conducted an extensive program to follow-up all non-response. NASS also used capture-recapture methodology to adjust for under-coverage, non-response, and misclassification. To implement capture-recapture methods, two independent surveys were required --the 2012 Census of Agriculture (based on the Census Mail List) and the 2012 June Agricultural Survey (based on the area frame). Historically, NASS has been careful to maintain the independence of these two surveys.

**12. DATA DISSEMINATION**

The complete data series from the 2012 Census of Agriculture is available from the NASS website free of charge in multiple formats, including Quick Stats 2.0 – an online database to retrieve customized tables with Census data at the national, state and county levels. The 2012 Census of Agriculture provides information on a range of topics, including agricultural practices, conservation, organic production, as well as traditional and specialty crops.

**13. DATA SOURCES**

**United States Department of Agriculture, National Agriculture Statistics Service (USDA, NASS).** 2019. Census of Agriculture. In: *USDA, NASS* [online]. United States. [Cited 30 July 2019]. <https://www.nass.usda.gov/Publications/AgCensus/2012/>

**14. CONTACT**

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<sup>2</sup> Enumerators at the NASS National Operations Center in St. Louis, MO conducted CATI data collection. In addition, enumerators under contract with NASS through the National Association of State Departments of Agriculture (NASDA) conducted telephone and personal interviews with respondents.

# THE UNITED STATES OF AMERICA – CENSUS OF AGRICULTURE 2012 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>2 109 303</b>	<b>370 096 212</b>
Family or individual	1 828 946	227 608 837
Partnership	137 987	63 162 034
Corporation	106 716	53 124 255
Other	35 654	26 201 086

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>2 109 303</b>	<b>370 096 212</b>
Land owned	1 973 527	228 071 298
Land rented or leased from others	666 945	142 024 914

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>2 109 303</b>	<b>370 096 212</b>
0.4–4 ha	223 634	403 403
4–20 ha	589 549	6 113 637
20–28 ha	153 698	3 609 669
28–40 ha	184 942	6 152 886
40–56 ha	166 381	7 806 764
56–72 ha	129 026	8 218 182
72–88 ha	84 317	6 742 802
88–105 ha	63 636	6 124 741
105–202 ha	198 085	28 580 256
202–404 ha	142 555	40 070 836
404–809 ha	91 273	50 619 939
809 ha and over	82 207	205 653 097

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>2 109 303</b>	<b>370 096 212</b>
Cropland	1 551 654	157 702 115
Harvested cropland	1 288 875	127 461 651
Other cropland	n.a.	30 240 464
Land under temporary meadows	141 537	5 181 128
Cropland used for cover crops	381 453	14 723 286
In cultivated summer fallow	61 442	5 724 508
Land with failed crops	97 248	4 611 542
Pastureland and rangeland other than cropland and woodland	1 176 156	168 069 703
Woodland, forest and underbrush	840 399	31 166 018
Other land	1 338 485	13 158 377

NUMBER OF HOLDER'S HOUSEHOLDS, BY SIZE	
	Number
<b>Total</b>	<b>2 109 303</b>
1 person	300 435
2 persons	1 070 365
3 persons	294 277
4 persons	250 753
5 persons and over	193 473

HIRED MANAGERS AND EMPLOYEES WORKING ON THE HOLDING	
	Number
Total managers	67 939
Total hired labour	2 736 417

IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>296 303</b>	<b>22 590 455</b>

HOLDERS, BY SEX AND AGE	
	Number
<b>Total</b>	<b>2 109 303</b>
Male	1 821 039
Female	288 264
Under 25 years	10 714
25–34 years	109 119
35–44 years	214 106
45–54 years	186 605
50–54 years	279 431
55–59 years	306 011
60–64 years	302 041
65–69 years	251 976
70 years and over	449 300

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	913 246	89 994 614
Sheep	88 338	5 364 844
Goats	128 456	2 621 514
Pigs/swine	63 246	66 026 785
Horses	504 795	3 621 348
Mules, burros and asses (donkeys)	98 379	292 590
Llamas	15 296	76 086
Alpacas	9 353	140 601
Poultry (1 000 head)	n.a.	n.a.
Layers	198 272	350 716
Broilers	42 226	1 506 277
Pullets for laying flock replacement	26 749	110 297
Ducks	21 115	5 019
Geese	10 286	106
Turkeys	19 956	100 792
Other	2 213	372
Other animals	n.a.	
Deer	4 042	231 431
Mink	267	953 321
Rabbits	13 420	400 049
Elk	1 199	38 061
Other livestock	1 956	
Insects		
Bees (hives)	38 261	3 282 570

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Total tractors of all kinds	1 670 342	4 178 300
Other (machine-powered)	n.a.	
Trucks, including pickups	1 587 889	3 297 894
Grain and bean combines, self-propelled	295 742	346 632
Cotton pickers and strippers, self-propelled	15 089	20 227
Forage harvesters, self-propelled	64 162	72 389
Hay balers	577 443	731 771

<sup>1</sup> The census results related to the United States of America bear only upon the continental territory of the country.

The “United States Virgin Islands” is one of the collectively referred “U.S. Outlying Areas”. For statistical purposes, it is recorded as a separate entity in the World Census of Agriculture Database (in the Americas Region). Consequently, results related to the United States of America bear only upon the continental territory of the country.

## 1. HISTORICAL OUTLINE

The first Census of Agriculture (CA) was conducted in the United States Virgin Islands (U.S. Virgin Islands) in 1920 and the second in 1930, in conjunction with the first decennial World Agricultural Census. Other censuses were conducted at a ten-year interval through 1960 when, starting with the census taken in 1964, the U.S. Virgin Islands were included in the quinquennial (five-year) Agricultural Census Plan. Successively, the dates were adjusted in order to coincide with economic censuses and, consequently, the subsequent agricultural censuses were conducted in 1978 and 1982. After 1982, agricultural censuses were reverted to a five-year cycle. The CA 2007, to which metadata and data here refer, is the fourteenth agricultural census to be undertaken in the U.S. Virgin Islands.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA is required by law under the Census of Agriculture Act of 2002, Public Law 105-113 (Title 7, United States Code, Section 2204g). The law directs the Secretary of Agriculture to conduct a census of agriculture every five years, covering the prior year.

The CA 2007 was conducted in accordance with a Memorandum of Agreement approved by the Administrator of the National Agricultural Statistics Service (NASS) of the U.S. Department of Agriculture (USDA) and by the Commissioner of Agriculture of the U.S. Virgin Islands.

### **Institutional framework and international collaboration**

The United States Department of Agriculture, National Agriculture Statistical Service (USDA/NASS) is responsible for conducting the CA 2007. The CA 2007 was conducted with the cooperation and assistance of the U.S. Virgin Islands Department of Agriculture (DA). The NASS provided technical assistance at various levels, while the DA of the U.S. Virgin Islands was responsible for recruiting and training local officers and field staff and supervising local administrative matters. The census was funded by the United States Federal budget.

### **Census staff**

The project manager, crew leaders, and enumerators employed for the census in the U.S. Virgin Islands received special training in accordance with instructions prepared by NASS and the DA of the U.S. Virgin Islands. The training included practice on interviewing and filling out the report form, as well as a detailed discussion of the enumerator’s instructions.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 December 2007, for inventory items such as livestock, machinery, equipment, buildings, facilities on farms and operator’s characteristics.

**Reference period:** the calendar year, from 1 January to 31 December 2007, for crop production, crop and livestock sales, expense data, etc.

## 4. ENUMERATION PERIOD:

The data collection was carried out from January to July 2008.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was a farm, defined as “any place from which USD 500 or more of agricultural products were produced and sold, or normally would have been sold, during the calendar year 2007”. According to the census definition, a farm is essentially an operating unit, not an ownership tract. All land operated or managed by one person or partnership represents one farm. In the case of tenants, the land assigned to each tenant is considered a separate farm, even though the landlord may consider the entire landholding to be one unit rather than several separate units.

## 6. GEOGRAPHIC COVERAGE

The CA 2007 covered the entire territory of the U.S. Virgin Islands.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The CA 2007 conducted in the U.S. Virgin Islands covered “all places” from which USD 500 or more of agricultural products were produced and sold, or normally would have been sold, during the 12-month period between 1 January and 31 December 2007.

## 8. METHODOLOGY

### **Methodological modality for conducting the census.**

The classical approach was used in the CA 2007.

**Frame**

The census frame consisted of a list of farm operators compiled by the U.S. Virgin Islands DA. This list was compiled with the help of the USDA Farm Services Agency, located in St. Croix.

**Complete and/or sample enumeration methods**

The census was a complete enumeration of all farm operators registered in the list compiled by the United States of America in the CA 2007.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method**

Data collection was done by means traditional face-to-face interviews. The information was collected in paper forms (PAPI method).

**Questionnaire(s)**

The questionnaire (report form) for the CA 2007 was prepared by NASS, in cooperation with the DA of the U.S. Virgin Islands. Only one questionnaire was used for data collection. The questionnaire of the 2007 CA covered 12 of the 16 core items<sup>1</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Questionnaires collected using the PAPI method were scanned. OMR was used to capture categorical responses and to identify the other answer zones in which some type of mark was present. The census results were disseminated online, through the USDA website.

**10. DATA PROCESSING AND ARCHIVING**

The NASS undertook the data processing activities. Each report form was reviewed and coded prior to data entry and subjected to a thorough computer edit. Report forms not meeting the census farm definition were voided. Missing information was derived using reported data for similar type and size farms in nearby areas. The cleaned data were then tabulated by the computer and reviewed by analysts. Prior to publication, tabulated totals were reviewed by analysts to identify inconsistencies and potential coverage problems and trend discrepancies.<sup>2</sup>

**11. CENSUS DATA QUALITY**

Ten percent of the captured data were keyed a second time for quality control. If differences existed between the first keyed value and the second, an adjudicator handled resolution. Comparisons were made with previous census data, as well as other available data.

**12. DATA DISSEMINATION**

The final results of the CA 2007 were released in February 2009. The census report included methodological notes and questionnaire. The census report and thematic (“special”) studies are available on the NASS website.

**13. DATA SOURCES**

**United States Department of Agriculture, National Agricultural Statistics Service.** 2009. *Census of Agriculture 2007 – Virgin Islands of the United States Territory and Island Data*, Volume 1, Geographic Area Series, Part 54. Washington, D.C., United States of America. (also available at [https://www.nass.usda.gov/Publications/AgCensus/2007/Full\\_Report/Outlying\\_Areas/usvi.pdf](https://www.nass.usda.gov/Publications/AgCensus/2007/Full_Report/Outlying_Areas/usvi.pdf)).

**14. CONTACT**

United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS)

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Website: <https://www.nass.usda.gov/>

<sup>1</sup> The exceptions were the following four items: (i) “Sex of the agricultural holder”; (ii) “Household size”; (iii) “Presence of forests and other woodland on the holding”; and (iv) “Other economic production activities of the holding’s enterprise”.

<sup>2</sup> Comparisons were made with previous census data, as well as other available data. The computer system provided the capability to review up-to-date tallies of all selected data items for various sets of criteria which included, but were not limited to, geographic levels, farm types and sales levels. Data were examined for each set of criteria and a write-up (criticism) was produced for data that were inconsistent. When necessary, data inconsistencies were resolved by carrying out corrections to data records.

## UNITED STATES VIRGIN ISLANDS – CENSUS OF AGRICULTURE 2007 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>219</b>	<b>2 376</b>
Civil persons	210	n.a.
Juridical persons	5	n.a.
Other	4	n.a.

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>219</b>	<b>2 376</b>
Legal ownership	130	n.a.
Rented from others	110	n.a.
Rented to others	2	n.a.

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>219</b>	<b>2 376</b>
Less than 1.2 ha	86	51
1.2–3.63 ha	63	120
3.63–7.67 ha	35	188
7.67–19.79 ha	15	163
19.79–40.10 ha	12	342
40.095 and over	8	1 512

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>219</b>	<b>2 376</b>
Agricultural land	n.a.	2 303
Cropland	147	199
Harvested cropland	145	123
Other cropland	40	76
Permanent meadows and pastures	103	2 104
Forest and other wooded land	19	38
Other land	82	34

HOLDERS, BY AGE	
	Number
<b>Total</b>	<b>219</b>
Under 35 years	9
35–44 years	30
45–54 years	65
55–64 years	55
65 years and over	60

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>511</b>
Unpaid labour	401
Hired farm labour	110

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	n.a.	
Cattle	25	776
Sheep	51	2 981
Goats	73	2 331
Pigs/swine	28	1 125
Horses	18	69
Poultry (1 000 head)	n.a.	n.a.
Chickens	13	0.7
Other poultry	4	0.1

SOURCE OF IRRIGATION WATER		
	Holdings	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>99</b>	<b>98</b>
Well or cistern	51	n.a.
Lake or pond	4	n.a.
Public utility	13	n.a.
Other	31	n.a.

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Tractors	82	119
Motortrucks	160	195
Automobiles	56	67

PERMANENT CROPS		
	Holdings	Number of trees/plants
<b>Total</b>	<b>127</b>	<b>n.a.</b>
Orchards	n.a.	n.a.
Tropical and subtropical fruits	n.a.	n.a.
Mangoes	91	1 920
Papayas	58	1 401
Avocados	75	636
Bananas	87	8 090
Pineapples	29	2 046
Breadfruit	54	315
Plantains	45	2 455
Citrus fruits	n.a.	n.a.
Oranges	41	960
Grapefruit	41	259
Limes and lemons	77	594
Oilseed crops	n.a.	n.a.
Coconuts	81	3 893
Other fruit, nuts and tree crops	62	1 696

## 1. HISTORICAL OUTLINE

The first agricultural census (AC) in Uruguay was conducted in 1852. From 1852 to 2000, four livestock censuses and 14 general ACs were carried out.<sup>1</sup> The metadata review and data presented here refer to the AC 2011.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal framework for the AC includes the following:

- Law No. 4294 of 7/1/1913, which establishes that agricultural censuses are mandatory and will be conducted in years ending in “zero”;
- Decree 228/978 of 26 April 1978, which establishes that the census should be conducted in years ending in zero and will cover all agricultural holdings having an area of 1 ha or more;
- Law No. 16616 of October 1994 organizes the National Statistical System (SEN), as a decentralized system under the methodological and organizational coordination of the National Statistical Institute (Article 3); and
- Decree No. 387/009 of 18 August 2009, which stipulated the undertaking of the AC 2011.

### **Institutional framework and international collaboration**

The Ministry of Livestock, Agriculture and Fisheries (MGAP)<sup>2</sup> was the institution responsible for conducting the AC 2011. Decree No. 387/009 established the National Census Committee, encompassing representatives from the DIEA of the MGAP,<sup>3</sup> the Ministry of Interior, the Congress of Departmental Mayors and representatives of various farmers associations.

### **Census staff**

The census involved 340 enumerators, 92 field supervisors and 208 supporting staff. Due to restrictions on hiring civilian personnel for the task of enumeration, the enumeration work was performed by the personnel of the armed forces.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 30 June 2011, for total area and by type of tenure, cropped area, number of livestock, machinery and equipment.

**Reference period:** the census year (from 1 July 2010 to 30 June 2011), for sown area, land use, employment on holding, etc.

## 4. ENUMERATION PERIOD

The AC 2011 data collection operation took place from 15 August 2011 to 15 January 2012. At the end of the data collection, a “special task team” was assigned the tasks of: (i) enumerating farms that could not be enumerated during the normal phase of the fieldwork because of the temporary absence of a qualified respondent; and (ii) enumerating farmers that were not found in their farms because they live in urban centres.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production) and forestry.

The **statistical unit** was the agricultural holding, defined as “an economic production unit whose total area is one ha or more, and which had agricultural activity at least part of the census year, regardless of whether the production is for commercial purposes, having single management, and comprising the land<sup>4</sup> devoted to agricultural purposes and/or forestry, regardless of tenure and legal form”.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Agricultural holdings with less than 1 ha were not included in the census tabulations.<sup>5</sup>

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2011.

<sup>1</sup> The 1986 AC was a sample-based census.

<sup>2</sup> In Spanish: *Ministerio de Ganadería, Agricultura y Pesca (MGAP)*.

<sup>3</sup> In Spanish: *Oficina de Estadísticas Agropecuarias (DIEA)*.

<sup>4</sup> An agricultural holding's land may consist of one or more parcels, located in one or more separate areas. All parcels are considered part of the same operation, provided that they are under the same management, share the means of production (labour, buildings, machinery, etc.) and are within the same department or in neighbouring departments.

<sup>5</sup> Holdings with less than 1 ha and holdings with 1 ha or more of total area with no agricultural activities during the reference period were also enumerated, and their areas recorded. However, those data were not included in the census tabulations.



**Frame**

The list of farmers and lands from the AC 2000, along with administrative registers, served as a census frame. The Population Census 2011 and the AC 2011 used the same cartographic materials.

**Complete and/or sample enumeration methods**

The AC 2011 was conducted using complete enumeration.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

Data collection was carried out by means of personal interview, using the PAPI method.<sup>6</sup> Each EA was covered by a team of enumerators and a supervisor; these would advance to the next EA under its competence until enumeration was complete for all EAs assigned to the team.

**Questionnaire(s)**

One single questionnaire was used for data collection. The AC 2011 covered all 16 core items recommended by FAO to be collected in the 2010 WCA round.

**9. USE OF TECHNOLOGY**

Optical scanning was applied for data capture. Census results were disseminated and are accessible online.<sup>7</sup>

**10. DATA PROCESSING AND ARCHIVING**

After the optical scanning of the questionnaires, an internal consistency procedure of census data was carried out through the programmed application.

**11. CENSUS DATA QUALITY**

Census data collection work was monitored through the generation of coverage maps and checking the coverage of farms against the available administrative records. The quality of census data regarding area (total land, vineyards and forests) and livestock (cattle, sheep, equine, swine and poultry) was evaluated by comparing the data with the available administrative data sources from the MGAP and other authorities, who were the holders of such registers. In some cases, telephone re-interviews were used to check and adjust the data.

**12. DATA DISSEMINATION**

Provisional key census results were released at the end of 2011. The preliminary census results were published in March 2013. The final results were disseminated in 2014 through printed reports, CD-ROMs and institutions' websites. The census results were disseminated at the national and subnational level (at the departmental and EA level). In 2015, with the support provided by the Economic Commission for Latin America and the Caribbean (ECLAC), census information was made available using the REDATAM. In addition to census macrodata, safe access to microdata at the departmental level is provided to users.<sup>8</sup>

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 12–16 December 2016, Montevideo, Uruguay. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 10 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020montevideo/en/>

**Ministerio de Ganadería, Agricultura y Pesca, Estadísticas Agropecuarias.** 2014. *Censo General Agropecuario 2011, Resultados definitivos*. Montevideo, Uruguay. (also available at <http://www.mgap.gub.uy/>).

**14. CONTACT**

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Website: <http://www.mgap.gub.uy/>

<sup>6</sup> The country was divided into 637 enumeration districts, belonging to 103 supervision areas.

<sup>7</sup> In addition, new technology was used to monitor census data collection (see section 11).

<sup>8</sup> At the time of publication, the webpage with the census results was under reconstruction. Some census results were available at <http://www.mgap.gub.uy/unidad-organizativa/oficina-de-programacion-y-politicas-agropecuarias>; complete information was available at <http://www2.mgap.gub.uy/portal/page.aspx?2.diea,diea-censo-2011-re-cuentos-preliminares,O.es,0>.

# URUGUAY – AGRICULTURAL CENSUS 2011– MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>44 781</b>	<b>16 357 298</b>
Civil persons	37 272	8 635 939
Juridical persons	7 509	7 721 359

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>44 781</b>	<b>16 357 298</b>
Holdings operated under one tenure form	39 549	12 743 954
Owned	27 405	7 526 734
Leased	5 986	2 238 502
Sharecropping	101	23 565
Other form of tenure	6 057	2 955 153
Holdings operated under two or more tenure form	5 232	3 613 344

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>44 781</b>	<b>16 357 298</b>
1–4 ha	3 020	8 516
5–9 ha	4 225	28 517
10–19 ha	4 844	66 802
20–49 ha	6 893	222 177
50–99 ha	5 720	407 886
100–199 ha	5 569	796 030
200–499 ha	6 496	2 089 581
500–999 ha	3 847	2 705 399
1 000–2 499 ha	2 976	4 506 958
2 500–4 999 ha	851	2 888 389
5 000–9 999 ha	284	1 897 028
10 000 ha and over	56	740 015

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>44 781</b>	<b>16 357 298</b>
Agricultural land	n.a.	14 527 901
Arable land	n.a.	2 245 578
Land under permanent crops	n.a.	41 419
Permanent meadows and pastures	n.a.	12 240 904
Forest and other wooded land	n.a.	1 634 610
Unproductive land and water bodies	n.a.	194 787

HOLDERS, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>44 781</b>	<b>16 357 298</b>
Male	28 433	6 810 170
Female	8 839	1 825 769
No information	7 509	7 712 359

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>144 383</b>
Male	96 583
Female	47 800
Engaged in agricultural activities on the holding	120 398
Male	86 417
Female	33 981

EMPLOYEES WORKING ON THE HOLDING, BY SEX	
	Number
<b>Total</b>	<b>125 063</b>
Male	91 536
Female	33 527
Permanent employees	115 371
Male	83 827
Female	31 544
Temporary employees	9 692
Male	7 709
Female	1 983

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	36 696	10 740 228
Sheep	19 765	7 379 565
Goats	237	6 183
Pigs/swine	8 080	194 639
Horses	29 495	356 935
Poultry (1 000 head)	15 705	11 747
Other animals	n.a.	
Rabbits and hares	126	6 454
Insects		
Bees (hives)	5 759	311 869

IRRIGATION BY LAND USE TYPES	
	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>250 980</b>
Land under temporary crops	9 337
Land under permanent crops	20 638
Land under temporary meadows and pastures	208 373
Land under permanent meadows and pastures	12 632

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Total tractors of all kinds	20 988	33 741
Other (machine-powered)	n.a.	
Plow	5 330	6 018
Bulldozer	4 435	5 054
Seeders	3 515	4 421
Self-propelled sprayer	1 087	1 263
Atomizers and nebulizers	1 699	2 248
Balers	2 054	2 267
Self-powered grain harvesters	1 588	2 280

## 1. HISTORICAL OUTLINE

The first Census of Agriculture (CA) of the Bolivarian Republic of Venezuela was carried out in 1937. In 1949, 1961 and 1971, the CAs and the censuses of population and housing (CPHs) were carried out jointly. A series of CAs separated from the CPH were conducted in 1985, 1997 and 2008.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA legislation includes the following:

- the Organic Law of the Central Administration, which establishes the competences of the Ministry of the Popular Power for Agriculture and Lands (MPPAT) and of the National Statistical Institute (INE)<sup>1</sup> regarding the CA;
- the Law of the Public Function of Statistics of November 2001, on the organization of the Statistical System; and
- Presidential Decree No. 4837 of 26 September 2006, regarding the preparation and conduct of the CA 2008, which establishes all operational stages of the census and responsibilities of the institutions involved.

### **Institutional framework and international collaboration**

The INE is the coordinator of the statistical system. The INE can delegate functions for data collections to sectoral offices. In particular, the CA 2008 was under the responsibility of the MPPAT, as per Presidential Decree No. 4837.

Technical assistance from FAO was provided for the CA 2008.

### **Census staff**

The total number of census staff was of about 7 101 employees, of which 4 962 were enumerators, 1 306 supervisors, 131 municipal supervisors, 256 parish supervisors, 131 municipal auxiliaries, 131 data-entry personnel and 184 state unit staff.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for stock items such as livestock numbers.

**Reference period:** from 1 May 2007 to 30 April 2008 for other items such as on crops and labour force.

## 4. ENUMERATION PERIOD

Census enumeration was carried out from 14 April to 31 July 2008.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). A community survey of Communal Micro Areas (MACs) was conducted along with the census fieldwork.

Three categories of **statistical units** were distinguished in the CA 2008: (i) agricultural production units (UPAs); (ii) household producers; and (iii) MACs. Accordingly, the UPA was defined as an economic unit of agricultural production with unique management and address, comprising all livestock and all land, fully or partially dedicated to agricultural purpose, regardless of title or legal form. A household producer consists of a person or a group of two or more persons, with or without family ties to one another, who live in the same house, sharing the same services, and maintaining economic dependence through common expenses, especially regarding food. MACs are defined as the basic area units for statistical purposes, determined by the community on the basis of the sense of belonging of its people and the recognition of others. Holdings were classified according to their legal status.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

For purposes of the CA 2008, the following minimum size limits were adopted to define the UPA:

- a minimum cultivated area of 0.5 ha;
- any surface cultivated with vegetables or flowers for commercial purposes;
- 5 ha of grassland;
- 20 fruit trees of the same species;
- five cattle;
- 15 pigs, 15 goats, or 15 sheep;
- 100 birds of the same species;
- five beehives;
- 25 m<sup>2</sup> of water mirror for aquaculture purposes;
- any production unit with organic crops, nurseries or crops with special and/or handicraft techniques; or
- other animals of agricultural production greater than or equal to 100 head.

<sup>1</sup> In Spanish: *Instituto Nacional de Estadística*.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC.

### **Frame**

The census frame was obtained from the registry of agricultural production units. All areas were canvassed for gathering basic information that allows to determine if the agricultural unit qualifies as an UPA, for the purposes of the census.

### **Complete and/or sample enumeration methods**

The CA 2008 was conducted on a complete enumeration basis.

Sample design (if sampling was used)

Not applicable.

### **Data collection method(s)**

Data were collected by face-to-face interviewing using the CAPI method with PDAs.

### **Questionnaire(s)**

There was a single comprehensive questionnaire for all holdings. The CA 2008 covered 14 of the 16 core items recommended by FAO for the WCA 2010.<sup>2</sup>

## 9. USE OF TECHNOLOGY

The CAPI method using PDAs was applied. The census data were disseminated online.

## 10. DATA PROCESSING AND ARCHIVING

The data were captured using DMCs<sup>3</sup>, from which the information was transmitted to the MPPAT server. The ArcPad 7.0 software was used to develop a cartography programme, deployed in the DMCs. Data transmission was made using the Internet via a modem and a webpage. The census data were analysed for consistency, and then edited and validated. An application was developed in REDATAM + SP with the aim of facilitating online access to the census data and obtaining quick and easy figures.

## 11. CENSUS DATA QUALITY

A PES was conducted to assess the census coverage.

## 12. DATA DISSEMINATION

The final results were released in April 2011 through different publications, and are available at the national and subnational level. Census data were disseminated online through REDATAM.

## 13. DATA SOURCE

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 12–16 December 2016, Montevideo, Uruguay. In: World Programme for the Census of Agriculture [online]. Rome, Italy. [Cited 10 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020montevideo/en/>

**Ministerio del Poder Popular para la Agricultura y Tierras (MMPAT).** 2008. *Coordinación Nacional del VII CAN 2008. Manual del Empadronador (EM)*. Caracas, Venezuela (República Bolivariana de).

Information provided by the MMPAT.

## 14. CONTACT

Ministerio del Poder Popular para la Agricultura y Tierras

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<sup>2</sup> Items not covered: (i) "Age of the agricultural holder"; (ii) "Other economic production activities of the holding's enterprise".

<sup>3</sup> *Dispositivos Móviles de Captura*.

## VENEZUELA (BOLIVARIAN REPUBLIC OF) – CENSUS OF AGRICULTURE 2008 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>502 676</b>	<b>27 073 879</b>

NUMBER OF HOLDINGS WITH LAND, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>424 256</b>	<b>27 031 987</b>
Civil persons	410 705	n.a.
Juridical persons	13 551	n.a.

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Total holdings with land</b>	<b>424 256</b>	<b>27 031 987</b>
1 parcel	384 506	22 899 434
2–3 parcels	36 553	3 380 572
4–5 parcels	2 495	454 916
6–9 parcels	586	214 085
10 parcels and over	116	82 980

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>502 676</b>	<b>27 073 879</b>
Holdings without land	78 420	
Holdings with land	424 256	27 073 879
Less than 0.5 ha	7 413	1 503
0.5–1 ha	19 320	10 718
1–2 ha	52 900	60 020
2–5 ha	99 740	286 448
5–10 ha	63 032	402 565
10–20 ha	53 414	683 365
20–50 ha	53 287	1 594 533
50–100 ha	29 259	1 949 056
100–200 ha	19 988	2 623 611
200–500 ha	15 994	4 666 458
500–1 000 ha	5 890	3 837 223
1 000–2 500 ha	2 917	4 215 279
2 500–5 000 ha	711	2 281 579
5 000 ha and over	391	4 461 522

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>502 676</b>	<b>27 073 879</b>
Agricultural land	n.a.	17 147 022
Arable land	215 110	2 327 889
Land under temporary crops	166 165	1 647 907
Land temporarily fallow (less than a year)	27 723	390 453
Land temporarily fallow (more than a year)	21 222	289 529
Land under permanent crops	178 836	1 030 906
Permanent meadows and pastures	185 139	13 788 227
Forest and other wooded land	122 809	8 443 658
Other land	228 904	1 483 199

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX	
	Number
<b>Total</b>	<b>410 705</b>
Male	329 721
Female	80 984

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>109 1047</b>
Male	606 173
Female	484 874

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>166 304</b>	
Cattle	127 303	12 678 340
Buffaloes	1 343	225 790
Sheep	16 533	600 988
Goats	15 321	1 057 056
Pigs	29 732	2 787 338
Horses	20 185	163 433
Poultry (1 000 head)	30 641	97 070
Chickens	29 915	96 565
Other	10 739	504
Other animals	n.a.	
Rabbits	636	74 347
Insects		
Bees (hives)	898	20 075

METHODS OF IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Total</b>	<b>66 351</b>	<b>683 096</b>
Surface	34 076	475 379
Sprinkler	27 332	169 733
Localized irrigation	4 943	37 984

PERMANENT CROPS		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Tropical and subtropical fruits	n.a.	n.a.
Avocados	8 355	93 342
Bananas	20 503	241 831
Papayas	3 176	99 670
Mangoes	1 999	62 666
Plantains	15 961	420 489
Pineapples	5 169	215 438
Citrus fruits	n.a.	n.a.
Mandarins	4 778	62 897
Oranges	10 782	197 807
Pome fruits and stone fruits	1 819	11 913
Peaches	1 819	11 913
Oilseed crops	2 495	153 032
Coconuts	1 900	42 575
Oil palms	595	110 457
Other	6 406	114 145

**ASIA**

## 1. HISTORICAL OUTLINE

The first comprehensive agricultural census (AC) in the Republic of Armenia was conducted in 2014. Until 2014, several specialized ACs were carried out, such as livestock censuses and permanent crop censuses.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The AC 2014 was conducted in accordance with the following legal acts:

- the Law of the Republic of Armenia (RA) on “State Statistics” (adopted on 4 April 2000);
- the Law of the RA on the “Agricultural Census” (adopted on 27 November 2008);
- the three-year state statistical work programme for 2013–2015 (adopted on 19 December 2012);
- decrees of the Government of the RA; and
- decisions of the State Council on Statistics of the RA and other legal acts.

According to the law on the “Agricultural Census”, the AC should be carried out in accordance with FAO recommendations for censuses on agriculture.

### **Institutional framework and international collaboration**

The agency responsible for the preparation and implementation of the agricultural census is the National Statistical Service of the Republic of Armenia (NSS RA). An operational unit in charge of the census (the AC Department) was created within the NSS RA in May 2013. To facilitate the implementation of the census, committees for the preparation and conduct of the ACs (at the national, Yerevan and the *marz* level) were established by means of Decree of the Government of the RA No. 402-N, dated 25 April 2013. Armenia received technical assistance and/or financial support for the preparation and implementation of the AC from Austria, Denmark, the European Union, FAO, Sweden, the World Bank, the United Nations Development Programme (UNDP) and the United States of America.

### **Census staff**

Approximately 5 500 census staff were involved in field operations. In particular, there were 4 500 enumerators, 900 supervisors and 100 coordinators (at the *marz* level).

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 10 October 2014, for stock items, such as the area of the holding or livestock numbers.

### **Reference periods:**

- from 1 August 2013 to 31 July 2014 for items, such as sown area of crops, use of irrigation, fertilizers and pesticides, agricultural machinery and equipment, and aquaculture;
- from 11 October 2013 to 10 October 2014 for other items, such as labour and main purpose of production.

## 4. ENUMERATION PERIOD

Data collection for the AC was carried out from 11 October to 31 October 2014.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

### **Census scope**

The AC covered the units engaged in the crop and livestock production. Some data on aquaculture activities carried out in association with the agricultural holdings’ agricultural production activities were also collected in the census. A community survey was conducted together with the AC.

### **Statistical unit**

The FAO definition of the agricultural holding was used to define the statistical unit. Two main types of agricultural holdings were distinguished in the AC 2014: (i) holdings with legal status (which include legal entities and private entrepreneurs); and (ii) holdings without legal status (which include individual households and individual farms of members of horticultural associations).

## 6. GEOGRAPHIC COVERAGE

The census was conducted throughout the country and covered both rural and urban areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No thresholds or exclusions were applied in the AC 2014.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The census was conducted following the classical approach.

**Frame**

A listing operation was carried out before the census enumeration to establish the census frame. The available statistical and administrative data sources were also used to build the frame.

**Complete and/or sample enumeration methods**

A combination of complete enumeration and sample enumeration was used in the AC 2014.

**Sample design (if sampling was used)**

All agricultural holdings were covered using the complete enumeration method, except for agricultural households in urban areas and the farms of members of horticultural associations, from both urban and rural areas, which were subject to sample enumeration (of approximately 25 percent of the units).

**Data collection method(s)**

Face-to-face interviews using the traditional Paper-and-Pen Interviewing (PAPI) method were applied to collect census data from the agricultural holdings in the household sector. Self-interviews using paper questionnaires were applied to collect census data from agricultural holdings in the non-household sector.

**Questionnaires**

Three types of questionnaires were used to collect census data: (i) a questionnaire for agricultural holdings in the household sector (including the farms of the members of horticultural associations; N 1-AC); (ii) a questionnaire for communities, N 2-AC; and (iii) a questionnaire for agricultural holdings with legal status, private entrepreneurs and other holdings, N 3-AC.

The AC questionnaire included 15 out of the 16 core items recommended in the WCA 2010.<sup>1</sup>

**9. USE OF TECHNOLOGY**

The census results were disseminated through the NSS RA's website.

**10. DATA PROCESSING AND ARCHIVING**

Data entry was carried out manually. CPro was used for data processing and SPSS for data analysis and tabulation of census results.

**11. CENSUS DATA QUALITY**

The pilot census was conducted one year before the census enumeration (in November 2013) and its findings were used to test and finalize the census methodology and tools. A comprehensive mechanism for monitoring and supervising fieldwork was established. It included: the three-level supervision of fieldwork (at the level of instruction areas, AC areas and *marzes*/Yerevan); regular reporting and analysis of response rates during data collection; field checks, etc.

From 28 November to 14 December 2014, a Post-enumeration Survey (PES) was carried out to assess the quality of census data, and particularly to measure content errors.

**12. DATA DISSEMINATION**

Different methods were used for the dissemination of census results: the NSS RA website, printed publications, CD-ROMs and dissemination workshops. The final census results were published in December 2016, in three languages (Armenian, English and Russian) in several volumes, in hard copy and electronic versions.<sup>2</sup> The census results are available at national, *marz* and community level. In addition, analytical (thematic) reports were released on the following topics: (i) permanent crops; and (ii) profile of agricultural holdings, according to their size.

**13. DATA SOURCES**

**Statistical Committee of the Republic of Armenia.** 2016. *Main findings of the Agricultural Census 2014 in the Republic of Armenia*. Yerevan, Republic of Armenia. (also available at <https://www.armstat.am/en/?nid=124>).

**14. CONTACT**

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Website: [www.armstat.am](http://www.armstat.am)

<sup>1</sup> The core item "Presence of forest and other wood land on the holding" was not collected in the AC 2014.

<sup>2</sup> These publications are: "Main findings of the Agricultural Census 2014 in the Republic of Armenia", in hard copy and electronic versions, published in three languages (Armenian, English and Russian); and *Main findings of the Agricultural Census 2014 in the Republic of Armenia* by marzes, in electronic version, published in two languages (Armenian and English).



# ARMENIA – AGRICULTURAL CENSUS 2014 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>361 064</b>	<b>534 399</b>
Civil persons	360 611	513 000
Juridical persons	453	21 399

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>361 064</b>	<b>534 399</b>
Holdings without land	14 847	
Holdings with land	346 217	534 399
Less than 1 ha	206 338	75 217
1–1.99 ha	69 908	106 806
2–4.99 ha	53 558	169 450
5–9.99 ha	12 394	84 788
10–19.99 ha	2 901	38 337
20–49.99 ha	868	23 379
50–99 ha	153	11 015
100–199 ha	58	7 034
200 ha and over	38	18 373

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		
	Number	
<b>Total</b>	<b>317 346</b>	
Male	236 558	
Female	80 788	
Under 25 years	1 401	
Male	1 143	
Female	258	
25–34 years	13 072	
Male	11 459	
Female	1 613	
35–44 years	32 772	
Male	28 143	
Female	4 629	
45–54 years	87 945	
Male	72 951	
Female	14 994	
55–64 years	89 792	
Male	70 051	
Female	19 741	
65 years and over	92 364	
Male	52 811	
Female	39 553	

HOLDINGS IN THE HOUSEHOLD SECTOR, BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>317 346</b>
1 person	46 613
2–3 persons	87 765
4–5 persons	109 356
6–9 persons	69 371
10 persons and over	4 241

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Engaged in agricultural activities on the holding</b>	<b>1 012 466</b>
Male	512 277
Female	500 189

HIRED WORKERS ON THE HOLDING, BY SEX	
	Number
<b>Total</b>	<b>334 470</b>
Male	244 669
Female	89 801
Individuals	332 099
Male	243 270
Female	88 829
Juridical persons	2 371
Male	1 399
Female	972

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>181 602</b>	
Cattle	110 975	764 217
Buffaloes	115	704
Sheep	31 580	796 790
Goats	5 732	35 484
Pigs/swine	40 613	170 746
Equines	7 108	10 983
Horses	5 396	9 092
Asses (donkeys)	1 621	1 769
Mules	91	122
Poultry (1 000 head)	151 832	5 249
Chickens	146 281	3 457
Ducks	2 869	13
Geese	2 540	13
Turkeys	8 410	43
Other animals	7 960	51 708
Rabbits and hares	7 952	51 641
Fur-bearing animals	8	67
Insects		
Bees (hives)	11 973	164 039

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Four-wheel tractors	8 027	8 704
Track-laying tractors	2 277	2 421
Combine harvesters	779	819
Ploughs (machine-powered)	3 151	3 361
Ploughs (machine-powered)	3 151	3 361

## 1. HISTORICAL OUTLINE

The 2015 Agricultural Census (AC) was the second comprehensive agricultural census to be conducted in Azerbaijan. The first AC was carried out in 1921. Between these two comprehensive ACs, only specialized agricultural censuses were conducted, such as livestock censuses or censuses of sown areas of crops, orchards and vineyards.<sup>1</sup>

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The legal basis for conducting the AC 2015 in Azerbaijan consisted of:

- the Law on Official Statistics, of 18 February 1994, No. 789, with further amendments;<sup>2</sup>
- Presidential Decree No. 2621 of 21 December 2012 on the approval of the State Programme on Development of Official Statistics in the Republic of Azerbaijan in 2013–2017;
- Resolution No. 357 of the Cabinet of Ministers dated 28 December 2013, specifying the conduct of the AC in 2015.

### *Institutional framework and international collaboration*

The AC 2015 was conducted by the State Statistical Committee (SSC), which, together with its regional offices, was responsible for all activities related to preparation and implementation of the census, data processing and publication of census results. The Ministry of Agriculture, the Ministry of Economy, the Ministry of Ecology and Natural Resources, the Ministry of Finance, the State Committee on Property Issues, the Azerbaijan State Agrarian University, the Institute of Economy of National Sciences Academy and the Scientific-Research Institute on Agriculture Economy were involved in the elaboration of the census program.

### *Census staff*

The census staff included 13 349 persons, of which 1 209 were supervisors, 11 751 were enumerators and 389 were operators, recruited to enter the census data into the electronic information system.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 June 2015, for inventory items such as livestock numbers, land property and sown area.

### *Reference periods:*

- agricultural year 2014/2015 for use of fertilizers and pesticides, etc.;
- the 12 preceding months, for receipt of credit.

## 4. ENUMERATION PERIOD

Data collection for the census was done from 1 June to 30 June 2015.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (agricultural and livestock production) and aquaculture activities.

The **statistical unit** was the agricultural holding, defined as an economic entity engaged in the production of crop and livestock products. The AC covered both holdings in the household sector and in the non-household sector.

## 6. GEOGRAPHIC COVERAGE

The AC 2015 covered rural and urban areas, excluding the territory outside the control of Government of the Republic of Azerbaijan.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No threshold was applied in the AC 2015.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the AC 2015.

### *Frame*

Statistical registers and administrative records were used to build the frame.

### *Complete and/or sample enumeration methods*

The AC 2015 was conducted by complete enumeration of agricultural holdings.

<sup>1</sup> These were: (i) livestock censuses, conducted every year on 1 January; (ii) censuses of sown areas of crops, as well as of orchards and berry beds, conducted in 1945, 1952, 1970 and 1984; and (iii) vineyards censuses, conducted in 1940, 1947, 1953, 1970, 1980 and 1984.

<sup>2</sup> Additions and amendments: 1. 22 November 2002, № 382-II QD 3. 3 December 2002, № 386-II QD 4. 30 December 2003, № 568-II QD 5. 9 March 2004, № 603-II QD 6. 18 May 2004, № 652-II QD 7. 23 December 2005, № 31-III QD 8. 20 October 2006, № 167-III QD 9. 17 April 2007, № 316-III QD 10. 1 February 2008, № 543-III QD 11. 27 October 2009, № 902-III QD 12. 15 November, 2011, №246-IVQD

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

Data collection from the agricultural holdings in the household sector was undertaken using the face-to-face interviewing method and a printed questionnaire (the PAPI method). Self-interviewing using paper questionnaires was applied to collect census data from holdings in the non-household sector.

**Questionnaire(s)**

Two questionnaires were used in the AC 2015: one for holdings in the non-household sector (Form 1) and one for those in the household sector (Form 2).

The 16 core items recommended by FAO to be collected in the WCA 2010 were covered.

**9. USE OF TECHNOLOGY**

No information on the use of new technology was provided in the census reports available.

**10. DATA PROCESSING AND ARCHIVING**

The data from census questionnaires were entered into the AC database manually by operators in regional offices of the SSC, using the MySQL program.

**11. CENSUS DATA QUALITY**

A mechanism for the monitoring and supervision of census fieldwork was established. It included supervision of fieldwork by supervisors, daily checks of the quality of the census questionnaires filled by enumerators and, if necessary, repeated visits to farms the data relating to which were in doubt. In addition, a PES was conducted to assess the AC's results.

**12. DATA DISSEMINATION**

Preliminary census results were published in 2016. The final results were disseminated in 13 volumes in 2016. The census results were disseminated at the national and subnational level.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

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# AZERBAIJAN – AGRICULTURAL CENSUS 2015 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>1 352 121</b>	<b>2 362 024</b>
Civil persons	1 350 736	2 047 569
Juridical persons	1 385	314 455

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>1 352 121</b>	<b>2 362 024</b>
Legal ownership and owner-like possession	n.a.	1 707 429
Non-legal ownership or owner-like possession	n.a.	62 971
Rented from others	n.a.	574 755
Other form of tenure	n.a.	16 869

LAND FRAGMENTATION		
	Holdings	Agricultural area (ha)
<b>Total</b>	<b>1 352 121</b>	<b>2 288 120</b>
Holdings without agricultural land	31 970	
Holdings with agricultural land	1 320 151	2 288 120
1 parcel	596 464	457 623
2–3 parcels	675 407	1 533 100
4 parcels and over	52 765	297 397

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>1 352 121</b>	<b>2 362 024</b>
Less than 1 ha	880 114	247 704
1–1.99 ha	227 796	321 005
2–4.99 ha	189 018	565 225
5–9.99 ha	37 553	249 258
10–19.99 ha	9 857	124 116
20–49.99 ha	4 426	126 497
50–99 ha	1 716	108 179
100–199 ha	891	114 877
200–499 ha	556	157 611
500–999 ha	114	71 215
1 000 ha and over	80	276 338

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>1 352 121</b>	<b>2 362 024</b>
Agricultural land	1 320 151	2 288 120
Arable land	n.a.	1 653 530
Land under temporary crops	n.a.	1 531 526
Land under temporary meadows	n.a.	6 252
Land temporarily fallow	n.a.	115 752
Land under permanent crops	n.a.	153 297
Permanent meadows and pastures	n.a.	481 293
Forest and other wooded land	n.a.	20 219
Other land	n.a.	53 685

EMPLOYEES WORKING ON THE HOLDING, BY SEX	
	Number
<b>Total</b>	<b>71 266</b>
Male	54 565
Female	16 701
Individuals	30 756
Male	22 756
Female	8 000
Juridical persons	40 510
Male	31 809
Female	8 701

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE	
	Number
<b>Total</b>	<b>1 350 736</b>
Male	1 013 067
Female	337 669
Under 25 years	8 960
Male	7 640
Female	1 320
25–34 years	118 158
Male	103 200
Female	14 958
35–44 years	259 839
Male	216 190
Female	43 649
45–54 years	435 874
Male	344 164
Female	91 710
55–64 years	328 683
Male	237 496
Female	91 187
65 years and over	199 222
Male	104 377
Female	94 845

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX AND AGE	
	Number
<b>Total</b>	<b>5 450 434</b>
Male	2 758 234
Female	2 692 200
Engaged in agricultural activities on the holding	3 498 448
Male	1 794 273
Female	1 704 175
Aged 15 years and over	3 376 352
Male	1 728 175
Female	1 648 177
Aged under 14 years	122 096
Male	66 098
Female	55 998

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	442 434	2 452 275
Buffaloes	41 704	224 197
Sheep	184 394	7 768 413
Goats	43 878	633 515
Pigs/swine	934	6 207
Equines	n.a.	98 110
Horses	n.a.	68 124
Asses	n.a.	29 899
Mules and hinnies	n.a.	87
Camels	n.a.	247
Poultry (1 000 head)	n.a.	39 778
Chickens	750 389	36 944
Ducks	n.a.	702
Geese	n.a.	994
Turkeys	n.a.	1 118
Other	n.a.	20
Insects		
Bees (hives)	16 719	215 815

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) undertaken in Bangladesh was carried out in 1960.<sup>1</sup> The second AC was conducted in 1977, followed by the 1983/1984 AC, the 1996 AC and the 2008 AC, to which the metadata and data presented here refer.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

ACs in Bangladesh are carried out under the legal mandate of the Statistics Act 2013.

### **Institutional framework and international collaboration**

The Bangladesh Bureau of Statistics (BBS) is responsible for all official statistics of the country, including the CA, as well as agricultural sampling surveys. A Technical Committee of 21 members (including the Director-General of the BBS as the chairman, the Project Director as the member-secretary, and experts from the BBS, universities, the Ministry of Agriculture, the Ministry of Planning, the Department of Fisheries and the Directorate of Forest) was constituted to decide final matters relating to census methodologies, questionnaires, training and field manuals, and all other census processes. In addition, census committees at different administrative divisions were formed.

FAO provided technical assistance.

### **Census staff**

The data collection involved 150 000 enumerators, supervised by 19 529 supervisors at a rate of seven to eight enumerators per supervisor. The supervisors' activity was coordinated by 1 978 zonal officers.<sup>2</sup> In addition, the BBS appointed 534 *upazila/thana* census coordinators, 69 district coordinators, 21 regional census coordinators and eight division census coordinators to complete the fieldwork.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of enumeration, for land tenure, size of farm, livestock and poultry inventories, farm population, etc.

**Reference period:** a 12-month period (from 14 April 2007 to 13 April<sup>3</sup> 2008), for utilization of operated land, irrigation, use of fertilizers and pesticides, aquaculture/fishing, agriculture equipment, labour, etc.

## 4. ENUMERATION PERIOD

The enumeration periods of the AC 2008 corresponded to the two phases of the census: (i) from 11 May to 25 May 2008 for the first phase of complete enumeration; and (ii) from 15 November to 4 December 2008 for the sample enumeration performed in the second phase.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). Detailed information on the aquaculture and capture fisheries activities of household members was also collected.

The **statistical unit** was the agricultural holding, defined as a production unit under single management (both technical and economic) and engaged in agriculture activities. The AC 2008 covered only the agricultural holdings in the household sector.

All holdings were classified according to size as:

- small – holdings with a total land area between 0.05 and 2.49 acres (1 acre = 0.4047 ha);
- medium – holdings operating a total area between 2.5 and 7.49 acres; and
- large – holdings operating more than 7.5 acres of land.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country. Both rural and urban areas were covered.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The AC 2008 included only the agricultural holdings with more than 0.05 acres of land, managed by households. The AC 2008 did not cover the agricultural holdings in the non-household sector.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The AC used the classical approach (a short-long questionnaire concept).

Data collection was carried out in two phases, by using: (i) a short questionnaire, in the first phase, based on complete enumeration; and (ii) a long questionnaire, in the second phase, sample-based.

<sup>1</sup> The 1960 CA was conducted on a sample basis, before the country achieved independence in 1971.

<sup>2</sup> A zone comprised averagely 78 Enumeration Areas (EAs) and all zonal officers were statistical staff of the BBS.

<sup>3</sup> 1 Baishak to 30 Choitra, 1414 Bangla Shal (BS).

### Frame

A short questionnaire provided the frame for the agricultural survey for the second phase of the census.

### Complete and/or sample enumeration methods

The census was conducted in two phases:

- Phase I: complete enumeration of all households, both in rural and urban areas. A short questionnaire containing basic agriculture-related items was used for data collection from 11 May to 25 May 2008.
- Phase II: sample enumeration with a long questionnaire was adopted to obtain detailed data on agriculture. Data collection was conducted from 15 November to 4 December 2008.

### Sample design (if sampling was used)

For Phase II, 10 percent of the 155 578 EAs were selected; subsequently, 10 percent of the households involved in agricultural activities were drawn in each selected Enumeration Area, or EA (a total of about 155 000 households).

### Data collection methods

In both data collection phases, the interviews were conducted face-to-face and the information was collected in paper forms (that is, using the PAPI method).

### Questionnaire(s)

Data were collected by means of two questionnaires: (i) a short questionnaire in the first phase (full count); and (ii) a long questionnaire in the second phase (sample-based).

The AC 2008 questionnaires covered 13 items of the 16 core items<sup>4</sup> recommended for the WCA 2010 round.

## 9. USE OF TECHNOLOGY

Data dissemination through the BBS website was used to release the results of the AC 2008.

## 10. DATA PROCESSING AND ARCHIVING

Once the questionnaires had been thoroughly checked and edited, they were then coded in preparation for data processing. The data were entered manually and a special data entry programme was developed in FoxPro with exhaustive checks of every kind, including duplication of records. Although these checks slowed down the speed of the data entry operation, they ensured accuracy and consistency. As a result, no further edit or imputation was necessary before embarking upon the tabulation process.

## 11. CENSUS DATA QUALITY

The AC questionnaires were pre-tested. The results of the pre-test were analysed for finalizing the questionnaires, under the guidance of the Technical Committee. Upon completion of the fieldwork of the complete enumeration phase, a PES<sup>5</sup> was conducted to assess the census data quality. The PES findings are available in a report published separately.

## 12. DATA DISSEMINATION

The AC 2008 data were disseminated by means of printed reports and through the website.<sup>6</sup>

## 13. DATA SOURCES

**Bangladesh Bureau of Statistics (BBS).** 2010. *Census of Agriculture 2008: Structure of Agricultural Holdings and Livestock Population*, vol. 1. Dhaka, Bangladesh. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Reports\\_3/BGD\\_ENG\\_REP\\_2008.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Reports_3/BGD_ENG_REP_2008.pdf)).

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

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<sup>4</sup> The following items were not covered: (i) "Legal status of agricultural holder"; (ii) "Age of agricultural holder"; and (iii) "Main purpose of production of the holding".

<sup>5</sup> "Post-enumeration check".

<sup>6</sup> The AC 2008 data are available at <http://203.112.218.65:8008/PageReportLists.aspx?PARENTKEY=44>

# BANGLADESH – AGRICULTURAL CENSUS 2008 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>15 183 183</b>	<b>9 026 516</b>

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>15 183 183</b>	<b>9 026 516</b>
Owner	8 672 725	4 967 167
Owner-cum-tenant	6 037 207	3 886 985
Tenant	473 251	172 364

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>15 183 183</b>	<b>9 026 516</b>
0.02–0.2 ha	4 247 673	485 648
0.2–0.4 ha	3 610 131	1 023 059
0.4–0.6 ha	2 484 406	1 182 676
0.6–1.0 ha	2 470 162	1 896 471
1.0–3.0 ha	2 136 415	3 332 252
3.0 ha and over	234 396	1 106 411

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	
<b>Total</b>	<b>15 183 183</b>	
Male	14 734 773	
Female	448 410	

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		
	Number	
<b>Total</b>	<b>78 847 728</b>	
Male	41 040 446	
Female	37 807 282	
Engaged in agricultural activities on the holding	22 429 272	
Male	16 412 262	
Female	6 017 010	

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>n.a.</b>	
Cattle	8 243 681	21 898 410
Buffaloes	141 610	455 046
Sheep	282 565	969 911
Goats	4 521 634	12 373 559
Poultry (1 000 head)	n.a.	n.a.
Chickens	10 095 266	73 703
Ducks	5 773 836	30 588
Pigeons	710 596	6 270

IRRIGATION		
	Holdings	Area irrigated (ha)
Holdings with irrigated land	10 323 934	4 848 044

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Total tractors of all kind	21 062	22 449
Other (machine-powered)	n.a.	
Power tiller	136 154	141 767
Threshing machine	551 361	602 199
Seeders	16 339	27 629
Other machines	5 710 685	n.a.

TEMPORARY CROPS HARVESTED	
	Area (ha)
<b>Total</b>	<b>n.a.</b>
Cereals	n.a.
Rice	8 912 580
Wheat	260 744
Maize	269 989
Barley	612
Oats	1 291
Millet	14 778
Other cereals	3 492
Vegetables and melons	280 954
Pumpkin	42 361
Tomatoes	30 339
Okra	3 358
Cabbages	2 411
Eggplants	72 676
Carrots	794
Garlic	38 643
Onion	78 908
Other vegetables	129 014
Oilseed crops	505 455
Rape	377 108
Mustard	917
Sesame	43 370
Groundnuts	68 213
Soya beans	11 584
Other oilseed crops	4 263
Root/tuber crops	n.a.
Potatoes	309 603
Sweet potatoes	41 989
Leguminous crops	434 715
Pigeon peas	582
Lentils	96 474
Peas	1 364
Other pulses	336 295
Spice and aromatic crops	n.a.
Chilies	196 820
Other spice crops	62 723
Sugar crops	n.a.
Sugar cane	88 351
Other temporary crops	n.a.
Industrial crops	572 291
Jute	441 314
Cotton	4 642
Tobacco	32 769
Other industrial crops	5 215
Fodder	1 175

PERMANENT CROPS	
	Area (ha)
<b>Total</b>	<b>507 845</b>
Orchards	499 307
Nurseries	5 315
Horticulture	3 223

## 1. HISTORICAL OUTLINE

The Renewable Natural Resources (RNR) Census 2009, to which the metadata review and data presented here refer, is the second census of its kind to be conducted in the Kingdom of Bhutan, after the RNR Census 2000.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the collection of statistics in the country is provided by the Executive Order of the Prime Minister Com 04/06/1196 dated 26 May 2006.

### **Institutional framework and international collaboration**

The Policy and Planning Division (PPD) of the Ministry of Agriculture and Forests (MoAF) is the agency responsible for undertaking the RNR Census in Bhutan. The heads of the departments or divisions within the MoAF formed the Agricultural Census Steering Committee. Besides the PPD, the committee comprised representatives of the following MoAF entities: (i) the Department of Agriculture; (ii) the Department of Livestock; and (iii) the Department of Forests and Park Services.

The census was funded from the following sources: the Danish Agency for International Development (DANIDA), the Swiss Agency for Development Cooperation (SDC), the International Food Policy Research Institute (IFPRI), and the Royal Government of Bhutan (RGoB).

### **Census staff**

The census fieldwork involved approximately 730 enumerators, 60 supervisors and 20 census coordinators.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of enumeration, for the household's identification information, etc.

**Reference period:** from January to December 2008, for utilization of land, land tenure, irrigation, use of fertilizers, agriculture machinery and equipment, labour, main source of income, forestry, etc.

## 4. ENUMERATION PERIOD

Enumeration was done from January to February 2009, except for the subdistricts of Laya, Lunana and Naja, where enumeration was conducted from July to August 2009 because of inaccessibility in winter.

## 5. SCOPE OF CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production) and forestry activities.

The **statistical unit** was the farm household, defined as a person or group of persons operating as one economic unit and engaged in agricultural production.

## 6. GEOGRAPHIC COVERAGE

The census mainly focused on the rural and semi-urban areas<sup>1</sup> of the country, where the natural resources sector still dominates the population's development occupation.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The units engaged in agricultural activities in towns, schools and military barracks were excluded from the census.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2009.

### **Frame**

The census frame was built on the basis of the list of households provided by the Geog (subdistricts) RNR Extension Centers (structures of the MoAF).

### **Complete and/or sample enumeration methods**

The census consisted of a complete enumeration of the households engaged in agricultural and forestry activities.

### **Sample design (if sampling was used)**

No sampling was used.

<sup>1</sup> Semi-urban areas where agricultural production activity is practiced.



**Data collection methods**

Data collection was done by means of face-to-face interviews using paper forms, that is, the PAPI method. The enumerators visited the households; however, in a few cases, because of the scattered nature of settlements and the distances between them, the respondents (farmers) had to be gathered at appropriate locations to be interviewed.

**Questionnaire(s)**

Data were collected using one single questionnaire.

The RNR 2009 census questionnaire covered 12 of the 16 core items<sup>2</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

The database was designed using Microsoft Access software. Data entry was done by temporary recruits using 20 computers. Data processing was performed by establishing queries in the Microsoft Access program. The data analysis was carried out using Microsoft Excel.

**11. CENSUS DATA QUALITY**

The data validation was scrutinized at three key stages, to decrease errors: (i) at questionnaire design;<sup>3</sup> (ii) at field data collection;<sup>4</sup> and (iii) at data computation.

**12. DISSEMINATION**

The RNR 2009 census results were disseminated by means of printed reports, which were distributed to all relevant departments and agencies of the Royal Government of Bhutan. The final census reports, published in two volumes, included extensive methodological explanations. The PDF version of the RNR 2009 census report is available on the institution's website.<sup>5</sup>

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

**Ministry of Agriculture and Forests, Policy and Planning Division.** 2010. *Renewal Natural Resources (RNR) Census 2009, Final report (Volumes I and II)*. Thimphu, Bhutan.

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<sup>2</sup> The following four items were not covered: (i) "Legal status of agricultural holder"; (ii) "Household size"; (iii) "Presence of aquaculture on the holding"; and (iv) "Other economic production activities of the holding's enterprise".

<sup>3</sup> The RNR census questionnaire was designed in such a way that in most cases, the enumerators were simply required to write codes, tick and select from a list. This ensured uniformity and prevented misspellings of the entries.

<sup>4</sup> Field data collection was done by the Extension Officers posted in the Geogs. These officers were subject specialists, well acquainted with the local farming system and were reasonably versed in local dialects. The enumerators were provided with an enumeration manual each, for reference during the data collection. In addition, at the end of each day, the field supervisors checked the completed questionnaires for completeness and errors.

<sup>5</sup> As the "DoA-RNR census 2009", at <http://www.moaf.gov.bt/download/Statistics/#wpfb-cat-2>.

# BHUTAN – RENEWABLE NATURAL RESOURCES CENSUS 2009 – MAIN RESULTS

AGRICULTURAL AREA OF HOLDINGS		
	Holdings	Agricultural area (ha)
<b>Total</b>	<b>n.a.</b>	<b>94 903</b>

LIVESTOCK	
	Head
Cattle	310 071
Yaks	40 482
Sheep	12 116
Goats	34 176
Pigs/swine	18 963
Horses	22 301
Poultry (1 000 head)	198

MACHINERY AND EQUIPMENT USED ON THE HOLDING	
	Units
Total tractors of all kind	136
Other (machine-powered)	
Power tiller	1 662
Power thresher	439
Diesel engine thresher	479
Rice mill set	2 565
Maize sheller	179
Paddy transplanter	535
Power sprayer	292
Corn flake machine	144
Vegetable/fruit drier	37
Water pump	177

TEMPORARY CROPS HARVESTED	
	Area (ha)
<b>Total</b>	<b>n.a.</b>
Cereals	n.a.
Rice	19 356
Maize	27 227
Wheat	3 189
Barley	1 314
Buckwheat	3 438
Millet	3 519
Spice and aromatic crops	n.a.
Chilies	3 826
Oilseed crops	n.a.
Mustard	3 579
Root/tuber crops	n.a.
Potatoes	5 560

PERMANENT CROPS	
	Number of trees/plants
<b>Total</b>	<b>n.a.</b>
Tropical and subtropical fruits	n.a.
Mangoes	35 000
Citrus fruits	n.a.
Mandarines	1 975 000
Pome fruits and stone fruits	n.a.
Apples	321 000
Peaches	40 100
Pears	22 000
Plums	9 000
Nuts	n.a.
Walnuts	45 000
Areca nuts	1 751 000
Other	451 000

## 1. HISTORICAL OUTLINE

The 2013 National Census of Agriculture in Cambodia (NCAC) was the first census of agriculture to be conducted in the country.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

All statistical activities in the country are ruled by the Statistical Law of Cambodia of 9 May 2005, further amended on 19 July 2010.

### *Institutional framework and international collaboration*

The National Institute of Statistics (NIS) of the Ministry of Planning (MoP), in collaboration with the Ministry of Agriculture, Forestry and Fisheries (MAFF), were the responsible government institutions authorized to undertake the NCAC 2013.<sup>1</sup> The census was funded by the National Budget, along with donors such as the United States Agency for International Development (USAID), Australian Aid (AusAID) and the Government of Sweden. FAO provided technical assistance for the census.

### *Census staff*

Approximately 4 000 hired field staff were trained before undertaking the census data collection.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for identification of the holding, livestock numbers, land tenure, presence of forest and woodland, presence of permanent crops, etc.

### *Reference periods:*

- the 12-month period prior to 1 April 2013 (1 April 2012–31 March 2013), for the core module;
- twelve months prior to 1 November 2013 (November 2012–October 2013), for the supplementary modules.

## 4. ENUMERATION PERIOD

The NCAC 2013 was undertaken in two phases:

- The core module was conducted from 17 April 2013 to 31 May 2013;
- The supplementary module were conducted from 1 November 2013 to 22 November 2013.

There was a slight extension of the data collection period in the second phase because of heavy rain and problems of access encountered by the survey teams, particularly in hilly areas.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production), as well as aquaculture activities. A community (village) survey was conducted jointly with the 2013 NCAC.

The **statistical unit** was the agricultural holding, defined as an economic unit under single management with at least one of the following characteristics: a minimum of 300 m<sup>2</sup> (0.03 ha) of land used wholly or partly for agricultural production; a minimum of two large livestock; a minimum of three small livestock; a minimum of 25 poultry. Two types of agricultural holdings were distinguished in the NCAC 2013: agricultural holdings in the household sector (household agricultural holdings) and those in the non-household sector (agricultural entities operated by corporations, cooperatives, government and private institutions). The primary residence of a household holding is known as the “homestead” or “homelot”. The activities of household holdings in Cambodia were separated in three categories: (a) agricultural activity within the homelot only; (b) agricultural activity on lands separated from the homelot (“separate agricultural lands” or “external parcels”); and (c) agricultural activity within the homelots as well as in separate agricultural lands.

## 6. GEOGRAPHIC COVERAGE

The NCAC 2013 covered all provinces in Cambodia, with the exception of the urban area of Phnom Penh.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The units below the established threshold (see section 5) were excluded from the NCAC 2013.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The modular approach was used in the NCAC 2013. The census included a core census module and four supplementary modules. A community survey was also conducted together with the census.

### *Frame*

The list of villages compiled for the Population Census (PC) 2008 was used for the listing operation conducted in the first (core module) phase. All households were interviewed in the first phase (using Form A) to identify their involvement in agricultural activities. Then, the list of agricultural production households prepared from the data collected in Form B, during the core module phase, was used as the sampling frame in the supplementary phase. “Large” agricultural households were also identified at this census stage. In addition, a list of “special” agricultural holdings and agricultural holdings operated by juridical persons was prepared on the basis of administrative data sources, at the administrative level.

<sup>1</sup> Two committees were created shortly after the project started, the National Census Committee (NCC) and the Provincial Census Committees (PCCs), to provide assistance in census planning and organization.

**Complete and/or sample enumeration methods**

The core module covered the agricultural production households and was carried out on a complete enumeration basis.

The supplementary modules were conducted using a combination of complete and sample enumeration:

- Sample enumeration was used for holdings operating a land area between 0.03–9.99 ha, and/or having two to nine head of cattle or buffaloes, and/or from 3 to 19 pigs or goats, and/or 25 to 499 chickens or ducks, which were selected by using a sampling methodology.
- Complete enumeration was used for holdings that exceeded the minimum size limits established for the sample enumeration. The “special” agricultural holdings and agricultural holdings operated by juridical persons were also covered by means of complete enumeration.

**Sample design (if sampling was used)**

For the supplementary modules, a stratified two-stage sampling design was adopted. The Primary Sampling Units (PSUs) were villages within a commune. The Secondary Sampling Units (SSUs) were households with small agricultural holdings within the sampled villages. The PSUs were selected within each commune using sampling with probability proportional to size (PPS), the size measure being the number of households with agricultural holdings.<sup>2</sup>

**Data collection method(s)**

The interviews were conducted face-to-face and the information was collected in paper forms (using PAPI method).

**Questionnaire(s)**

The CAC 2013 used six questionnaires for data collection from holdings in the household sector and one questionnaire (form G) for the community (village) survey. From the six household holding questionnaires, two were applied in the core module phase (using Forms A and B). The other four questionnaires were used in the supplementary modules phase (Forms C – crops, D – livestock, E – aquaculture and F – household). Separate forms were used to collect data for agricultural holdings in the non-household sector. The NCAC 2013 census questionnaires covered all 16 core items recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

At the census headquarters, the completed questionnaires were received first in the documentation control unit, where certain minimum checks were conducted regarding coverage and completeness of questionnaires, and then submitted for manual data entry and further processing. Data processing and computation were undertaken using the CSPro 5.0 data processing software package. The data entry package was embedded with consistency checks. This process was further supplemented by manual scrutiny, howler checks and, finally, computer editing.

**11. CENSUS DATA QUALITY**

Quality checks, checks for inconsistencies and comparisons with external data were the main ways of assessing the quality of the census results.

**12. DATA DISSEMINATION**

Preliminary census results were released through a printed publication in August 2014. The report with the final census results was published in December 2015. The census publications were disseminated in hard copy and on CD-ROMs in both Khmer and English (available upon request) and on the NIS website.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

**National Institute of Statistics.** 2019. *Agriculture census result* [online]. Phnom Penh, Cambodia. [Cited 13 September 2019]. <https://www.nis.gov.kh/index.php/en/12-publications/15-agriculture-census-in-cambodia-2013-final-result>

**National Institute of Statistics of the Ministry of Planning, Ministry of Agriculture, Forestry and Fisheries.** 2015. *Census of Agriculture of the Kingdom of Cambodia 2013: National Report on Final Census Results*. Phnom Penh, Cambodia. (also available at [https://www.nis.gov.kh/nis/CAC2013/Final\\_Report\\_En.pdf](https://www.nis.gov.kh/nis/CAC2013/Final_Report_En.pdf)).

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<sup>2</sup> The SSUs were selected systematically with a random starting point. The first stage of sample selection was conducted at the commune level using a sampling rate of 50 percent, to produce statistics at this level. Households with small agricultural holdings were selected with a sampling rate of 5 percent, that is, for every 20 households with small agricultural holdings, one was chosen as a sample household.

# CAMBODIA – CENSUS OF AGRICULTURE 2013 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS <sup>1</sup>		
	Holdings	Area (ha)
<b>Total</b>	<b>2 129 149</b>	<b>3 286 713</b>
Civil persons	2 129 048	2 480 085
Juridical persons	101	806 628

LAND TENURE <sup>1</sup>		
	Holdings	Area (ha)
<b>Total</b>	<b>2 129 149</b>	<b>3 286 713</b>
Legal ownership and owner-like possession	n.a.	3 168 184
Rented from others	n.a.	108 946
Other form of tenure	n.a.	9 583

LAND FRAGMENTATION <sup>2</sup>		
	Holdings	Area (ha)
<b>Holdings with separate agricultural land</b>	<b>1 875 712</b>	<b>3 071 384</b>
1 parcel	860 828	1 047 002
2–3 parcels	814 407	1 493 996
4–5 parcels	155 900	383 634
6–9 parcels	40 736	128 350
10 parcels and over	3 841	18 402

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES <sup>2</sup>		
	Holdings	Area (ha)
<b>Holdings with separate agricultural land</b>	<b>1 875 712</b>	<b>3 071 384</b>
Less than 1 ha	869 493	395 290
1–3.99 ha	850 091	1 479 848
4–9.99 ha	133 407	718 515
10–19.99 ha	18 200	219 428
20–49.99 ha	3 681	98 307
50 ha and over	840	159 995

LAND USE <sup>2</sup>		
	Holdings	Area (ha)
<b>Total</b>	<b>1 875 712</b>	<b>3 071 384</b>
Agricultural land	n.a.	3 064 128
Land under temporary crops	n.a.	2 699 037
Land under temporary meadows	n.a.	1 195
Land temporarily fallow	n.a.	16 612
Land under temporary and permanent crops	n.a.	151 772
Land under permanent crops	n.a.	195 212
Permanent meadows and pastures	n.a.	301
Other land	n.a.	7 256
Land under livestock and/or poultry	n.a.	5 094
Land under aquaculture	n.a.	159
Other	n.a.	2 003

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>1 611 646</b>	
Cattle	949 277	3 248 417
Buffaloes	153 872	519 083
Goats	3 706	31 604
Pigs/swine	448 626	2 220 811
Horses	7 134	13 839
Poultry (1 000 head)	n.a.	n.a.
Chickens	1 357 333	45 168
Ducks	249 923	11 297
Turkeys	1 854	16
Other	1 673	

MACHINERY AND EQUIPMENT USED ON THE HOLDING	
	Units
Total tractors of all kinds	113 862
Ploughs (machine-powered)	690 872
Other (machine-powered)	
Harrow	670 826
Cultivator	509 695
Sprayer	489 074
Harvester	432 340
Thresher	538 643
Water pump	414 624
Power tiller	631 404
Huller	13 864
Rice miller	266 549

<sup>1</sup> Number and area of agricultural holdings with separate agricultural lands and homelots.

<sup>2</sup> Number and area of agricultural holdings with separate agricultural lands, excluding homelots.

## 1. HISTORICAL OUTLINE

The Agricultural Census (AC) 2006, to which the metadata review and data presented here refer, is the second agricultural census to be undertaken in China after the AC 1996.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

Statistical activities in China are regulated by the Statistics Law of the People's Republic of China, enacted in 1983, with amendments in 1996 and 2009.

The AC 2006 was undertaken by virtue of Decree No. 473 of the State Council, of 23 August 2006. According to Article 8 of the Decree, the AC shall be conducted decennially in years ending with 6.

### **Institutional framework and international collaboration**

The National Bureau of Statistics (NBS) is the agency responsible for conducting the AC. Other state bodies and organizations concerned with the agricultural census were actively involved in accomplishing the works related to the AC. The State Council established the Agricultural Census Office (ACO) for the AC. In line with the Chinese fiscal system, the funds needed for the AC 2006 were shared by the central government and local governments at all levels and were included in the governmental budgets of the corresponding year, so that the funds could be appropriated on schedule and ensured. An AC Technical Committee, responsible for the AC methodology, was formed. Technical consultations with some international organizations and statistical agencies related to the conduct of the AC were held.

### **Census staff**

Seven million census staff were involved in fieldwork activities; bodies at all levels were mobilized in the entire country.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 December 2006, for inventory items such as the area of arable land.

**Reference period:** calendar year 2006 (from 1 January to 31 December), for items such as sown area and agricultural machinery.

## 4. ENUMERATION PERIOD

Field data collection took place between 1 January and 31 March 2007.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** included agricultural activities (crop and animal production), agricultural services, forestry and fishery activities. In addition, the AC collected the information on rural infrastructure and basic social services, the living conditions of rural residents, town and township government and villagers' committees.

The **statistical unit** of the AC 2006 was the agricultural holding, defined as the household or the entity in the non-household sector engaged in crop farming, animal husbandry, forestry, fishery and agricultural services on agricultural land, and that meet one of the criteria specified as a threshold (see section 7 below). The agricultural holdings were classified as: (a) household agricultural holdings or (b) non-household agricultural holdings, as identified by surveying the following entities and households within the territory of the People's Republic of China: (i) rural households;<sup>1</sup> (ii) urban agricultural households;<sup>2</sup> and (iii) non-household agricultural holdings (agricultural establishments).<sup>3</sup>

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country, including urban and rural areas. Taiwan Province of China, China, Hong Kong Special Administrative Region and China, Macao Special Administrative Region were not covered by the census.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following minimum size limits (MSLs) were used to define a household agricultural holding: (i) the holding operates more than 0.1 mu (approximately 67 m<sup>2</sup>) of arable land or land under permanent crops and water surface of aquaculture at the end of year; (ii) the holding operates more than 0.1 mu of woodland and pasture at the end of the year; (iii) the holding keeps at least one large or medium livestock, such as cattle, horse, pig and sheep at the end of the year; (iv) the holding keeps at least 20 head of small animals, such as rabbits or poultry; (v) the income of the yearly sales of agricultural products, including self-consumption, exceeds RMB<sup>4</sup> 500; (vi) the income from providing agricultural services to other households or other entities exceeds RMB 500.

<sup>1</sup> Rural households include rural agricultural households (rural household agricultural holdings) and other rural households. Rural agricultural households refer to those households engaged in "agricultural" activities, including crop farming, forestry, animal husbandry, fisheries/aquaculture and agriculture services in rural areas. Other rural households refer to households in rural areas that are not engaged in such agricultural activities. In rural EAs, all agricultural households and non-agricultural households were enumerated.

<sup>2</sup> Urban agricultural households (urban household agricultural holdings) refers to those households engaged in "agricultural" activities, including crop farming, forestry, animal husbandry, fishery/aquaculture and agriculture services.

<sup>3</sup> Non-household agricultural holdings are legal entities, agricultural establishments of legal entities with multiple establishments and unregistered entities that basically satisfy the qualification of legal person, that are engaged in agricultural activities including crop farming, forestry, animal husbandry, fishery/aquaculture and agriculture service in rural areas.

<sup>4</sup> Chinese renminbi.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2006.

### **Frame**

At village level, the household list for rural residents was used as the census frame. For non-household holdings, administrative records for enterprises from government regulatory agencies were used as a reference for the census. The enumerators were required to identify each eligible enterprise and establishment in scope.

### **Complete and/or sample enumeration methods**

A complete enumeration was applied in the AC 2006.

### **Sample design (if sampling was used)**

Not applicable.

### **Data collection methods**

The interviews were conducted face-to-face during visits to the household, enterprise and establishment and the information was collected in paper forms (using the PAPI method). The questionnaires for the non-household agricultural holding were filled in by self-enumeration.

### **Questionnaire(s)**

Four types of questionnaires were used in the AC 2006: (i) questionnaires for households (which covered all households in rural areas and urban agricultural households); (ii) questionnaires for agricultural holdings in the non-household sector (three specific questionnaires for different types of units); (iii) village questionnaires; (iv) township questionnaires; and (v) agricultural land questionnaires.

The AC 2006 questionnaires covered all 16 core items recommended for the WCA 2010 round.

## 9. USE OF TECHNOLOGY

Scanning (OCR) was used for census data capture. Census results were disseminated and are accessible online.

## 10. DATA PROCESSING AND ARCHIVING

A combination of different methods, such as manual data entry and scanning, was used for census data capture. The software used for data capture, processing, analysis and tabulations were aPRAS and SAS. Microdata were stored on the server.

## 11. CENSUS DATA QUALITY

After enumeration was completed, the ACO organized three-level data quality checks, including the PES of households, data verification on agricultural land parcels, and the proof for data processing.

The PES of households consisted of 110 sample counties covering 330 census areas, and more than 20 000 households. It was conducted using a stratified two-stage sampling method. The census data were verified against the registration results of the AC.

## 12. DATA DISSEMINATION

The AC results were disseminated through printed reports on the final results (such as the “Abstract of the Second AC in China”) and online.

## 13. DATA SOURCES

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

**National Bureau of Statistics of China.** 2008. Communiqué on Major Data of the Second National Agricultural Census of China. In: *National Bureau of Statistics of China* [online]. Beijing, China. [Cited 25 July 2019]. [http://www.stats.gov.cn/english/newsevents/200802/t20080226\\_25993.html](http://www.stats.gov.cn/english/newsevents/200802/t20080226_25993.html)

**Office of the Leading Group of the State Council for the Second National Agricultural Census, National Bureau of Statistics of China.** 2010. *Abstract of the Second National Agricultural Census in China*. China Statistics Press.

## 14. CONTACT

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# CHINA – AGRICULTURAL CENSUS 2006 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>200 554 307</b>	<b>n.a.</b>
Household agricultural holdings	200 159 127	n.a.
Non-household agricultural holdings	395 180	n.a.

ARABLE LAND BY LAND TYPE <sup>1</sup>	
	Area (ha)
<b>Total</b>	<b>121 775 900</b>
Paddy field	31 667 900
Irrigable land	22 963 300
Dry land	67 144 600

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>2</sup>	
	Number
<b>Total engaged in agricultural activities</b>	<b>342 463 995</b>
Male	160 412 772
Female	182 051 223

LABOUR FORCE OF THE HOUSEHOLD AGRICULTURAL HOLDINGS <sup>3</sup>	
	Number
<b>Total</b>	<b>213 765 511</b>
Male	106 174 072
Female	107 591 439
Household members	212 210 741
Male	105 112 273
Female	107 098 468
Outside workers (employees)	1 554 770
Male	1 061 799
Female	492 971

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>9 939 358</b>	
Cattle	n.a.	104 651 000
Sheep	n.a.	131 340 000
Goats	n.a.	147 636 000
Pigs/swine	n.a.	418 504 000
Poultry (1 000 head)	n.a.	4 834 011

MACHINERY AND EQUIPMENT USED ON THE HOLDING	
	Units
<b>Total tractors of all kind</b>	<b>26 584 019</b>
Large and medium tractors	1 322 028
Minitractors	25 261 991
Combine harvesters	527 723

TEMPORARY CROPS		
	Holdings	Area (ha)
<b>Total</b>	<b>184 211 269</b>	<b>152 259 000</b>
Rice	n.a.	28 938 000
Wheat	n.a.	23 723 000
Maize	n.a.	28 463 000
Vegetables and melons	n.a.	18 885 000
Rapeseed	n.a.	5 984 000
Peanuts	n.a.	3 956 000
Potatoes	n.a.	7 877 000
Soya beans	n.a.	9 304 000
Sugar crops	n.a.	1 567 000
Cotton	n.a.	5 816 000
Tobacco	n.a.	1 189 000
Medicinal crops	n.a.	831 000

<sup>1</sup> Data are presented according to the national land types.

<sup>2</sup> Members of the holder's household (permanent residents) engaged in agricultural activities on the holding.

<sup>3</sup> Labour force of the household agricultural holdings working for more than six months.



## 1. HISTORICAL OUTLINE

The 2010 Census of Agriculture (CA) is the sixth to be conducted in the Republic of Cyprus since the country achieved independence. The previous CAs were undertaken in 1960, 1977, 1985, 1994 and 2003. The Survey on Agricultural Production Methods (SAPM) was carried out together with the CA 2010.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The National Statistics Law of 2000 is the legal basis for carrying out the farm structure surveys (FSS) and all other statistical surveys carried out by the Statistical Service of Cyprus (CYSTAT). The CA 2010 also complies with the relevant EU legislation<sup>1</sup> for carrying out the FSSs.

### *Institutional framework and international collaboration*

CYSTAT was responsible for census-taking. The census was funded by the European Union (EU) and the Cyprus National Budget. The project was organized by a four-member team under the supervision and guidance of the head of the Agricultural Statistics section of CYSTAT.

### *Census staff*

A total number of 165 persons worked on the project, of which 132 field enumerators and 22 field supervisors for data collection in the CA 2010. In addition, 53 enumerators and 11 supervisors were involved for the SAPM.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 November 2010, for inventory items such as livestock numbers.

### *Reference periods:*

- the crop year (from 1 October 2009 to 30 September 2010), for area of the holding by type, organic farming, irrigation, machinery used by the holding, labour force, etc.;
- the last three years (2007, 2008 and 2009) for rural development measures.

## 4. ENUMERATION PERIOD

There were two enumeration periods: from September 2010 to April 2011 for the CA 2010 and from May to June 2011 for the SAPM.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production).

The **statistical unit** was the agricultural holding, defined as a technical-economic unit under single management that produces agricultural products. For the purposes of the 2010 CA, a unit of this type is considered a holding and is enumerated only if it meets predefined threshold criteria (see section 7 below).

## 6. GEOGRAPHIC COVERAGE

The data refer only to the government-controlled areas of the Republic of Cyprus.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The units that did not meet the following thresholds were excluded from the census: (i) having an utilized agricultural area equal to or greater than 1 decare (0.1 ha); (ii) having 0.5 decare (0.05 ha) in greenhouses; (iii) having at least one cow; (iv) having at least two other large animals; (v) having five and more small animals; (vi) having 50 and more poultry; (vii) having 20 and more beehives; (viii) having five and more ostriches; or (ix) having ten or more rabbit-breeding females.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the CA.

<sup>1</sup> (i) Regulation (EC) No. 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No. 571/88, and (ii) Commission Regulation (EC) No. 1200/2009 of 30 November 2009 implementing Regulation (EC) No. 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards livestock unit coefficients and definitions of the characteristics.

**Frame**

The census frame was based on the updated agricultural register (the register of agricultural holders). The register was created based on the CA 2003, and was updated using the FSSs 2005 and 2007, other annual surveys and information from a wide variety of other sources.<sup>2</sup>

**Complete and/or sample enumeration methods**

The CA 2010 was conducted as a complete enumeration and the SAPM was conducted as a sample survey.

**Sample design (if sampling was used)**

The sampling frame for the SAPM was provided by the CA 2010. The sample was drawn using stratified random sampling.

**Data collection methods**

The CA data were collected on paper questionnaires using the face-to-face interview (PAPI) method.

**Questionnaire(s)**

Two questionnaires were used for data collection: one for the CA 2010 and one for the SAPM. All 16 core items recommended in the WCA 2010 were collected through the CA 2010 and the SAPM.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Data entry desks (for manual data entry) were established in the central office of CYSTAT, where computers were loaded with the specific software programme. The programme carried out several checks, such as consistency checks, valid value and range checks and arithmetic checks. As non-response was low, no adjustments were deemed necessary.

**11. CENSUS DATA QUALITY**

A multi-stage checking process was established both for purposes of coverage and for purposes of minimizing errors on the questionnaires. Follow-up interviews were carried out during the data collection process in cases where errors and weaknesses were identified.

**12. DATA DISSEMINATION**

A publication for the Census of Agriculture 2010 was prepared and is available on the website of CYSTAT. A national methodological report was also prepared on the basis of the requirements of the relevant EU Regulation.

**13. DATA SOURCES**

**Statistical Service of Cyprus.** 2014. *Census of Agriculture 2010*. Nicosia. Agricultural Statistics, Series I, Report No. 8. (also available at [http://www.cystat.gov.cy/mof/cystat/statistics.nsf/All/DE20AEA98C4DD6EEC22577A50041F0B8/\\$file/AGRICULTURE\\_CENSUS-2010-100314.pdf?OpenElement](http://www.cystat.gov.cy/mof/cystat/statistics.nsf/All/DE20AEA98C4DD6EEC22577A50041F0B8/$file/AGRICULTURE_CENSUS-2010-100314.pdf?OpenElement)).

**Statistical Service of Cyprus.** 2012. *National Methodological Report (NMR) Farm Structure Survey 2009/2010. Survey on agricultural production methods 2009/2010*. Nicosia. Eurostat. (also available at [https://ec.europa.eu/eurostat/documents/749240/749313/CY\\_NMR\\_FSS\\_2010.pdf/acbbbbbbe-e865-4ea0-9519-955ab1dfef5e](https://ec.europa.eu/eurostat/documents/749240/749313/CY_NMR_FSS_2010.pdf/acbbbbbbe-e865-4ea0-9519-955ab1dfef5e)).

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<sup>2</sup> The following sources were used to update the farm register: (i) Cows register (held by the Statistical Service); (ii) Sheep and goats register (Statistical Service); (iii) Vines register (Statistical Service); (iv) Flower growers register (Ministry of Agriculture); (v) The Census of Agriculture, 2003; and (vi) Property tax registers (held by community councils in rural areas); (vii) Rabbits register (Ministry of Agriculture); (viii) Cereals and crops register (Statistical Service); (ix) Pigs register (Statistical Service); and (x) Cyprus Agricultural Payment Organization register.

CYPRUS – CENSUS OF AGRICULTURE 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>38 860</b>	<b>137 760</b>
Civil persons	38 390	123 610
An individual (sole holder holdings) <sup>2</sup>	38 390	123 610
Juridical persons (legal entities)	470	14 150

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>38 860</b>	<b>118 400</b>
Legal ownership and owner-like possession (owned land)	34 860	54 580
Rented from others(land rented)	6 260	61 070
Other form of tenure (shared farming or other modes)	1 300	2 750

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>38 860</b>	<b>118 400</b>
Holdings without UAA	490	
Holdings with UAA	38 370	118 400
Less than 2 ha	28 710	18 980
2–4.99 ha	5 620	17 390
5–9.99 ha	2 030	13 890
10–19.99 ha	1 010	13 980
20–29.99 ha	370	8 860
30–49.99 ha	290	10 960
50–99.99 ha	220	14 570
100 ha and over	120	19 770

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>38 860</b>	<b>137 760</b>
UAA	38 370	118 400
Arable land	15 870	84 870
Land temporarily fallow	7 280	9 460
Land under permanent crops	35 620	31 340
Permanent meadows and pastures	250	2 140
Kitchen garden	810	40
Other land	19 930	19 370
Wooded area	1 110	870
Unutilised agricultural land and other areas	19 510	18 500

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>38 860</b>	<b>118 400</b>
Male	30 850	107 040
Female	8 010	11 360

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>39 340</b>
Male	19 040
Female	20 300

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>82 040</b>
Male	50 460
Female	31 580
Family labour force	77 730
Male	47 230
Female	30 510
Regular non-family labour force	4 310
Male	3 230
Female	1 080

MANAGERS BY SEX AND AGE <sup>5</sup>	
	Number
<b>Total</b>	<b>38 860</b>
Male	30 850
Female	8 010
Less than 35 years	1 020
Male	830
Female	190
35–44 years	3 660
Male	2 890
Female	770
45–54 years	9 740
Male	7 870
Female	1 870
55–64 years	11 630
Male	9 170
Female	2 460
65 years and over	12 810
Male	10 090
Female	2 720

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>9 950</b>	
Cattle	280	53 410
Sheep	1 390	267 490
Goats	1 990	241 640
Pigs/swine	630	330 390
Equines (Equidae)	360	1 270
Poultry (1 000 head) <sup>6</sup>	7 790	3 220
Poultry – broilers	2 570	2 400
Laying hens	7 270	550
Others	5 940	270
Other animals		
Rabbits (breeding females)	3 980	24 910
Insects		
Bees (hives)	220	20 420

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>29 370</b>	<b>40 310</b>
<b>Holdings with irrigated area<sup>6</sup></b>	<b>28 190</b>	<b>28 290</b>
Surface	6 290	n.a.
Sprinkler	1 390	n.a.
Localized irrigation (drop irrigation)	24 250	n.a.

<sup>1</sup> Data source: Eurostat database – <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units.

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Additional data are provided by the Statistical Service of Cyprus.

<sup>6</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The first agricultural census (AC) in Georgia was conducted in 2004. The AC 2014 was the second AC, conducted in conjunction with the 2014 General Population Census (GPC).<sup>1</sup>

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis of the AC 2014 included:

- the Law on Official Statistics, adopted by the Parliament on 11 December 2009, which is the key piece of legislation regulating all phases of a census, from the methodological and organizational works to data processing and publication and dissemination of the final results.
- the Programme for the 2014 General Population Census of Georgia, approved by the Government Commission for Census Coordination on 8 May 2014.

### **Institutional framework and international collaboration**

The National Statistics Office of Georgia (Geostat) was the body responsible for conducting the AC and the GPC 2014. A specific Government Census Commission was set up according to Article 21 of the Law on Official Statistics.

Geostat received technical assistance for the AC 2014 from FAO and the U.S. Department of Agriculture (USDA).

### **Census staff**

More than 12 000 persons participated in the joint field data collection. The field staff included fieldwork coordinators, regional coordinators, municipal supervisors, sector supervisors, instructor-coordinators and enumerators (about 10 000 people).

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 October 2014, for inventory items such as land area operated, by land use categories and livestock numbers.

**Reference period:** the 12 months preceding the reference day of the AC (from 1 October 2013 to 1 October 2014), for flow items, such as use of agricultural products and the machinery used on the holding.

## 4. ENUMERATION PERIOD

The data collection was carried out in two phases:

- First phase: data collection for holdings in the household sector, which was carried out together with the GPC from 5 November to 19 November 2014.
- Second phase: data collection for holdings in the non-household sector (legal entities and municipalities), which was carried out from 2 March to 20 March 2015.<sup>2</sup>

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and livestock production) activities. Data on communal grazing land for all municipalities were also collected in the AC 2014.

The main **statistical unit** was the agricultural holding, defined as an economic unit engaged in agricultural production under single management without regard to size and legal status. An economic unit that operates agricultural land or permanent crop trees, but that during the reference year has no agricultural production, is also considered an agricultural holding. As the AC 2014 data collection for the agricultural holdings in the household sector was carried out jointly with the GPC, the common statistical unit was the agricultural production household. Two types of agricultural holdings were distinguished: family holdings and agricultural enterprises.

## 6. GEOGRAPHIC COVERAGE

The census covered both rural and urban areas of the country, excluding the territories outside the control of the Government of Georgia – the Abkhazian Autonomous Republic and Tskhinvali region.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No thresholds or other exclusions were applied in the AC 2014.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The AC 2014 was carried out using the classical approach, in two phases (see section 4).

<sup>1</sup> Four different censuses were carried out in the framework of the GPC 2014: (i) the Census of Dwellings, (ii) the Census of the Population, (iii) the Census of Emigrants, and (iv) the Census of Agriculture (household sector).

<sup>2</sup> The reference date and period used for the units from the non-household sector (during the second phase) were the same as those used for the holdings enumerated in the first phase of data collection.

**Frame**

In 2013, Geostat conducted preliminary fieldwork to establish the list of dwellings and households existing in Georgia. The information received from the preliminary fieldwork was used to update and finalize the census frame for data collection. For agricultural enterprises, to ensure full coverage of the list of potential agricultural enterprises, all existing reliable sources in the country were used.

**Complete and/or sample enumeration methods**

The AC 2014 was a complete enumeration of the agricultural holdings.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

For the household sector, the information was collected through face-to-face (door-to-door) interviews using paper questionnaires (PAPI method). For the non-household sector, data collection was done by self-interviewing using an online questionnaire (the computer-Assisted Web interviewing method or CAWI).

**Questionnaire(s)**

One questionnaire was used for the AC 2014 data collection, in both paper and electronic format. The AC 2014 questionnaire covered 15 of the 16 core items<sup>3</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

The CAWI method was used to collect information from legal entities (agricultural enterprises and municipalities). Geographic Information System (GIS) maps were used to support the field operations. Census results were disseminated and are accessible online. Geostat implemented a microdata archiving system to save the census data.

**10. DATA PROCESSING AND ARCHIVING**

For several months after the census enumeration, approximately 300 people worked on the digitalization of census data. They were permanently supervised by IT and other technical staff. In parallel, digitized questionnaires were compared with paper questionnaires by editors. Finally, data were cleaned by the appropriate division at the central office of Geostat. The data cleaning process used several methods. Data relating to large holdings were verified by telephone calls. In addition, different reliable sources (registers) were used to fill in missing data. Furthermore, donor imputation was used to fill in the missing values. For tabulation, a special software was prepared by Geostat. Geostat implemented a microdata archiving system to save the census data.

**11. CENSUS DATA QUALITY**

Geostat conducted a PES to assess the quality of the AC. During the fieldwork, Geostat used a six-level control system, which involved the following categories of census staff: field work coordinator, regional coordinator, municipal supervisor, sector supervisor, instructor-coordinator and enumerator.

**12. DATA DISSEMINATION**

The census results (including press releases, leaflets, tables with census results and census publications) were disseminated through the Geostat website,<sup>4</sup> including via interactive maps.<sup>5</sup> Printed census publications and leaflets were provided to government and private organizations, and other stakeholders throughout the country. Geostat conducted several presentations and meetings with main users.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

**Geostat.** 2015. *Agricultural Census in Georgia 2014*. Tbilisi, Georgia. (also available at [http://census.ge/files/results/agriculture/Agricultural\\_Census\\_2014.pdf](http://census.ge/files/results/agriculture/Agricultural_Census_2014.pdf)).

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Website: [www.geostat.ge](http://www.geostat.ge)

<sup>3</sup> The following item was not covered: "Other economic production activities of the holding's enterprise".

<sup>4</sup> The census results are available at <http://census.ge/en/results/agro-census>

<sup>5</sup> These are available at <http://gis.geostat.ge/geomap/agricultureen.html#8/42.334/43.380>

# GEORGIA – AGRICULTURAL CENSUS 2014 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>642 209</b>	<b>842 289</b>
Holdings without land	414	
Holdings with land	641 795	842 289
Civil persons	639 567	727 925
Juridical persons	2 228	114 364

LAND TENURE		
	Holdings	Area (ha)
<b>Total holdings with land</b>	<b>641 795</b>	<b>842 289</b>
Owned land	641 003	734 825
Rented land	16 407	107 464

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Total holdings with land</b>	<b>641 795</b>	<b>842 289</b>
1 parcel	297 716	137 588
2–3 parcels	247 926	331 446
4–5 parcels	72 568	207 076
6–9 parcels	21 309	101 013
10 parcels and over	2 276	65 165

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>642 209</b>	<b>842 289</b>
Holdings without land	414	
Holdings with land	641 795	842 289
Less than 0.1 ha	115 902	5 547
0.1–0.19 ha	67 338	9 029
0.20–0.49 ha	132 729	41 174
0.5–0.99 ha	152 921	104 645
1–1.99 ha	129 989	161 283
2–2.99 ha	22 238	22 674
3–3.99 ha	7 835	58 703
4–4.99 ha	3 490	51 094
5–9.99 ha	5 099	30 199
10–19.99 ha	1 743	118 356
20–49.99 ha	1 011	25 835
50–99.99 ha	546	15 030
100–199.99 ha	434	32 310
200–499.99 ha	393	37 546
500 ha and over	127	128 863

LAND USE		
	Holdings	Area (ha)
<b>Total with land</b>	<b>641 795</b>	<b>842 289</b>
Agricultural land	568 152	778 909
Arable land	527 683	365 707
Land under temporary crops	471 911	254 345
Land under temporary meadows and pastures	10 470	7 379
Land temporarily fallow	155 421	103 984
Land under permanent crops	272 046	109 567
Permanent meadows and pastures	82 799	303 634
Greenhouses	7 450	699
Non-agricultural land	612 372	62 681

HOLDINGS BY HOUSEHOLD SIZE		
	Number	
<b>Total</b>	<b>639 963</b>	
1 person	100 782	
2–3 persons	244 459	
4–5 persons	193 744	
6–9 persons	97 391	
10 persons and over	3 587	

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>639 963</b>	<b>727 925</b>
Male	441 787	574 781
Female	198 176	153 144

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		
	Number	
<b>Total</b>	<b>639 963</b>	
Male	441 787	
Female	198 176	
Under 25 years	6 171	
Male	4 741	
Female	1 430	
25–34 years	31 919	
Male	26 140	
Female	5 779	
35–44 years	74 008	
Male	60 168	
Female	13 840	
45–54 years	139 109	
Male	108 940	
Female	30 169	
55–64 years	164 471	
Male	117 570	
Female	46 901	
65 years and over	224 285	
Male	124 228	
Female	100 057	

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		
	Number	
<b>Total</b>	<b>2 238 095</b>	
Male	1 099 762	
Female	1 138 333	

HOLDINGS IN THE HOUSEHOLD SECTOR BY MAIN PURPOSE OF PRODUCTION		
	Holdings	Area (ha)
<b>Total</b>	<b>639 963</b>	<b>727 925</b>
Producing mainly for	<b>626 058</b>	<b>719 673</b>
Home consumption	492 154	310 667
Sale	133 904	409 006
No agricultural production	13 905	8 251

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>412 395</b>	
Cattle	271 118	989 386
Buffaloes	6 007	16 024
Sheep	19 962	943 998
Goats	6 868	45 330
Pigs/swine	93 914	213 087
Equines	25 081	34 689
Horses	20 525	28 112
Asses (donkeys) and mules	5 519	6 577
Poultry (1 000 head)	364 916	8 216
Chickens	358 618	7 564
Other poultry	94 188	652
Other animals	n.a.	
Rabbits	7 722	42 206
Insects		
Bees (hives)	14 074	163 859

## 1. HISTORICAL OUTLINE

India participated in the World Programme for the Census of Agriculture (WCA) 1930, 1950 and 1960 through sample surveys carried out by the Directorate of National Sample Surveys. The 1970/1971 Census is considered the first comprehensive agricultural census (AC) to be conducted in the country. Quinquennial ACs were successively undertaken in 1976/1977, 1980/1981, 1985/1986, 1990/1991, 1995/1996, 2000/2001 and 2005/2006. The ninth census in the series is the 2010/2011 AC, to which the metadata review and data presented here refer.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

ACs in India are conducted every five years and are coordinated by the Agriculture Census Division, Department of Agriculture, Cooperation & Farmers' Welfare, of the Ministry of Agriculture & Farmers' Welfare. In the AC, data collection is done through the retabulation of administrative land records and the household enquiry approach.

### *Institutional framework and international collaboration*

In India, the AC requires a high degree of coordination, technical expertise, statistical control and supervision over the states. The governments of state and Union Territories (UTs) are responsible for undertaking statistical operations in their respective administrations, and the central Government acts as a coordinating agency. The Steering Committee, consisting of various stakeholders and domain experts, provides guidance on technical and administrative issues relating to the implementation of the Agriculture Census Scheme.

The AC was funded entirely from the national budget.

### *Census staff*

The total number of census staff involved in the 2010/2011 AC was approximately 131 143 enumerators and 131 supervisors (HQ).

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 15 October 2011, for inventory items such as the number of cattle.

**Reference periods** used in the AC:

- Phase I and Phase II: agricultural year 2010–2011 (from July 2010 to June 2011);
- Phase III: agricultural year 2011–2012 (from July 2011 to June 2012).

## 4. ENUMERATION PERIOD

Data collection for the 2010/2011 AC was carried out according to the three phases of the census: (i) Phase I: July – September 2011 (listing and community – village – survey); (ii) Phase II: January – June 2012 (sample surveys on the agricultural characteristics of holdings); and (iii) Phase III: July – September 2012 (sample surveys on parcels, input use and livestock).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the operational holding, defined as an entity comprising all land that is used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others, without regard to the title, legal form, size or location. A technical unit was defined as the unit that is under the same management and has the same means of production, such as labour force, machinery, animals, credit, etc. The operated area includes both cultivated and uncultivated area, provided that a part of it is put to agricultural production during the reference period.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No exclusions.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The modular approach was used for data collection. The states in the country were grouped into two categories: states with land records (covering 91 percent of the country area); and states/UTs without land records (Punjab, although it is a land records state (LRS), followed the procedure for data collection envisaged in cases of states without land records). In states where the revenue agency maintains the record of ownership of holdings and regular crop inspections are carried out, these records were the basis for conducting Phase I of the census operations.<sup>1</sup> The census was conducted in three phases.

### *Frame*

The sampling frame for Phase II consisted of the operational holdings identified in Phase I, while the sampling frame for Phase III were 20 percent of the holdings selected in phase II.

<sup>1</sup> In non-land record States and UTs, a list of landholding households is prepared in 20 percent of villages, are same as those selected under the scheme for the Establishment of an Agency for Reporting of Agricultural Statistics (EARAS) for the reference year of the AC.

**Complete and/or sample enumeration methods**

In Phase I, all holdings in LRSs (covering 91 percent of total land area) were completely listed, while in states/UTs without land records, listing was conducted only on sample villages. In Phase II, all holdings in the sample villages in LRSs were enumerated. In all states, samples surveys were carried out in Phase III.

**Sample design (if sampling was used)**

Phase I in non-land record states/UTs and Phase II in all states: a one-stage sampling scheme was applied; a sample of 20 percent of villages (first-stage sample) and complete enumeration of households in selected villages of LRSs and 25 percent of households in non-LRSs were done.

Phase III, in all cases, is a two-stage sampling design according to which, in the first stage, villages are selected (7 percent of villages in each *tehsil*) and in the second stage, four holdings from each of the five size classes are sampled in the selected villages.

**Data collection method(s)**

Face-to-face interviews using paper questionnaires (the PAPI method) was applied in the census.

**Questionnaire(s)**

Three questionnaires were used, one for each of the three phases of the census:

- Phase I questionnaire, for collecting data on number and area of operational holdings, according to the prescribed size classes<sup>2</sup> for different social groups,<sup>3</sup> types of holdings<sup>4</sup> and gender.
- Phase II questionnaire, for collecting data on: (i) dispersal of holdings; (ii) tenancy and terms of leasing; (iii) land utilization; (iv) irrigation status and source-wise area irrigated; and (v) cropping pattern.
- Phase III questionnaire, for collecting additional data.

The AC 2011 questionnaires covered 12 items of the 16 core items<sup>5</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

In-house software was developed for data entry and processing of census data. Data entry, data validation and error correction, the generation of trial tables, and the generation of final tables and their examination by states or UTs took place according to the three phases of the census. All questionnaires were manually scrutinized by the statistical staff before they were submitted for data entry. Data are archived at *tehsil* level and are available in the public domain.

**11. CENSUS DATA QUALITY**

The data entry and processing software included checks of census data for inconsistencies and mismatch.

**12. DATA DISSEMINATION**

Census data are compiled at the national and *tehsil* level. The All India Report of Agriculture Census 2010–2011 is based on the data collected during Phase-II of the Census. The detailed data of AC 2010/2011 results are available on the website of the Department of Agriculture, Cooperation & Farmers' Welfare.

**13. DATA SOURCES**

**Department of Agriculture, Cooperation & Farmers' Welfare, Ministry of Agriculture & Farmers' Welfare.** 2015. *All India Report on Agriculture Census 2010-11*. New Delhi, India. (also available at <http://agcensus.nic.in/document/ac1011/reports/air2010-11complete.pdf>).

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

**National Informatics Centre.** 2019. *Agricultural census data base* [online]. New Delhi. [Cited 26 July 2019]. <http://agcensus.dacnet.nic.in/DatabaseHome.aspx>

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<sup>2</sup> Marginal, Small, Semi-Medium, Medium, Large.

<sup>3</sup> Scheduled Castes, Scheduled Tribes, Others.

<sup>4</sup> Individual, Joint, Institutional.

<sup>5</sup> The exceptions were: (i) "Presence of aquaculture on the holding", (ii) "Other economic production activities of the holding's enterprise", (iii) "Number of animals on the holding for each livestock type", (iv) "Presence of forests and other woodland on the holding".



# INDIA – AGRICULTURE CENSUS 2010/2011– MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>138 348 000</b>	<b>159 592 000</b>
Civil persons	138 110 000	158 050 000
Individual holdings	118 592 000	130 854 000
Joint holdings	19 518 000	27 196 000
Juridical persons	239 000	1 542 000

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>138 348 000</b>	<b>159 592 000</b>
Owned land	135 040 000	155 918 000
Partly owned and partly leased	1 856 000	2 133 000
Wholly leased	724 000	624 000
Other form of tenure	728 000	917 000

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>138 348 000</b>	<b>159 592 000</b>
Less than 1 ha	92 826 000	35 908 000
1–2 ha	24 779 000	35 244 000
2–3 ha	9 649 000	23 164 000
3–4 ha	4 247 000	14 540 000
4–5 ha	2 431 000	10 762 000
5–7.5 ha	2 511 000	15 129 000
7.5–10 ha	933 000	7 937 000
10–20 ha	799 000	10 489 000
20 ha and above	174 000	6 418 000

LAND USE		
	Holdings	Area (ha)
<b>Total area of holdings</b>	<b>138 348 000</b>	<b>159 592 000</b>
Cultivated land	n.a.	152 793 000
Sown area	n.a.	141 279 000
Land temporarily fallow	n.a.	11 514 000
Uncultivated land	n.a.	4 742 000
Non-agricultural land including forest area	n.a.	2 056 000

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>138 109 900</b>	<b>158 049 900</b>
Male	120 427 100	141 540 400
Female	17 682 800	16 509 600

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE	
	Number
<b>Total</b>	<b>138 109 900</b>
Male	120 427 100
Female	17 682 800
18–30 years	4 826 000
31–40 years	17 433 200
41–50 years	46 563 800
51–60 years	45 822 000
61–65 years	14 552 200
66 years and over	8 912 700

HOLDINGS BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>138 109 900</b>
3 persons	37 362 700
4–6 persons	70 322 800
7–9 persons	25 251 000
10–12 persons	3 778 400
13–15 persons	875 400
16–19 persons	327 500
20 persons and over	192 000

LIVESTOCK	
	Head
Cattle	201 633 900
Buffaloes	96 725 900

IRRIGATION BY LAND USE TYPES		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>71 721 000</b>	<b>64 567 000</b>
Land under temporary crops	37 468 751	62 150 760
Land under permanent crops	34 252 249	2 416 240

SOURCES OF IRRIGATION WATER		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>71 721 000</b>	<b>64 567 000</b>
Canals	18 414 000	16 908 000
Tanks	4 180 000	2 248 000
Wells	14 101 000	11 917 000
Tubewells	31 722 000	29 165 000
Other sources	6 046 000	4 329 000

MACHINERY AND EQUIPMENT USED ON THE HOLDING	
	Holdings
Total tractors of all kinds	61 133 000
Combine harvesters	2 795 900
Other (machine-powered)	n.a.
Sprayer	13 152 200
Diesel engine pumpset	30 081 900
Electric pumpset	22 760 700
Power tiller	7 953 900
Thresher	17 110 600
Chaff cutter	5 551 400
Cane crusher	588 100
Cultivator	11 204 600
Rotavator	4 411 700
Sheller	1 465 400
Self-propelled reaper	1 262 700

## 1. HISTORICAL OUTLINE

The first census of agriculture (CA) of Indonesia was conducted in 1963 and, ever since then, every tenth year; therefore, in 1973, 1983, 1993, 2003 and 2013. The CA 2013, to which the metadata review and data presented here refer, was the sixth census of agriculture to be conducted in Indonesia.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA 2013 legislation includes:

- Statistics Law No. 16 of 1997. Censuses taken in Indonesia are governed by the Statistics Law, which establishes that Badan Pusat Statistik Indonesia (BPS or Statistics Indonesia) must carry out three types of censuses every ten years: population, agricultural and economic censuses.
- Government Regulation No. 51 (1999) on Administering Statistics. The Regulation states that population censuses are conducted in years ending in 0, agricultural censuses in years ending in 3 and economic censuses in years ending in 6.
- Presidential Regulation of the Republic of Indonesia No. 86 (2007) on BPS-Statistics Indonesia.
- Chief Statistician Decision of BPS-Statistics Indonesia Regional Office.
- Chief Statistician Regulation of BPS-Statistics Indonesia No. 7 (2008) on the organization and working procedure of BPS-Statistics Indonesia.

### **Institutional framework and international collaboration**

BPS was the office responsible for technical and administrative matters, including planning, organization, fieldwork, data processing, presentation and analysis of CA results. A steering committee was formed, involving members from different ministries or institutions. The technical committee was formed by the second- and third-level authorities of those entities. The CA 2013 was funded by the Indonesian National Budget.

### **Census staff**

Overall, 246 412 persons were involved in the CA fieldwork as enumerators and team coordinators.

## 3. REFERENCE DATE AND PERIOD

### **Reference days:**

- 1 May 2013, for inventory items such as number of livestock;
- the day of enumeration, for holder's household characteristics, land tenure and land use, etc.

### **Reference periods:**

- one year preceding the census date, for harvested area, production, related costs and expenses, income, crops, agricultural practices etc.
- five years prior to the census date, for land conversion items.

## 4. ENUMERATION PERIOD

The complete enumeration under the CA 2013 was conducted from 1 May 2013 to 31 May 2013. The data collection for specific households sample surveys, as a continuation of the CA 2013, was carried out up to July 2014.<sup>1</sup>

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural production (crop and livestock), aquaculture, capture fisheries and forestry activities. The activities covered by the census were classified into six subsectors: "food crops", "horticulture crops", "estate crops", livestock, fishery and forestry.

The **statistical unit** was the agricultural holding, defined as an activity producing agricultural products with the aim of partially or completely selling or exchanging the products, except when food crops were exclusively for self-consumption. In general, two types of holdings were covered in the household sector: agricultural production households ("household agricultural holding") and other households ("non-agricultural households").

## 6. GEOGRAPHIC COVERAGE

The enumeration was conducted in all regions of Indonesia, in both urban and rural areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No threshold was used, except for the Cost Structure Survey, which was a household survey.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

For the collection of data in the CA 2013, the classical approach was adopted.

<sup>1</sup> The data were collected in several stages. The first stage was a complete enumeration of agricultural households, conducted in May 2013. In the second stage, detailed data on agricultural household income were collected in November 2013. From the end of May 2014 to the end of July 2014, the cost structure of production was collected by subsector (food crops, horticulture crops, estate crops, livestock, fishery and forestry).

As part of the census program, three household sample surveys were carried out after the CA 2013 data collection: (i) the Agricultural Household Income Survey, in 2013; (ii) the Agricultural Households Sub-sector Survey, in 2014; and (iii) the Survey of Forestry Households in 2014. All of these surveys were carried out only in the household sector.

#### **Frame**

The 2010 Population Census (PC) was used as a frame to identify the households engaged in agriculture in both urban and rural areas. The sampling frame for aquaculture was the list of aquaculture households for each subdistrict and each type of fish (for rising, hatchery, and ornamental fish).

#### **Complete and/or sample enumeration methods**

The CA 2013 applied two methods of data collection. The first was by complete enumeration (door-to-door) for the agricultural concentration area. The other was the snowball method, used to collect data from the household agricultural holdings in urban areas that belong to the agricultural non-concentration areas.

#### **Sample design (if sampling was used)**

The snowball method (a non-probability sampling technique) was used in urban areas with a majority of non-agricultural businesses.

#### **Data collection method(s)**

Information was collected in paper questionnaires filled through face-to-face interviews (PAPI method).

#### **Questionnaire(s)**

The listing of households engaged in the agricultural sector was conducted using the ST2013-P form (“door-to-door” and “snowball”). The census questionnaire used the ST2013-L form. Other specific questionnaires were used for collecting information in subsequent surveys as part of the CA 2013 programme: (i) the Agricultural Household Income Survey, in 2013 (ST2013-SPP.S form); (ii) the Agricultural Households Sub-sector Survey, in 2014; and (iii) the Survey of Forestry Households in 2014 (ST2013-SKH form).

The CA 2013 questionnaire covered all 16 core items recommended for the WCA 2010 round.

## **9. USE OF TECHNOLOGY**

Scanners were used to capture the data and the SMS gateway was used in quality monitoring. Census results were disseminated and are accessible online.

## **10. DATA PROCESSING AND ARCHIVING**

Data processing for the ST2013-P form was conducted at BPS branch offices in each province. For the ST2013-L form, data processing was supported by data capture scanning technologies. It was performed at all provincial and district/municipalities offices (from June to December 2013).<sup>2</sup> For the Agricultural Household Income Survey, editing and coding were conducted at BPS branch offices in all districts/municipalities, while scanners captured data from questionnaires at all provincial offices. Meanwhile, for the Agricultural Households Sub-sector Survey, editing/coding was performed at BPS branch offices in all districts/municipalities, and data entry was conducted at all provincial offices (the forms were not scanned).

## **11. CENSUS DATA QUALITY**

PES was conducted immediately after the completion of the data collection process and independently from the census enumeration. This survey sought to determine the level of coverage accuracy, the level of content accuracy in the implementation of the CA 2013, and to facilitate the use of census data by giving deeper insights on the quality and limitations of census data.

## **12. DATA DISSEMINATION**

The 2013 CA results were disseminated through printed publications and the BPS website.<sup>3</sup>

Microdata access can be requested from BPS (SILASTIK) through its website.<sup>4</sup>

## **13. DATA SOURCES**

**Statistics Indonesia.** 2015. Census of agriculture 2013. In: *Indonesia’s Research Repository* [online]. Jakarta, Indonesia. [Cited 5 September 2019]. <https://www.neliti.com/publications/48485/census-of-agriculture-2013-national-figures-of-estate-crops-cultivation-househol>

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<sup>2</sup> All data processing used a particular network system in the processing centre. This network system was made for census data processing purposes only. It was separated from local and other networking, so as to prevent the large data traffic that could slow down data processing.

<sup>3</sup> The online version of the results of the CA 2013 is available at: <https://st2013.bps.go.id>

<sup>4</sup> Microdata access can be requested at: <https://silastik.bps.go.id/v3/index.php/site/login/>

# INDONESIA – CENSUS OF AGRICULTURE 2013 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>26 135 469</b>	<b>n.a.</b>

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES	
	Holdings
<b>Total</b>	<b>26 135 469</b>
Less than 0.1 ha	4 988 221
0.1–0.19 ha	3 522 248
0.2–0.49 ha	6 434 692
0.5–0.99 ha	4 393 894
1–1.99 ha	3 648 448
2–2.99 ha	1 584 732
3–3.99 ha	633 259
4–4.99 ha	358 040
5–9.99 ha	451 460
10–19.99 ha	94 898
20–49.99 ha	21 113
50–99 ha	3 328
100 ha and over	1 136

DISTRIBUTION OF HOLDERS, BY SEX AND AGE	
	Number
<b>Total</b>	<b>26 135 469</b>
Male	23 313 702
Female	2 821 767
Under 15 years	1 948
Male	1 680
Female	268
15–24 years	182 786
Male	171 102
Female	11 684
25–34 years	2 979 489
Male	2 855 343
Female	124 146
35–44 years	6 803 387
Male	6 399 403
Female	403 984
45–54 years	7 361 767
Male	6 613 292
Female	748 475
55–64 years	5 311 111
Male	4 516 727
Female	794 384
65 years and over	3 494 981
Male	2 756 155
Female	738 826

HOLDINGS BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>26 135 469</b>
1 person	1 134 420
2–3 persons	9 666 272
4–5 persons	11 132 939
6–9 persons	3 931 472
10 persons and over	270 366

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>14 738 285</b>	
Cattle	n.a.	12 831 303
Sheep	n.a.	3 837 262
Goats	n.a.	13 671 635
Pigs/swine	n.a.	6 281 926
Horses	n.a.	174 209
Poultry (1 000 head)	n.a.	n.a.
Chickens	n.a.	1 498 123
Ducks	n.a.	28 327
Turkeys	n.a.	52
Geese	n.a.	434
Other poultry (pigeons)	n.a.	1 067
Other animals	n.a.	n.a.
Rabbits	n.a.	671 218

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	n.a.	n.a.
Rice	14 147 942	9 447 853
Maize	5 057 532	2 161 491
Sorghum	8 089	1 255
Wheat	204	53
Taro	194 103	17 223
Oilseed crops	n.a.	n.a.
Soya beans	671 774	186 266
Peanut	1 337 388	302 667
Root/tuber crops	n.a.	n.a.
Cassava	2 895 867	705 765
Sweet potatoes	866 814	108 934
Garlics	15 238	1 599

PERMANENT CROPS	
	Holdings
<b>Total</b>	<b>n.a.</b>
Tropical and subtropical fruits	n.a.
Bananas	5 409 875
Mangoes	2 315 270
Papayas	466 903
Citrus fruits	n.a.
Oranges	554 432
Beverage crops and spice crops	n.a.
Gingers	316 029
Chilies	1 641 230

## 1. HISTORICAL OUTLINE

The first Census of Agriculture (CA) in the country was conducted in 1973, followed by CAs conducted in 1988, 1993 and 2003. The CA 2014, to which the metadata review and main results refer, is the last CA to be conducted by the country.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

On the basis of the law and regulations of the National Statistical System of Iran (NSS), the Statistical Centre of Iran (SCI) is responsible for conducting the CA every ten years, in collaboration with the Ministry of Jihad-e-Agriculture (MJA).

### *Institutional framework and international collaboration*

The SCI was responsible for designing and implementing the CA 2014, as well as for data processing and for publishing the census results. The MJA and provincial governors' offices were responsible for collaborating to prepare and implement the census, and for collecting the census data. The national government provided the funds for conducting the CA. The total budget for conducting the CA 2014 was of approximately USD 15 million.

### *Census staff*

The technical staff involved in the CA 2014 comprised 1 835 supervisors and 5 549 enumerators. In addition, the technical census staff included 4 942 people.<sup>1</sup>

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of enumeration, for inventory items, such as the number of livestock.

**Reference period:** the crop year (from September 2013 to September 2014), for crops, etc.

## 4. ENUMERATION PERIOD

The CA 2014 was carried out from 27 September to 9 November 2014.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and livestock production) activities. A community survey (using a village questionnaire) was conducted jointly with the CA 2014.

The **statistical unit** of the CA is the agricultural holding – an agricultural production unit, which includes all agricultural activities run under a single management. This unit is managed by the members of one or more households (natural persons) or by a company or a public institution (legal entity). The thresholds established for the holdings are listed in section 7.

## 6. GEOGRAPHIC COVERAGE

The entire country was covered by the CA 2014 (urban and rural areas).

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were used to define the holding (at least):

- 400 m<sup>2</sup> (0.04 ha) of arable land;
- 200 m<sup>2</sup> (0.02 ha) of orchards and nurseries;
- one large livestock;
- two small livestock; or
- ten chickens or any other types of poultry.

No cut-off limits were used for activities related to greenhouses, apiculture, aquaculture and sericulture.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The census was conducted using the classical approach.

### *Frame*

A listing operation was undertaken to identify the holdings in the household sector and in the non-household sector. Rural areas were divided into two parts: (i) rural areas with important agricultural activities and (ii) rural areas without important agricultural activities (having less than 6 percent of agricultural holdings). The distinction between those two types of areas was made on the basis of the results of the CA 2003.

In the first case, the enumerator was responsible for conducting the listing, based on which the holder households were identified. In rural areas without important agricultural activities, the list of agricultural holdings was updated by the local authorities (trustees). A similar approach was used for urban areas.

<sup>1</sup> The technical staff included: technical and training deputy, executive director in the province, vehicle drivers, etc.

**Complete and/or sample enumeration method(s)**

A complete enumeration was used in the CA.

**Sample design**

No sampling was applied.

**Data collection method(s)**

Enumerators filled in the census questionnaire for all agricultural holdings through face-to-face interviews. For the first time in the census history of Iran, the CA 2014 was carried out using CAPI (with tablets).

**Questionnaire(s)**

Four types of listing forms (specific for different types of units) were used to identify the holdings. Two census questionnaires were used to collect census data: (i) the holding questionnaire and (ii) the village questionnaire.

The CA 2014 covered 11 of the 16 core items recommended by FAO for the WCA 2010.<sup>2</sup>

**9. USE OF TECHNOLOGY**

The CAPI method (with tablets) was used to collect census data. Mapping software was used in the tablet for determining the enumerators' working area. The census results were disseminated and are accessible on-line.

**10. DATA PROCESSING AND ARCHIVING**

Data entry was done by the enumerators using tablets. Data editing in a web-based system was done by experts. The SCI applied imputations to improve the quality of the census data.

**11. CENSUS DATA QUALITY**

The SCI monitored all phases of the census. Online daily reports of census progress from all executive levels were provided to the SCI. The SCI conducted a PES to evaluate the census results. The use of tablets for data capture resulted in increased accuracy of the collected data.

**12. DATA DISSEMINATION**

The census results were disseminated through printed publications and electronic means.

The census data at national and provincial level are available online on the SCI's website.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

**Statistical Centre of Iran.** 2019. National Census of Agriculture – 2014. In: *Statistical Centre of Iran* [online]. Tehran, Iran. [Cited 26 July 2019]. <https://www.amar.org.ir/english/Census-of-Agriculture>

**14. CONTACT**

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Website: <http://www.amar.org.ir>

<sup>2</sup> The following core items were not covered by the CA 2014: (i) "Household size"; (ii) "Main purpose of production of the holding"; (iii) "Land tenure types on the holding"; (iv) "Presence of forest and other wood land on the holding"; and (v) "Other economic production activities of the holding's enterprise".

## IRAN (ISLAMIC REPUBLIC OF) – CENSUS OF AGRICULTURE 2014 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>4 032 467</b>	<b>16 476 609</b>
Civil persons	4 023 439	n.a.
Juridical persons	9 028	n.a.

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>4 032 467</b>	<b>16 476 609</b>
Holdings without land	673 058	
Holdings with land	3 359 409	16 476 609
Less than 1 ha	1 238 159	403 061
1 - 5 ha	1 276 221	2 813 403
5 - 20 ha	680 699	5 987 737
20 - 50 ha	129 265	3 548 277
50 ha and above	35 065	3 724 131

IRRIGATION BY LAND USE TYPES		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>2 668 979</b>	<b>7 619 219</b>
Land under temporary crops	1 687 204	5 996 635
Horticulture land	1 550 539	1 622 584

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	695 526	4 231 993
Buffaloes	16 001	106 517
Sheep	881 271	31 420 569
Goats	657 371	12 333 273
Camels	12 597	108 584

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	n.a.	12 990 240
Wheat	1 330 467	6 475 643
Barley	716 236	2 070 292
Rice	420 441	383 013
Other crops	1 133 057	2 629 299

## 1. HISTORICAL OUTLINE

The census of agriculture and forestry (CAF) in Japan was first conducted in 1950, in accordance with the World Programme for the Census of Agriculture 1950. Census data collection for the forestry has been conducted since 1960. Since the CAF 2005, censuses of agriculture and forestry have been conducted every five years. The CAF 2015, to which the metadata review and data presented here refer, is the fourteenth census data collection to be conducted for agriculture and the eighth for forestry.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The census was undertaken under the provision of the following acts:

- the Statistics Act, approved by the Cabinet (Order No. 334 of 2008);
- Ordinance of the Ministry of Agriculture, Forestry and Fisheries No. 39 of 1969 on the Census of Agriculture and Forestry;
- Ministry of Agriculture, Forestry and Fisheries (MAFF) Notice No. 1071 of May 20, 2004.

### **Institutional framework and international collaboration**

The CAF is organized and undertaken by MAFF. The national government consigns the conduct of the CAF to prefectures and municipalities, which are local government organizations. MAFF designed the CAF, developed the census forms and guidelines, supervised the prefectures and local statistics offices, tabulated the nationwide CAF results, and documented the reports. The census was funded through the national budget.

### **Census staff**

Operations involving the CAF were carried out by a staff of 14 persons within the Statistics Department, Management and Structure Statistics Division, Census Statistics Office, under the Minister's Secretariat. Approximately 150 000 enumerators and 11 000 supervisors were engaged in the census operations to collect data from the agricultural and forestry management entities (for holding-level data collection). Sixty-nine regional centres and 38 branch offices were in charge of conducting and inspecting the survey of rural areas (for community-level data collection).

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 February 2015, for inventory items, such as livestock numbers.

**Reference period:** the past year (from 1 February 2014 to 31 January 2015), for farm workforce, land use, forestry items, etc.

## 4. ENUMERATION PERIOD

Field operations were carried out: (i) from 15 December 2014 to the end of February 2015, for the enumeration of agriculture and forestry management entities (AFMEs); and (ii) from 1 April to the end of June 2015, to collect data on rural areas from the municipalities and rural communities.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and animal production) activities.

The main **statistical unit** was the AFME, defined as the entity that produces agriculture or forestry products or are engaged in agriculture or forestry operations under consignment agreements with the land area/number of head of livestock for their production/operations are above a certain size. The AFMEs were divided into: agriculture management entities (AMEs)<sup>1</sup> and forestry management entities (FME). In turn, among AMEs two types of entities were distinguished: family-owned farm management entities and organized management entities.

Along with the holding-level data collected from the AFMEs, the CAF collected information on rural areas from the municipalities and rural communities.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were established for the AFMEs:

- farming in which the cultivated land under management is over 30 ares (0.3 ha);
- farming above any of the following limits: (i) planted area for outdoor grown vegetables: 15 ares, (ii) cultivated area for greenhouse grown vegetables: 350 m<sup>2</sup>; (iii) cultivated area for fruit trees: ten ares; (iv) cultivated area for outdoor green flowers: ten ares; (v) cultivated area for greenhouse grown flowers: 250 m<sup>2</sup>; (vi) number of milking cows: one head; (vii) number of fattening cattle: one head; (viii) number of pigs: 15 head; (ix) number of hens: 150 head; (x) number of broiler chickens shipped each year: 1 000 head; or (xi) others: total sales of farm products equivalent to 500 000 yen or more during the one-year period up to the day before the survey period;
- farming operating under a consignment agreement; and/or

<sup>1</sup> The census results presented in this publication concern the AMEs.



- those conducting forestry operations based on rights to carry out “silviculture” and deforesting (excluding acquisition for the sole purpose of deforesting standing trees and bamboo) for an area of forestland of 3 ha or more (hereafter referred to as “owned forest land”).

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was adopted for the CAF 2015.

### **Frame**

The census frame was built based on the list of AFMEs, which contains the names and addresses of individuals and organizations that are possible AFMEs.

### **Complete or/and sample enumeration methods**

Complete enumeration was used for the CAF 2015 data collection.

### **Sample design (if sampling was used)**

Not applicable.

### **Data collection method(s)**

The information from the AFMEs was collected using the self-enumeration method. The census questionnaires were dropped off at the respondents’ addresses and collected by the interviewers. For the survey of rural areas (municipalities) self-enumeration using the mail-out/mail-back method (via e-mail) was applied.<sup>2</sup>

Data collection for the survey of rural areas was conducted using the PAPI method.

### **Questionnaire(s)**

Three questionnaires were used for CAF data collection: (i) a questionnaire for agriculture and forestry management entities; (ii) a questionnaire for rural areas (municipalities); (iii) a questionnaire for rural areas (rural communities).

The CAF 2015 questionnaire covered 14 of the 16 core items<sup>3</sup> recommended for the WCA 2010 round.

## 9. USE OF TECHNOLOGY

Census results were disseminated and are accessible online.

## 10. DATA PROCESSING AND ARCHIVING

No information was provided in the census reports available.

## 11. CENSUS DATA QUALITY

Quality checks, strict field supervision and follow-up on non-respondents were used to assess census data quality.

## 12. DATA DISSEMINATION

The CAF results were disseminated through printed publications and online. A preliminary report for the CAF was released in November 2015, and the final report was published in March 2016. Details were released through sequential publications, in eight volumes.

## 13. DATA SOURCES

**Statistics of Japan.** 2017. Overview of the 2015 Census of Agriculture and Forestry. In: *Statistics of Japan* [online]. Tokyo, Japan. [Cited 5 September 2019]. [https://www.e-stat.go.jp/en/stat-search/files?page=1&layout=datalist&toukei=00500209&t-stat=000001032920&cycle=0&tclass1=000001077437&tclass2=000001097415&cycle\\_facet=cycle](https://www.e-stat.go.jp/en/stat-search/files?page=1&layout=datalist&toukei=00500209&t-stat=000001032920&cycle=0&tclass1=000001077437&tclass2=000001097415&cycle_facet=cycle)

## 14. CONTACT

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Website: <http://www.maff.go.jp/e/>

<sup>2</sup> Data collection on AFMEs and on rural areas was conducted through the MAFF network: (i) AFMEs: prefectures – municipalities – supervisors – enumerators; (ii) rural areas (municipality questionnaire): regional coordination centres – regional centres; (iii) rural areas (rural communities questionnaire): regional coordination centres – regional centres – enumerators.

<sup>3</sup> The exceptions were the following items: (i) “Presence of aquaculture on the holding”; and (ii) “Other economic production activities of the holding’s enterprise”.

JAPAN – CENSUS OF AGRICULTURE AND FORESTRY 2015 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>1 377 266</b>	<b>3 451 444</b>
Family-owned farm management entities	1 344 287	2 917 513
Commercial farm households	1 329 591	2 914 860
Organized management entities	32 979	533 931

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>1 377 266</b>	<b>3 451 444</b>
Holdings without cultivated land	16 089	
Holdings with cultivated land	1 361 177	3 451 444
Less than 5 ha	1 256 164	1 453 806
5–7.5 ha	36 194	217 611
7.5–10 ha	16 035	137 222
10–15 ha	16 569	199 032
15–20 ha	8 827	150 728
20–25 ha	6 057	134 227
25–30 ha	4 235	115 276
30–40 ha	5 958	203 310
40–50 ha	3 427	151 441
50–100 ha	6 121	406 602
100 ha and above	1 590	282 189

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		Number
<b>Commercial farm households managed by a household member</b>		<b>442 813</b>
Male		393 013
Female		49 800
Under 25 years		138
25–34 years		2 095
35–44 years		8 124
45–54 years		40 384
55–64 years		154 654
65 years and over		237 418
<b>Commercial farm households managed by more than one household member</b>		<b>879 560</b>
Male		840 921
Female		38 639

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total</b>		<b>4 880 368</b>
Male		2 431 439
Female		2 448 929
Engaged in agricultural activities on the holding		3 398 903
Male		1 869 899
Female		1 529 004

MANAGERS ON THE HOLDING, BY SEX		Number
<b>Total managers</b>		<b>1 666 805</b>
Male		1 509 191
Female		157 614
Family-owned farm management entities		1 344 287
Male		1 252 690
Female		91 597
Organized management entities		322 518
Male		256 501
Female		66 017

EMPLOYEES WORKING ON THE HOLDING		Number
<b>Total employees</b>		<b>1 676 606</b>
Male		902 661
Female		773 945
Permanent hired workers		220 152
Male		112 624
Female		107 528
Temporary hired workers		1 456 454
Male		790 037
Female		666 417

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	n.a.	3 692 102
Beef cattle	50 974	2 288 824
Dairy cows	18 186	1 403 278
Pigs/swine	3 673	7 881 616
Chickens (1 000 head)	n.a.	760 008
Hen	4 181	1 514 816
Broilers	1 808	6 085 260

MACHINERY AND EQUIPMENT BELONGING TO THE HOLDING		
	Holdings	Units
Tractors	1 040 405	1 394 047
Combine harvesters	596 117	631 247

TEMPORARY CROPS PLANTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>2 153 559</b>
Rice	952 684	1 313 713
Wheat	49 229	263 073
Other cereals	36 814	58 170
Potatoes	86 885	86 122
Beans	96 447	160 010
Vegetables	381 982	272 470

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) was carried out in Jordan in 1953, followed by ACs conducted in 1965, 1975, 1983 and 1997. The AC 2007, to which the metadata review and data presented in this publication refer, was the sixth AC to be conducted in the Hashemite Kingdom of Jordan.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The legal basis for the AC is provided by the General Statistics Law No. 12 of 2012. According to this law, the Department of Statistics of Jordan (DOS)<sup>1</sup> is authorized “to collect statistical information and data from respondents”. According to the law, censuses of agriculture (as well as other censuses) should be conducted at most once every ten years, on the dates set by the Council of Ministers.

### *Institutional framework and international collaboration*

The responsibility for conducting the AC 2007 was assigned to the DOS. The AC Preparatory Committee, Technical Committee and Higher Ministerial Committee in relation to census activities were established. In addition, during the preparatory stage, a Media Committee was established to raise awareness among the public and data users on the scope and objectives of the census. FAO provided technical support for the implementation of the AC 2007. The census was funded from the national budget.

### *Census staff*

The total number of census staff comprised approximately 700 employees, of which 379 were enumerators.<sup>2</sup>

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 August 2006, for the location of the holding and its parcels, demographic data, machinery and equipment used on the holding, number of livestock, etc.

**Reference period:** the agricultural year (from 1 August 2006 to 31 July 2007), for land use and cropped area, labour force, irrigation, agricultural fertilizers and pesticides, etc.

## 4. ENUMERATION PERIOD

The field data collection was conducted from 1 June to 30 September 2007.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crops and livestock production).

The **statistical unit** in the AC 2007 was the agricultural holding, defined as an economic unit for agricultural production under one management that includes all existing animals and all land, used in whole or in part for agricultural production purposes, regardless of ownership or legal form.<sup>3</sup>

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country, both rural and urban areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Only the holdings exceeding the following thresholds were covered by the AC 2007: a holder who owns 1 *dunum* (0.1 ha) or more of agricultural land; or any protected area; more than ten head of sheep, or ten goats, or both; one or more female cattle; one camel or more; five beehives or more; 30 or more domestic poultry; or an organized farm (such as cattle and poultry farms).

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was applied for conducting the AC 2007.

<sup>1</sup> The DOS was founded in 1949 and, soon after, the first General Statistics Law (No. 24 of 1950 and subsequent amendments) has been issued. The second relevant law was the Provisional General Statistical Law No. 8 of 2003, to regulate its work as an institution specialized in statistical work and to define its functions and responsibilities as the only governmental agency authorized to collect information and statistical data. The third and latest statistical act to be issued was General Statistics Law No. 12 of 2012 (see <http://dosweb.dos.gov.jo/laws-and-instructions/>).

<sup>2</sup> These were: (i) 6 coordinators; (ii) 22 inspectors/supervisors; (iii) 42 employees as support technicians; (iv) 60 observers; (v) 379 enumerators; (vi) 140 drivers; (vii) 12 liaison officers from the Ministry of Agriculture; (viii) 10 employees in the operating room; (ix) 19 employees administrative support services; (x) 10 information technology employees, etc.

<sup>3</sup> The same holding could be managed by one person or a household, two or more persons or two households. A clan or a tribe may run the management, or the holding may be managed by a legal entity, such as a company, a cooperative association or a government agency. The holding land may consist of one or more parts, situated in one locality, provided that all parts of the holding participate in the same means of production, such as labour, agricultural buildings, agricultural machinery and towing animals.

### **Frame**

The information collected in the Population Census 2004 with regard to the households engaged in agricultural activities was used as a frame for the holdings in the household sector in the AC 2007. For organized farms, the Ministry of Agriculture provided the list for the frame.

### **Complete or/and sample enumeration methods**

Complete enumeration was applied for the AC 2007.

### **Sample design (if sampling was used)**

Not applicable.

### **Data collection methods**

The census enumeration was performed through visits to all households, to identify units that fulfil the threshold criteria applied to define the agricultural holding. Data were collected from the agricultural holdings identified during the preliminary visit. Data collection was undertaken using Personal Digital Assistant (PDA) devices.

### **Questionnaire(s)**

A single questionnaire was used for data collection. The AC 2007 covered 13 of the 16 core items<sup>4</sup> recommended by the 2010 WCA.

## **9. USE OF TECHNOLOGY**

PDA's were used for census data collection (the CAPI method). Census results were disseminated and are accessible online.

## **10. DATA PROCESSING AND ARCHIVING**

Census data were collected using the CAPI method with PDA's. On a daily basis, the Technical Support Team of the DOS transferred the data from the PDA's to computers in the counting centres, and then transferred them electronically to the DOS census database. The data backup was done on CD-ROMs, as well as on hard disks, to ensure preservation. The data received from the counting centres was edited under the supervision of specialized technical personnel from the Census Administration.<sup>5</sup>

## **11. CENSUS DATA QUALITY**

Quality check was carried out at the end of the field data collection. The questionnaire contained some of the main items of the census questionnaire.

## **12. DATA DISSEMINATION**

Final results were published in September 2008. In order to facilitate users' access to AC results, the census data were disseminated through printed publication, CD-ROMs, and the DOS' website.

## **13. DATA SOURCES**

**Department of Statistics (DOS).** 2019a. Agricultural Census 2007. In: *DOS* [online]. Amman, Jordan. [Cited 5 September 2019]. <http://dosweb.dos.gov.jo/products/agricultural-census2007/>

**Department of Statistics (DOS).** 2019b. Agricultural Census. In: *DOS* [online]. Amman, Jordan. [Cited 5 September 2019]. <http://dosweb.dos.gov.jo/censuses/agriculture-census/>

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<sup>4</sup> The following core items were not covered by the CAC: (i) "Presence of aquaculture on the holding", (ii) "Presence of forest and other woodland on the holding"; (iii) "Other economic production activities of the holding's enterprise".

<sup>5</sup> Technical personnel from the census administration prepared the data tabulation plan during the preparatory stage, after approving the questionnaire in its final form. The information technology (IT) directorate was provided with the plan to design the programmes for extracting the results. These programmes were tested on the pre-test questionnaire. After completion of all electronic preparation processes, extraction of the tables commenced. The personnel concerned edited the output tables in terms of the consistency and logic of results, and to enable carrying out the necessary comparisons. The tables were also checked in relation to form and language, prior to approval in their final form.

# JORDAN – AGRICULTURAL CENSUS 2007 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>80 152</b>	<b>261 508</b>
Individual	72 508	198 731
Two or more individuals	2 673	8 764
Governmental	117	5 965
Company	191	16 014
Partners	2 904	16 463
More than one legal status	1 715	14 563
Other	44	1 008

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>80 152</b>	<b>261 508</b>
Holdings operated under one tenure form	78 211	239 662
Owned	76 166	216 978
Rented	1 973	22 568
Other form of tenure	72	116
Holdings operated under two or more tenure forms	1 941	21 846

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>80 152</b>	<b>261 508</b>
Holdings without land	1 626	
Holdings with land	78 526	261 508
Less than 0.2 ha	19 264	1 130
0.2–0.5 ha	14 925	4 423
0.5–1 ha	11 350	7 519
1–2 ha	11 905	15 462
2–3 ha	5 617	13 104
3–4 ha	5 582	18 234
4–5 ha	2 160	9 225
5–10 ha	3 969	25 995
10–20 ha	1 779	22 877
20–50 ha	1 147	32 872
50–100 ha	517	33 221
100–200 ha	202	25 358
200 ha and over	109	52 088

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>80 152</b>	<b>261 508</b>
Agricultural land	n.a.	225 348
Arable land	n.a.	142 958
Land under temporary crops	n.a.	99 485
Land under temporary meadows	n.a.	269
Land temporarily fallow	n.a.	43 204
Land under permanent crops	n.a.	81 305
Permanent meadows and pastures	n.a.	1 085
Forest	n.a.	1 241
Nurseries	n.a.	242
Other land	n.a.	34 677

HOLDERS IN THE HOUSEHOLD SECTOR, BY AGE	
	Number
<b>Total</b>	<b>79 226</b>
18–25 years	1 183
26–34 years	5 702
35–44 years	15 731
45–54 years	18 419
55–64 years	16 967
65 years and over	14 930
Unspecified age group	6 294

HOLDINGS BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>79 226</b>
1 person	2 023
2–3 persons	9 169
4–5 persons	14 918
6–9 persons	34 787
10 persons and over	6 663
Unspecified	11 666

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>129 822</b>
Male	121 344
Female	8 478
Family labour	109 034
Male	100 850
Female	8 184
Hired permanent labour	20 788
Male	20 494
Female	294

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>42 837</b>	
Cattle	4 005	88 215
Sheep	11 407	2 496 227
Goats	12 299	559 600
Equines	n.a.	11 776
Horses	n.a.	2 182
Mules	n.a.	389
Asses	n.a.	9 205
Camels	834	7 987
Poultry (1 000 head)	14 309	319
Chickens	9 415	172
Ducks	370	5
Geese	392	3
Turkeys	461	3
Others	3 671	137
Other animals	n.a.	
Rabbits	817	10 332
Insects		
Bees (hives)	470	16 475

HOLDINGS IN THE HOUSEHOLD SECTOR BY MAIN PURPOSE OF PRODUCTION		
	Holdings	Area (ha)
<b>Total producing for</b>	<b>80 152</b>	<b>261 508</b>
Home consumption	n.a.	39 708
Sale	n.a.	189 792
Home consumption and sale	n.a.	32 008

## 1. HISTORICAL OUTLINE

The Agricultural Census (AC) 2006/2007, to which the metadata review and data presented here refer, was the first AC to be carried out in Kazakhstan.

## 2. LEGAL BASIS AND ORGANIZATION

### ***Legal framework***

The legal basis of the AC 2006/2007 included:

- the Law on State regulation of the development of the agro-industrial complex and rural areas of 8 July 2005 No. 66; in accordance with the law, the agricultural census is conducted at least once every ten years;
- the Law on State Statistics of 7 May 1997, No. 257-IV;
- the Resolution of the Government of Kazakhstan of 10 November 2005 No. 1119 on the establishment of the Republican Commission and approval of the action plan for the AC; and
- the Resolution of the Government of Kazakhstan of 15 November 2006 No. 1081 on the approval of the rules and timing of the agricultural census.

### ***Institutional framework and international collaboration***

The institution responsible for the AC 2006/2007 was the Agency on Statistics, or AS (in 2014 it was transformed into the Committee on Statistics, or CS, of the Ministry of National Economy). To facilitate the implementation of the census, a Republican Commission for the AC was established in 2005. FAO provided technical assistance for census implementation.

### ***Census staff***

Approximately 40 000 census staff were involved in the AC. Of these, 29i t]

**Frame**

The list of agricultural enterprises and their separate subdivisions (legal entities) was established on the basis of the Statistical Agricultural Register. The lists of individual entrepreneurs were based on the Statistical Business Register. The lists of peasant farms and households in rural areas were formed on the basis of the household registers held by local authorities.

The lists of households, horticultural and cottage farms that have land and livestock (including poultry) in urban areas were formed on the basis of various data sources, such as data of land management agencies, land title registration authorities, taxpayer registries and other administrative sources.

**Complete and/or sample enumeration methods**

The AC used a complete enumeration method.

**Sample design (if sampling was used)**

Not applicable.

**Data collection methods**

Self-interviewing using paper questionnaires was applied to collect census data from legal units. Face-to-face interviews using the traditional PAPI method were applied to collect census data from the rest of the agricultural production units.

**Questionnaire(s)**

Specific questionnaires for each of the four main types of units (see section 5) were used in the AC: (i) three questionnaires for collecting information on crop production (in stage I); and (ii) three questionnaires for collecting information on animal husbandry (in stage II). In addition, one census questionnaire was applied to legal units and peasant farms engaged in support activities (services) to agriculture (in stage II).

The AC 2006/2007 covered 11<sup>1</sup> out of the 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Census results were disseminated online.

**10. DATA PROCESSING AND ARCHIVING**

Data entry was carried out manually. The paper census forms are kept in the territorial bodies and the electronic database is stored on the server of the AS (CS).

**11. CENSUS DATA QUALITY**

For quality assurance, a 10-percent selective check was conducted during the entire census data collection by the supervisors. After the census enumeration was completed, a field quality control was carried out to check the quality of census data, covering 5 percent of the census units.

**12. DATA DISSEMINATION**

The AC results were disseminated through printed reports, CD-ROMs and institutions' website. The preliminary census data (related to the first census stage) were disseminated in six volumes in 2007 (at the national and regional level). The final census results were disseminated in nine volumes in 2008.

**13. DATA SOURCES**

**Committee on Statistics, Ministry of National Economy of the Republic of Kazakhstan.** 2019. National agricultural census 2006–2007. In: *Ministry of National Economy of the Republic of Kazakhstan, Statistics Committee* [online]. Nur-Sultan, Kazakhstan. [Cited 13 September 2019]. [http://stat.gov.kz/census/national/agriculture2006\\_2007](http://stat.gov.kz/census/national/agriculture2006_2007)

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

**14. CONTACT**

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<sup>1</sup> The core items not covered in the AC are: (i) "Sex of agricultural holder"; (ii) "Age of agricultural holder presence of aquaculture on the holding"; (iii) "Household size"; (iv) "Presence of aquaculture on the holding"; and (v) "Other economic production activities of the holding's enterprise".

## KAZAKHSTAN – AGRICULTURAL CENSUS 2006/2007 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>2 956 306</b>	<b>79 725 500</b>
Household holdings	2 752 455	593 300
Peasant	194 306	38 340 500
Agricultural enterprises (legal entities)	9 545	40 791 700

AGRICULTURAL ENTERPRISES AND PEASANT FARMS, BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>203 851</b>	<b>79 132 200</b>
Holdings without land	3 175	
Holdings with land	200 676	79 132 200
Less than 5 ha	52 999	129 200
5–10 ha	27 480	186 100
10–20 ha	21 921	294 900
20–30 ha	10 406	246 300
30–40 ha	6 801	230 400
40–50 ha	5 278	232 500
50–100 ha	17 300	1 218 100
100–200 ha	17 359	2 400 100
200–500 ha	19 110	5 935 000
500–1 000 ha	9 850	6 704 700
1 000–5 000 ha	10 062	19 874 300
5 000–10 000 ha	1 075	7 238 400
10 000–20 000 ha	575	7 994 600
20 000 ha and over	460	26 447 600

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>2 956 306</b>	<b>79 725 500</b>
Agricultural land	2 700 056	76 490 200
Arable land	2 102 321	24 143 700
Land under natural meadows	n.a.	2 345 500
Land under pastures	n.a.	46 525 300
Land under permanent crops	n.a.	43 700
Other (lode)	n.a.	3 432 100
Other land	n.a.	3 235 300

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>1 231 107</b>	
Cattle	944 967	5 660 400
Sheep	459 137	12 813 700
Goats	215 611	2 536 600
Pigs/swine	184 655	1 304 900
Horses	277 980	1 235 700
Camels	22 035	138 600
Poultry (1 000 head)	717 019	28 239
Chickens	n.a.	26 766
Geese	n.a.	593
Turkeys	n.a.	194
Ducks	n.a.	674
Other	n.a.	13

IRRIGATION	
	Area irrigated (ha)
<b>Total area irrigated</b>	<b>1 392 100</b>

MACHINERY AND EQUIPMENT BELONGING TO THE HOLDING		
	Holdings	Units
Total tractors of all kinds	70 764	146 569
Combine harvesters	13 042	41 325

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>2 083 237</b>	<b>18 328 900</b>
Cereals	154 918	14 812 900
Wheat	39 862	12 430 900
Rice	789	87 900
Barley	16 201	1 782 200
Maize	105 267	90 900
Oats	1 395	163 200
Rye	277	44 600
Millet	3 407	75 300
Buckwheat	620	91 700
Other cereals	n.a.	46 200
Leguminous crops	n.a.	32 000
Peas	n.a.	24 500
Other leguminous	n.a.	7 500
Vegetables and melons	n.a.	172 200
Cabbages	638 403	11 500
Tomatoes	1 307 362	23 200
Cucumbers	1 063 781	12 200
Carrots	749 417	10 500
Pumpkin	157 099	4 400
Onions	375 661	14 800
Watermelons	107 466	30 100
Other vegetables	n.a.	65 500
Oilseed crops	n.a.	747 500
Sunflower	43 519	497 500
Soya beans	2 258	46 400
Safflower	6 231	77 300
Rapeseed	218	122 100
Musterseeds	45	4 200
Root/tuber crops	n.a.	n.a.
Potatoes	1 478 608	141 700
Sugar crops	n.a.	n.a.
Sugar beet	n.a.	14 400
Other temporary crops	n.a.	n.a.
Flax	15	5 100
Cotton	n.a.	200 300
Tobacco	n.a.	6 500
Grasses and other fodder crops	n.a.	2 236 400
Temporary grass	n.a.	179 900
Permanent grass	n.a.	1 977 900
Other	n.a.	78 600

PERMANENT CROPS		
	Holdings	Area (ha)
<b>Total</b>	<b>1 336 311</b>	<b>43 700</b>
Fruits, nuts and berries	n.a.	33 446
Apples	902 422	21 702
Pears	236 870	1 811
Plums	283 234	1 225
Apricot	199 598	1 803
Other fruits and nuts	n.a.	1 754
Berries	555 593	3 188
Cherries and sour cherries	564 794	1 963
Vineyards (grapes)	248 070	9 481
Vine grapes	17 104	6 938
Table grapes	234 268	2 543



## 1. HISTORICAL OUTLINE

The Republic of Korea participated in the decennial WCA, with agricultural censuses being conducted every ten years from 1960 to 1990 (in 1960, 1970, 1980 and 1990). Starting in 1995, agricultural censuses in Korea are undertaken every five years.<sup>1</sup> Starting in 2010, three censuses were consolidated into a single census, the Census of Agriculture, Forestry and Fisheries (CAFF), with a periodicity of five years. In addition, the Rural Community Survey, implemented since 1980, was carried out concurrently with the CAFF 2015.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The CAFF 2015 was carried out according to:

- the Statistics Act, wholly amended by Act No. 12844 of 19 November 2014, with further amendments;
- Designated statistics (Approval No. 10141);
- the Regulation of the Agriculture, Fishery and Forestry Census (Ordinance No. 502 of the Ministry of Strategy and Finance); and
- the Statistics Act (Article 5-3), on conducting the survey; according to Article 32, every citizen is required to answer the questions to the best of their knowledge.

### *Institutional framework and international collaboration*

The CAFF 2015 was conducted under the authority of Statistics Korea and was executed through the local administration channel. The National Statistics Committee, the official statistical advisory body, deliberated the entire process. As a result, Statistics Korea organized a Committee of Experts, composed of representatives of government agencies and research institutes, to accomplish advisory functions in relation to the determination of survey items and census procedures.

### *Census staff*

The CAFF fieldwork was carried out by 21 000 enumerators, temporarily recruited, under the supervision of 2 400 census officials from Statistics Korea and local governments.<sup>2</sup>

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 December 2015 (“zero hour”), for items such as possession of land, livestock numbers and fishing vessels.

### *Reference periods:*

- the year preceding the census (from 1 December 2014 to 30 November 2015), for items on forestry and fishing activities, crops, sales amounts, etc.
- the preceding five years (from 1 December 2010 to 30 November 2015), for some forestry-related items.

## 4. ENUMERATION PERIOD

The field data collection took place from 1 December to 15 December 2015.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production), forestry and fishery (aquaculture and capture fisheries activities). A community survey was carried out together with the CAFF 2015.

The following **statistical units** were distinguished in the CAFF: (i) the “agricultural household”;<sup>3</sup> (ii) the “forestry household”; (iii) the “inland water fishery household”; and (iv) the “marine fishery household”.

The *agricultural household* was defined as a household directly engaged in agricultural activities and that meets the established thresholds, as specified in section 7.

## 6. GEOGRAPHIC COVERAGE

The CAFF covers the entire area within the scope of the administrative jurisdiction of the Republic of Korea<sup>4</sup>.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were applied for the agricultural households:

- a household directly cultivating an area of at least 0.1 ha of arable land, or land under permanent crops, at the time of enumeration (1 December 2015);
- a household of which sales of produced agricultural (crop or livestock) products amounted to at least KRW<sup>5</sup> 1.2 million during the reference year (1 December 2014 – 30 November 2015);
- a household raising livestock worth at least KRW 1.2 million at the time of enumeration (1 December 2015).

Companies, associations and other legal entities were not included in the CAFF.

Specific thresholds were also established for forestry households, inland water fishery households and marine fishery households.<sup>6</sup>

<sup>1</sup> Since 2000, the Agricultural Census was integrated with the Fishery Census (and conducted simultaneously). Since 2005, the Agricultural Census was integrated with the Fishery Census and the Forestry Census (conducted simultaneously).

<sup>2</sup> To be qualified as an enumerator, one had to be 18 years old or more, sincere and devoted to census-taking and, if possible, have gained experience as an enumerator in the 2015 Population and Housing Census and reside within the enumeration district (ED).

<sup>3</sup> The census results presented in the current publication concern agricultural households.

<sup>4</sup> Ri (Administrative division).

<sup>5</sup> Korean won.

<sup>6</sup> For more details on forestry households, inland water fishery households and marine fishery households, refer to: <http://kosis.kr/publication/publicationThema.do>

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used for the data collection of the 2015 CAFF.

### **Frame**

The 2015 CAFF used the enumeration districts (EDs) of the Population and Housing Census (PHC) 2015.

### **Complete and/or sample enumeration methods**

The 2015 CAFF was conducted on a complete enumeration basis.

### **Sample design (if sampling was used)**

Not applicable.

### **Data collection methods**

Data collection from households was conducted using mainly the PAPI method. The CAWI method was also used, although to a lesser extent. The community survey was conducted using the CAWI method.

### **Questionnaire(s)**

Four questionnaires were used for data collection: (i) the agricultural and forestry household questionnaire; (ii) two questionnaires for the fishery sector (marine fisheries and inland water fisheries); and (iii) the rural community questionnaire.

The CAFF 2015 census questionnaires covered 14 of the 16<sup>7</sup> core items recommended for the WCA 2010 round.

## 9. USE OF TECHNOLOGY

The CAWI method was applied in the collection of community survey data and, to some extent, the collection of census data from households. Scanning technology (using Intelligent Character Recognition (ICR)) was applied for data capture of holdings' questionnaires. The census results were disseminated and are accessible online.

## 10. DATA PROCESSING AND ARCHIVING

To ensure accuracy and efficiency in data processing, the ICR data entry system was used together with the Editing and Imputation System. The CAFF 2010, the PHC 2015 and administrative data were used for imputation, and the CHAID algorithm was used to construct donor groups. The hot-deck method was also used for imputing missing data. SAS was used for analysis and tabulations. After dissemination of the CAFF's final results, the microdata were transferred to the central data centre operated by the Government and provided to users through the Micro-Data Integrated Service (MDIS).

## 11. CENSUS DATA QUALITY

To assess the quality of census data, a PES was conducted from 18 December 2015 to 24 December 2015. To ensure quality during field operations, consistency checks were implemented in the system.

## 12. DATA DISSEMINATION

Provisional results on the basic items were released before the publication of the final results in April 2016. More detailed census results (for each census item) were released in September 2016. The final report of the CAFF (including rural community data) was published in December 2016. Census results were disseminated online and are available at the Korean Statistical Information Service (KOSIS). Access to microdata is provided through the MDIS.

## 13. DATA SOURCES

**Korean Statistical Information Service.** 2019a. *Statistics by Theme* [online]. Seoul, Republic of Korea. [Cited 16 August 2019]. <http://kosis.kr/eng/>

**Korean Statistical Information Service.** 2019b. Statistical Database. In: *Korean Statistical Information Service* [online]. Seoul, Republic of Korea. [Cited 16 August 2019]. [http://kosis.kr/eng/statisticsList/statisticsListIndex.do?menuId=M\\_01\\_01&vwcd=MT\\_ETITLE&parmTabId=M\\_01\\_01](http://kosis.kr/eng/statisticsList/statisticsListIndex.do?menuId=M_01_01&vwcd=MT_ETITLE&parmTabId=M_01_01)

**Statistics Korea.** 2016. *Final Results of the 2015 Census of Agriculture, Forestry and Fisheries. Census Publication.* (also available at <http://kostat.go.kr/portal/eng/pressReleases/2/6/index.board>).

## 14. CONTACT

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<sup>7</sup> The following core items were not covered by the CAFF: (i) "Main purpose of production of the holding" and (ii) "Land tenure types on the holding".

THE REPUBLIC OF KOREA – CENSUS OF AGRICULTURE,  
FORESTRY AND FISHERIES 2015 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>1 088 518</b>	<b>1 309 787</b>
Holdings without land	10 478	
Holdings operated under one tenure form	793 755	634 037
Ownership and owner-like possession	706 577	532 036
Rented from others	87 178	102 001
Holdings operated under two or more tenure forms	284 285	675 751

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>1 088 518</b>	<b>1 309 787</b>
Holdings without land	10 478	
Holdings with land	1 078 040	1 309 787
Less than 0.1 ha	21 932	2 001
0.1–0.2 ha	164 082	25 348
0.2–0.3 ha	105 936	27 124
0.3–0.5 ha	194 284	76 932
0.5–0.7 ha	124 663	75 935
0.7–1.0 ha	130 702	113 132
1.0–1.5 ha	113 819	141 214
1.5–2.0 ha	71 292	124 485
2.0–2.5 ha	36 387	81 623
2.5–3.0 ha	26 248	71 903
3.0–4.0 ha	32 891	114 131
4.0–5.0 ha	16 439	74 109
5.0–6.0 ha	9 788	53 608
6.0–7.0 ha	8 347	54 690
7.0–10.0 ha	10 979	91 832
10.0 ha and over	10 251	181 720

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>1 088 518</b>	<b>1 309 787</b>
Total area of holdings	1 077 104	1 293 318
Land under temporary crops	950 540	1 104 310
Land under permanent crops	246 971	166 688
Uncultivated land	52 316	16 469

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>1 088 518</b>	<b>1 309 787</b>
Male	894 446	1 184 677
Female	194 072	125 111

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>2 569 387</b>
Male	1 264 652
Female	1 304 735
Engaged in agricultural activities on the holding	1 984 185
Male	1 002 365
Female	981 820

HOLDINGS BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>1 088 518</b>
1 person	201 240
2–3 persons	722 694
4–5 persons	140 448
6–7 persons	22 712
8 persons and over	1 424

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE	
	Number
Holder is an individual	1 088 518
Male	894 446
Female	194 072
20–24 years	111
Male	100
Female	11
25–34 years	4 043
Male	3 683
Female	360
35–44 years	38 555
Male	34 954
Female	3 601
45–54 years	152 468
Male	138 037
Female	14 431
55–64 years	311 336
Male	273 540
Female	37 796
65 years and over	582 005
Male	444 132
Female	137 873

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>118 617</b>	
Cattle	78 215	2 721 055
Cattle	75 205	2 396 640
Korean native cattle (Hanwoo)	73 619	2 272 590
Beef cattle	3 375	124 050
Cow	4 433	324 415
Goats	9 484	271 110
Pigs/swine	4 389	7 368 195
Poultry (1 000 head)	27 023	155 660
Chickens	26 250	147 350
Broilers	10 939	98 830
Layers	16 504	48 520
Ducks	1 698	8 307
Other animals	6 187	
Rabbits and hares	2 450	85 823
Deer	1 755	28 279
Other	2 305	
Insects		
Bees (hives)	7 185	849 706

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Total tractors of all kinds	250 495	271 431
Combine harvesters	77 023	78 027
Other (machine-powered)	n.a.	
Power tiller	530 221	561 965
Multi-purpose cultivator	368 956	384 382
Grain dryer	310 677	336 202
Rice transplanter	177 039	178 896
Sprayer	57 906	59 919

## 1. HISTORICAL OUTLINE

The first Census of Agriculture (CA) in the Lao People's Democratic Republic (Lao PDR) was conducted in 1998/1999. The metadata review and data presented here refer to the second CA, conducted in 2010/2011.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The CA 2010/2011 was carried out according to:

- Decree No. 140, of September 2009, for conducting the Lao PDR Census of Agriculture 2010/2011. Article 6 of the Decree mandates, inter alia, the Department of Statistics (DoS), under the Ministry of Planning and Investment (MPI), to conduct the Census of Agriculture, the Census of Population, and other censuses and surveys. The periodicity of the CA was established as being ten years.
- The Statistics Law of June 2010. The Law governs all statistical activities in Lao PDR.

### *Institutional framework and international collaboration*

The CA 2010/2011 was undertaken under the overall control of the Agricultural Census Steering Committee, chaired by the Deputy Prime Minister and comprising high-level representatives of the State Planning Committee (SPC) and of the Ministry of Agriculture and Forestry (MAF). The work on the census was undertaken by the Agricultural Census Office (ACO), which was established in the Department of Planning (DoP) of the MAF. The CA 2010/2011 was implemented in collaboration with the DoS. Financial support for the CA 2010/2011 was received from several donors: the Swiss Agency for Development and Cooperation (SDC), the International Fund for Agricultural Development (IFAD), the Australian Development Agency (AusAID), the French Development Agency (AFD) and the German Agency for Technical Cooperation (GIZ). The Government of Lao PDR also contributed, by means of the National Budget. FAO provided technical support for the census.

### *Census staff*

The census personnel included 2 333 field enumerators, supervised by 312 district supervisors, who worked during the fieldwork.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for the identification of the holder, the holding's characteristics, livestock numbers, etc.

**Reference period:** the preceding 12 months (the 2010 wet season and the 2010/2011 dry season) for the area of the holding, crops, methods of cultivation, use of fertilizers and pesticides, etc.

## 4. ENUMERATION PERIOD

The field operations were undertaken in the period from 28 February to 8 April 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production) and aquaculture production activities. A community survey was carried out together with the CA.

The **statistical unit** was the farm household (holding), defined as an economic unit of agricultural production under single management, comprising all livestock raised and all agricultural land operated, regardless of ownership, which engages agricultural operation above certain established thresholds of land, livestock or aquaculture (see section 7).

## 6. GEOGRAPHIC COVERAGE

The census covered urban and rural areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were established for the farm household in the CA 2010/2011: (i) the household operated at least 0.02 ha of agricultural land in the 2010 wet season or the 2010/11 dry season; or (ii) raised at least two cattle or buffaloes, five or more pigs, goats or sheep, or 20 or more poultry at the time of the census.

Holdings in the non-household sector were not included in the census.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The modular approach was applied for the CA 2010/2011. The census had three components: (i) a household component (served as a core module, covered by complete enumeration); (ii) a farm household component (supplementary module, conducted by sample enumeration); and (iii) a village component (community survey, by complete enumeration of all villages). The supplementary census module included sections with detailed questions on crops, livestock, machinery, services, labour, forestry, aquaculture and fisheries.

### *Frame*

The census frame was built on the basis of the household listing form (Form 1; see the "Questionnaire(s)" subsection below for more details), using complete enumeration.

### **Complete and/or sample enumeration methods**

The census data collection was conducted using complete enumeration in combination with sample enumeration. A short census questionnaire was applied for data collection from all households (using the Form 4 questionnaire). For in-depth data collection from farm households (using Form 5), a sample enumeration was used.

### **Sample design (if sampling was used)**

For the sample component (Form 5), two-stage sampling was used, villages being the Primary Sampling Units (PSUs). In each district, a sample of villages was selected using stratified systematic PPS sampling. The estimated number of households in each village was used as the size measure for PPS sampling. The sample of farm households in each sample village was selected using stratified systematic random sampling. Altogether, 2 620 villages and 41 660 sample farm households were selected in the sample.

### **Data collection methods**

Information was collected in paper questionnaires filled through face-to-face interviews (using the PAPI method).

### **Questionnaire(s)**

Four questionnaires were used in the CA 2010/2011, as follows: (i) a form for listing the households in the village, Form 1; (ii) a questionnaire for the household component, Form 4; (iii) a questionnaire for the farm household (holding) component, Form 5; and (iv) a questionnaire for the village component, Form 3.

The 2010/2011 CA census questionnaires covered all 16 core items recommended for the WCA 2010 round.

## **9. USE OF TECHNOLOGY**

GIS was used for census data dissemination. Census results were released and are available online.

## **10. DATA PROCESSING AND ARCHIVING**

Completed questionnaires were returned to the ACO in Vientiane for processing. Data processing involved: checking that the census enumeration was complete; manually checking that the questionnaires had been correctly filled out; coding of descriptive responses (such as crop types); manual data entry; running computer checks to identify and correct errors; and producing tabulations of census data.

## **11. CENSUS DATA QUALITY**

To ensure census data quality, supervision was done at the central, provincial and district level. The data were confronted with external sources, such as the data from the previous census and current agricultural surveys. For the sampling component, statistical errors were computed.

## **12. DATA DISSEMINATION**

Census data were disseminated through printed publications and online. A census report with the final census results was released in May 2012. Various census output tables were prepared at the national, district and village level. Based on the census results, Lao PDR also produced the "Atlas of agriculture. Patterns and trends between 1999 and 2011" (available online).

## **13. DATA SOURCES**

**Agricultural Census Office.** 2012. *Lao Census of Agriculture 2010/11, Instruction Manual for Enumerators*. Vientiane, Lao PDR. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Manuals\\_4/LAO\\_ENG\\_MAN\\_enumerator\\_2011.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Manuals_4/LAO_ENG_MAN_enumerator_2011.pdf)).

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**Steering Committee for the Agricultural Census, Agricultural Census Office.** 2012. *Lao Census of Agriculture 2010/11, Highlights*. Vientiane, Lao PDR. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Reports\\_4/LAO\\_ENG\\_REP\\_2010-2011.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Reports_4/LAO_ENG_REP_2010-2011.pdf)).

## **14. CONTACT**

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THE LAO PEOPLE'S DEMOCRATIC REPUBLIC –  
CENSUS OF AGRICULTURE 2010/2011 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>782 800</b>	<b>1 870 200</b>
Holdings without land	6 200	
Holdings with land	776 600	1 870 200
Owned land	730 800	1 738 400
Rented land	68 900	110 700
Other form of tenure	19 600	21 100

LAND FRAGMENTATION		
	Holdings	Number of parcels
<b>Total holdings with land</b>	<b>776 600</b>	<b>2 089 100</b>
1 parcel	117 900	n.a.
2–3 parcels	502 300	n.a.
4–5 parcels	122 700	n.a.
6 parcels and over	33 700	n.a.

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>782 800</b>	<b>1 870 200</b>
Holdings without land	6 200	
Holdings with land	776 600	1 870 200
0.01–0.49 ha	58 100	16 900
0.50–0.99 ha	113 600	80 600
1.00–1.49 ha	148 600	171 900
1.50–1.99 ha	97 000	162 200
2.00–2.99 ha	150 500	350 400
3.00 ha and over	208 800	1 088 000

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>782 800</b>	<b>1 870 200</b>
Agricultural land	n.a.	1 623 100
Arable land	n.a.	1 428 200
Land under temporary crops	n.a.	1 230 000
Land temporarily fallow	n.a.	198 000
Land under permanent crops	n.a.	168 500
Permanent meadows and pastures	n.a.	26 400
Non-agricultural land	n.a.	247 100
Forest and other wooded land	n.a.	122 300
Other land	n.a.	124 800

HOLDERS, BY SEX		Number
<b>Holder is an individual</b>		<b>256 000</b>
Male		213 300
Female		42 700
<b>More than one co-holder (joint holders)</b>		<b>526 800</b>
Co-holders are male only		16 600
Co-holders are female only		8 600
Co-holders are both male and female		501 600

HOLDINGS BY HOUSEHOLD SIZE		Number
<b>Total</b>		<b>782 800</b>
1 person		3 400
2–3 persons		108 700
4–5 persons		294 300
6–9 persons		323 200
10 persons and over		53 200

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total</b>		<b>4 501 000</b>
Male		2 262 400
Female		2 238 600
Engaged in agricultural activities on the holding		2 654 700
Male		1 317 300
Female		1 337 400

HOLDINGS BY MAIN PURPOSE OF PRODUCTION		Holdings
<b>Total producing mainly for</b>		<b>782 800</b>
Home consumption		551 800
Sale		231 000

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	297 000	1 586 200
Buffaloes	226 400	774 200
Goats	43 200	215 600
Pigs/swine	306 400	978 300
Poultry (1 000 head)	n.a.	n.a.
Chickens	n.a.	9 314
Local chickens	487 500	8 665
Commercial chickens	4 000	649
Ducks	212 800	1 791

## 1. HISTORICAL OUTLINE

Agricultural censuses were conducted in the Lebanese Republic in 1961/1962, 1970 and 1998. A livestock census was conducted in 1980. The last agricultural census was carried out in 2010; the metadata and data relating to this census are presented here.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal framework that governs the National Statistical System of Lebanon includes Statistical Law No. 1793, issued on 22 February 1979, as well as Law No. 2728 issued on 28 February 1980, pertaining to the organization of the Central Administration for Statistics (CAS).

### **Institutional framework and international collaboration**

The CAS is the government body responsible for the production and publication of official statistics for the country. The Ministry of Agriculture<sup>1</sup> was the national institution responsible for the implementation of the General Agricultural Census (GAC) 2010 through a GAC project.<sup>2</sup> The regional services of the Ministry of Agriculture were in charge of the development and monitoring of the field operation.

The GAC project was financed by the Italian Government. FAO provided technical support for the implementation of census activities within the project.

### **Census staff**

The census personnel included: (i) at regional level: 7 regional (*mohafaza*) supervisors, 25 district (*caza*) supervisors and 100 field controllers; and (ii) at local level, 1 500 enumerators. Each enumerator was required to interview on average 120 holdings.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of enumeration for inventory items, such as livestock numbers.

**Reference period:** from 1 October 2009 to 30 September 2010, for other items, such as the labour force, the area of crops, the use of irrigation, fertilizers and pesticides.

## 4. ENUMERATION PERIOD

Data collection under the GAC 2010 was carried out between August 2010 and August 2011.<sup>3</sup> A specific enumeration period (within the overall 13-month enumeration period) was established for each region (*mohafaza*).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). The units engaged in forestry and fishing activities were not covered, unless they were associated with an agricultural holding.

The **statistical unit** for data collection was the agricultural holding, defined as an economic unit of agricultural production under single management operating land and comprising livestock, without regard to legal form.

## 6. GEOGRAPHIC COVERAGE

The GAC 2010 included all governorates and districts except the urban capital Beirut, where no agricultural holdings exist.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following minimum size limits were applied for the agricultural holdings in the GAC 2010: (i) 1 000 m<sup>2</sup> (1 dunum) of land in the field; (ii) 400 m<sup>2</sup> under protective cover (greenhouses), or (iii) one cattle, seven sheep, seven goats, or eight beehives.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

Although a modular approach was planned for conducting the 2010 GAC, only one census module was implemented by the country, because of budget and time constraints. The module questionnaire comprised several sections, including crops, livestock and machinery.

### **Frame**

The census frame was prepared on the basis of the enumeration areas (1 451 in total), the lists of holdings from the 1998 GAC, and topographic maps. The lists of holdings were updated by the enumerators prior to the data collection phase.

<sup>1</sup> The Directorate of Studies and Coordination was the unit responsible for the coordination of the GAC project within the Ministry of Agriculture

<sup>2</sup> The project entitled Observatoire Libanais pour le Développement Agricole.

<sup>3</sup> Initially, a two-month enumeration period was established; however, this was extended because of technical difficulties encountered at field level.

**Complete and/or sample enumeration methods**

The complete enumeration method was used in the GAC (core module).

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

Data collection was done by means of direct interviews, using the PAPI method.

**Questionnaire(s)**

A single census questionnaire was used for census data collection. The 2010 GAC covered 15 out of the 16 items recommended in the WCA 2010 for the core module.<sup>4</sup> Information on other economic production activities at the holding level holding was not collected.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

CSPPro was used for the entry, processing and tabulation of census data.

**11. CENSUS DATA QUALITY**

A three-level supervision of fieldwork was established to ensure the quality of field operations: regional (*mohafaza*) supervisors, district (*caza*) supervisors and field controllers.

A pilot survey was conducted in each region for testing the census questionnaire.

**12. DATA DISSEMINATION**

The 2010 GAC results were disseminated in February 2012 through the website of the Ministry of Agriculture. The census results were presented at national and regional (*mohafaza*) level.

**13. DATA SOURCES**

**Ministry of Agriculture.** 2012. *Résultats Globaux du Module de Base du Recensement de l'Agriculture 2010*. Beirut, Lebanon. (also available at <http://www.agriculture.gov.lb/Statistics-and-Studies/Comprehensive-Agricultural-Statistics/statistics-2010>.)

**14. CONTACT**

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<sup>4</sup> The missing core item is: "Other economic production activities of the holding's enterprise".



# LEBANON – AGRICULTURAL CENSUS 2010 – MAIN RESULTS

HOLDINGS AND UTILIZED AGRICULTURAL AREA (UAA), BY LEGAL STATUS		
	Holdings	UAA (ha)
<b>Total</b>	<b>169 512</b>	<b>230 994</b>
Civil persons	157 055	196 929
Juridical persons	12 006	28 865
Others <sup>1</sup>	451	5 200

UAA, BY LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>169 512</b>	<b>230 994</b>
Owned	142 303	163 481
Rented	12 954	48 596
Other form of tenure	14 255	18 917

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES OF UAA		
	Holdings	UAA (ha)
<b>Total holdings with UAA</b>	<b>169 512</b>	<b>230 994</b>
Holdings without UAA	4 142	
Holdings with UAA	165 370	230 994
Less than 0.1 ha	929	61
0.1–0.2 ha	26 490	3 358
0.2–0.5 ha	51 622	15 389
0.5–1 ha	35 682	23 309
1–2 ha	26 269	34 149
2–4 ha	13 977	36 455
4–6 ha	4 412	20 598
6–8 ha	1 998	13 410
8–10 ha	902	7 826
10–15 ha	1 409	16 350
15–20 ha	557	9 284
20–50 ha	835	24 020
50 ha and over	288	26 786

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>169 512</b>	<b>321 580</b>
UAA	169 512	230 994
Land temporarily fallow	n.a.	12 900
Land under permanent crops	n.a.	125 928
Permanent fallow land (land not cultivated for more than five years)	n.a.	47 027
Uncultivated farm area	n.a.	21 665
Forest and other wooded land	n.a.	18 823
Other land	n.a.	3 071

HOLDERS, BY SEX	
	Number
<b>Total</b>	<b>169 022</b>
Male	154 457
Female	14 565

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>817 513</b>
Engaged in agricultural activities on the holding	404 594
Permanent workers	165 594
Casual workers	239 000

EMPLOYEES ON THE HOLDING	
	Number
<b>Total employees</b>	<b>95 715</b>
Permanent workers	51 049
Casual workers	44 666

HOLDERS, BY SEX AND AGE	
	Number
<b>Total</b>	<b>169 022</b>
Male	154 457
Female	14 565
Under 25 years	3 115
Male	2 946
Female	169
25–34 years	15 592
Male	14 769
Female	823
35–44 years	35 071
Male	32 644
Female	2 427
45–54 years	43 460
Male	39 840
Female	3 620
55–64 years	32 760
Male	29 427
Female	3 333
65 years and over	39 024
Male	34 831
Female	4 193

HOLDINGS, BY MAIN PURPOSE OF PRODUCTION		
	Holdings	Area (ha)
<b>Total producing mainly for</b>	<b>169 512</b>	<b>230 994</b>
Home consumption	43 278	15 987
Sale	126 234	215 007

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>15 773</b>	
Cattle	10 410	68 568
Sheep	4 094	265 345
Goats	5 847	403 861
Pigs/swine	51	7 735
Poultry (1 000 head)	15 252	n.a.
Chickens	12 416	412
Broilers	689	45 000
Laying hens	1 417	3 800
Ducks	417	31
Turkeys	185	26
Other	128	
Quail	102	54 792
Ostriches	26	1 081
Insects		
Bees (hives)	6 183	169 308

METHODS OF IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>91 818</b>	<b>112 956</b>
Surface	71 241	55 930
Sprinkler	5 844	28 246
Localized irrigation	14 733	28 778

SOURCES OF IRRIGATION WATER		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>91 818</b>	<b>112 956</b>
Surface water	47 440	44 053
Groundwater	21 857	56 478
Other	22 521	12 425

<sup>1</sup> "Other" holdings include cooperative, public and religious institutions.

## 1. HISTORICAL OUTLINE

The 2011 Agricultural Census (AC), to which the metadata review and data presented here refer, is the first AC to be carried out in Mongolia.<sup>1</sup>

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The AC 2010 was conducted on the basis of:

- Clauses 1 and 5 of Article 7 of the Statistics Law of Mongolia;
- Part 1 of Article 43 of the Law on Administrative Responsibility of Mongolia;
- Resolution No. 137 of the Government of Mongolia on Conducting regular agricultural censuses, of 25 April 2012; and
- Decision No. 61 of the Chairman of National Statistical Office, on Concepts of agricultural census, questionnaire forms and instructions of agricultural census, of 11 April 2012.

### *Institutional framework and international collaboration*

The overall responsibility for the general methodology and organization of the census was entrusted to the National Statistical Office (NSO). To coordinate census implementation activities, a State Commission for the AC was established at the national level, and census commissions were set up at province and subprovince level.

The census was funded by the Government of Mongolia and the World Bank. FAO provided technical assistance.

### *Census staff*

Census field work activities involved 1 967 enumerators, 89 supervisors and 340 leaders.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the end of the year, December 2011, for inventory items such as livestock numbers.

### **Reference periods:**

- the year 2011, for items such as labour force, production and sales of agricultural products;
- the last five years, for example for credit used for agricultural purposes.

## 4. ENUMERATION PERIOD

Field data collection took place between 25 May and 15 June 2012.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

### *Census scope*

The AC 2011 covered all households, business units and organizations running their activities in the agricultural (crop and livestock) production, forestry, fishery and hunting sectors. A community survey was carried out jointly with the census.

### *Statistical unit*

For the objectives of the CA 2011, two types of statistical units were identified: (i) households<sup>2</sup> and (ii) enterprises.<sup>3</sup>

## 6. GEOGRAPHIC COVERAGE

Data collection covered the entire country, including both urban and rural area.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No thresholds or other exclusions were applied.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the AC 2011.

<sup>1</sup> Historically, yearly livestock censuses were conducted in Mongolia.

<sup>2</sup> These could be (a) households with one person, who supplies own food for living and other consumption without uniting with other people and/or members of other households; (b) all individuals in a household with several individuals, who supply own food for living and other consumption together in a group of two or more individuals. The household members may combine their income and may have one budget; however, they may or may not be legal relatives.

<sup>3</sup> Business units and other bodies and organizations.

**Frame**

The census frame for the households involved in agricultural activities was established on the basis of the information collected during the pre-enumeration phase of the Population and Dwelling Census (PDC), conducted in 2010. The census frame for the holdings in the non-household sector was built using the results of the livestock census conducted at the end of 2011 and the 2011 Census of Business Units and Organizations.

**Complete and/or sample enumeration methods**

The census was a combination of complete and sampling enumeration. The households running livestock production were covered by sample enumeration. Other agricultural holdings (such as the households and enterprises engaged in crop production, enterprises<sup>4</sup> running livestock breeding, forestry, fishery and hunting production) were enumerated completely.

**Sample design (if sampling was used)**

Replicated systematic sampling was used to select 70 000 households running livestock production in 2011, out of a population of 211 700 households (33 percent). The response rate was of 99.3 percent.

**Data collection methods**

The census information was collected using the PAPI method through face-to-face interviews.

**Questionnaire(s)**

Eight forms were used for data collection in the AC 2011, specific to each type of unit and activity. The 2010/2011 AC questionnaires covered all 16 core items recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

New technologies were used in the AC 2011, including satellite imagery for census mapping and GIS for census data dissemination. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

The census data were processed using CSPro. SPSS was used for statistical data analysis.

**11. CENSUS DATA QUALITY**

Control and inspection works were made in the districts (*duuregs*) of the capital city and in the provinces and *soums* during the census, to monitor all phases of census data collection. Special controls were made to assess incomplete or incorrect completion of the questionnaires, more specifically in relation to questions about seed varieties, types of fertilizers, agrochemical analysis and soil erosion. Quality checks, inconsistencies checks and comparisons with external data were the main methods for assessing census quality.

**12. DATA DISSEMINATION**

The report on the census results was published and sent to the main users. The final results are available on the NSO's website.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

**National Statistical Office of Mongolia.** 2012. *First State Agriculture Census 2011, General results*. Ulaanbaatar City, Mongolia. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Reports\\_6/MON\\_ENG\\_REP\\_2011.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Reports_6/MON_ENG_REP_2011.pdf)).

**14. CONTACT**

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<sup>4</sup> Organizations running livestock production; organizations running arable farming production; organizations running forestry, fishery and hunting production; and information on the primary administrative units (community survey)

# MONGOLIA – AGRICULTURAL CENSUS 2011 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	n.a.	<b>802 169</b>
Owned	n.a.	764 661
Rented from others	n.a.	28 520
Rented to others	n.a.	8 989

MEMBERS OF HOLDER-S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>929 200</b>
Engaged in agricultural activities on the holding	635 300

EMPLOYEES	
	Number
<b>Total</b>	<b>484 547</b>
Permanent workers	400 914
Male	217 239
Female	183 675
Temporary workers	55 052
Seasonal workers	28 581

HOLDERS, BY SEX AND AGE	
	Number
<b>Total</b>	<b>243 100</b>
Male	209 600
Female	33 500
15–34 years	64 700
35–49 years	93 800
50 years and over	84 600

LIVESTOCK	
	Head
Cattle	2 339 700
Sheep	15 668 500
Goats	15 934 600
Horses	2 112 900
Camels	280 100

METHODS OF IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>27 984</b>	<b>49 600</b>
Surface	25 738	n.a.
Sprinkler	1 977	n.a.
Cloud method	285	n.a.
Drop system method	400	n.a.
Soil infiltration method	648	n.a.

SOURCES OF IRRIGATION WATER		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>27 984</b>	<b>49 600</b>
Wells	12 107	n.a.
Lakes, ponds, streams, springs	10 318	n.a.
Port water with reservoirs	1 886	n.a.
Water stored in water container	4 521	n.a.
Distilled waste water	150	n.a.
Rain and snow water	3 085	n.a.
Flood water	162	n.a.
Other	1 348	n.a.

MACHINERY AND EQUIPMENT USED ON THE HOLDING	
	Units
Total tractors of all kinds	15 113
Combine harvesters	1 173
Other (machine-powered)	
Truck	25 285
Creamers	3 571
Hayfork	24 721

TEMPORARY CROPS HARVESTED	
	Area (ha)
<b>Total</b>	<b>n.a.</b>
Cereals	280 564
Vegetables and melons	6 840
Oilseed crops	10 830

## 1. HISTORICAL OUTLINE

The Republic of the Union of Myanmar (Myanmar) participated in the World Census of Agriculture in 1953/1954; however, the coverage of that census was limited to 2 143 village tract in a neighbourhood of 252 townships. A Sample Census of Agriculture was conducted in 1993, followed by a complete full coverage census in 2003. The 2010 Census of Agriculture (CA), to which the present metadata review and data refer, is the fourth CA to be conducted in Myanmar.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

Statistical activities in Myanmar are regulated by the Central Statistical Authority Act of Myanmar 1952.

### **Institutional framework and international collaboration**

The National Agricultural Statistics System (NASS) of Myanmar can be defined as a decentralized system. The legislation related to the CA places the census under the responsibility of the Ministry of Agriculture and Irrigation (MoAI). The MoAI was given the mandate to undertake the decennial CA in Myanmar. The MoAI authorized the Settlement and Land Record Department (SLRD) to plan, prepare and implement the CA 2010, as well as to process, tabulate, analyse and disseminate the results. The census was funded by the Government of Myanmar and by several donors. A National Census Steering Committee (NCSC) was formed involving experts and high-level personnel from related departments under concerned ministries to oversee all activities of the census. The NCSC was chaired by the Director General of the SLRD. FAO provided technical assistance.

### **Census staff**

The CA personnel included 5 877 field enumerators and 1 179 field supervisors.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for inventory items, such as number and use of parcels and livestock numbers.

### **Reference periods:**

- the preceding 12 months, for activities of household members, agricultural practices, farm labour, aquaculture, etc.;
- the agricultural year (from February to January 2011) for crop items, etc.

## 4. ENUMERATION PERIODS

Data collection was carried out in two periods:

- from 15 February to 31 March 2009 for the core module (CM); and
- from 15 February to 31 March 2011 for supplementary modules (SMs).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production) and aquaculture activities. In addition, a community survey was conducted at village-tract level.

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production under single management, comprising all livestock kept and all land used wholly or partly for agricultural production purposes, exceeding a certain physical threshold, regardless of title and legal form” (see section 7 below). Two main types of holdings were distinguished in the CA 2010: (i) household agricultural holdings; and (ii) special holdings. Special holdings included the holdings operated by non-household holdings (corporations, institutions, etc.) and by “special households”.

## 6. GEOGRAPHIC COVERAGE

The CA 2010 covered the entire country, with the exception of certain remote areas and highly urbanized areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The agricultural production units falling below the following thresholds were not covered by the CA 2010:

- less than one large livestock (cattle/buffalo/donkey/mule);
- less than four small livestock (sheep/goat/pig);
- less than 30 poultry (chicken/duck/quail) kept or bred as of the time of enumeration; and/or
- less than 0.05 acres (202.3 m<sup>2</sup>) of land used wholly or partly in crop cultivation.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The modular approach was used in the CA 2010, which was carried out in two stages:

- During the first stage (from 15 February to 31 March 2009), the census CM was conducted. As part of the works performed under the CM, a listing of households was established to identify all family farms.
- In the second stage (15 February to 31 March 2011), the SM was conducted (see subsection “Questionnaires” below).

### Frame

A listing of households (CM) was undertaken in February – March 2009. Given that the 2009 frame for the supplementary modules was obsolete, in February – March 2011, a two-stage sampling was implemented, according to which 20 percent of the villages in each township was selected in the first stage using PPS. Subsequently, a complete listing of all households was undertaken in all sample villages to update the 2009 frame.

For non-household and specialized holdings, registers regularly updated by the relevant line agencies were used.

### Complete and/or sample enumeration methods

For the CM (limited to key structural variables), complete enumeration was used. The SMs were carried out using sample enumeration. In contrast, complete enumeration was used for large agricultural holdings, aquaculture holdings and urban agricultural holdings.

### Sample design (if sampling was used)

The SMs were carried out in two stages:

- Sample villages were selected at the township level using PPS.<sup>1</sup>
- Systematic sampling was applied to select the final sampling unit (FSU), which was the household with a small agricultural holding.<sup>2</sup>

In the second stage, one third of small agricultural holdings was selected.

### Data collection methods

Data collection for the CA 2010 was done by means of paper questionnaires, filled in through face-to-face interviews (PAPI method).

### Questionnaire(s)

Four questionnaires were used for holding-level data collection in the SM:

- Form A – the questionnaire for crop cultivation;
- Form B – the questionnaire for keeping or breeding livestock;
- Form C – the aquaculture holding questionnaire; and
- Form D – the household questionnaire;

In addition, a questionnaire was used for the community survey (Form E – the village tract questionnaire).

The census covered all 16 core items recommended by FAO for collection in the WCA 2010 round.

## 9. USE OF TECHNOLOGY

Census results were disseminated and are accessible online.

## 10. DATA PROCESSING AND ARCHIVING

The manual data entry method was used and sketch maps were produced manually (hand drawing). Data editing, imputation, validation and tabulation were done by a working group using CSPRO.

## 11. CENSUS DATA QUALITY

Control and inspection works were made.

## 12. DATA DISSEMINATION

The CA results were disseminated through printed reports and the institution's website. The report containing the final results of the CA 2010 was issued in May 2013. Eight thematic papers were prepared and disseminated.

## 13. DATA SOURCES

**Ministry of Agriculture and Irrigation, Settlement and Land Records Department.** 2013. *Report on Myanmar Census of Agriculture 2010*. Nay Pyi Taw, the Republic of the Union of Myanmar.

## 14. CONTACT

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 Website: <https://www.moali.gov.mm/en>

<sup>1</sup> The primary sampling unit (PSU) in the first stage was the village and the domain was the township. Using the results of the CM, the number of households engaged in small agricultural holdings (crop cultivation and/or livestock-keeping, including of poultry) was used as an indicator. The following procedures were used to obtain the number of sample villages and to select them.

<sup>2</sup> Small agricultural holdings were surveyed on the basis of sample villages among the village tract or township by using the systematic random sampling (SRS) method. A random start (from 1 to 3) in every sample village was provided to the enumerator, to determine which sample households with small agricultural holdings would be interviewed. The sampling rate for selecting the sample of such households was 33.33 percent.

## MYANMAR – CENSUS OF AGRICULTURE 2010 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>5 426 083</b>	<b>13 328 844</b>
Household agricultural holdings	5 419 756	12 794 176
Special agricultural holdings	6 327	534 668

LAND TENURE		
	Holdings	Area (ha)
<b>Household agricultural holdings</b>	<b>5 419 756</b>	<b>12 794 176</b>
Owner-like	n.a.	12 365 387
Trespassed	n.a.	375 800
Other form of tenure	n.a.	52 990

LAND FRAGMENTATION		
	Holdings	Number of parcels
<b>Household agricultural holdings</b>	<b>5 419 756</b>	<b>7 561 603</b>
1 parcel	n.a.	3 192 132
2–3 parcels	n.a.	3 640 842
4–5 parcels	n.a.	618 770
6–9 parcels	n.a.	107 780
10 parcels and over	n.a.	2 080

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Household agricultural holdings</b>	<b>5 419 756</b>	<b>12 794 176</b>
Holdings without land	433 084	
Holdings with land	4 986 672	12 794 176
Less than 0.4 ha	247 584	45 208
0.4–1.2 ha	1 345 024	946 558
1.2–2.0 ha	1 102 363	1 602 168
2.0–4.0 ha	1 336 222	3 563 320
4.0–8.1 ha	727 458	3 839 684
8.1–20.2 ha	212 231	2 327 063
20.2 ha and over	15 789	470 174

LAND USE		
	Holdings	Area (ha)
<b>Total household agricultural holdings</b>	<b>5 419 756</b>	<b>12 794 176</b>
Land under temporary crops	n.a.	11 737 939
Fallow land	n.a.	9 671
Land under permanent crops	n.a.	815 056
Combined annual and permanent crops	n.a.	159 141
Land used for livestock	n.a.	474
Land used for aquaculture	n.a.	654
Other land	n.a.	71 241

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>25 720 907</b>
Male	12 560 995
Female	13 159 912
Engaged in agricultural activities on the holding	18 094 407
Male	9 056 850
Female	9 037 557

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>4 306 283</b>	
Cattle	3 516 432	11 153 962
Buffaloes	442 527	1 504 836
Sheep	12 990	292 594
Goats	113 536	1 083 428
Pigs/swine	1 304 383	2 746 826
Equines	n.a.	n.a.
Horses	12 977	28 909
Mules	1 390	2 835
Asses (donkeys)	195	379
Poultry (1 000 head)	n.a.	n.a.
Chickens	n.a.	33 923
Native chickens	2 393 491	29 027
Layer chickens	5 146	2 601
Broiler	88 577	2 190
Semi-broiler	491	104
Ducks	112 272	3 310
Other	4 544	68

SOURCES OF IRRIGATION WATER	
	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>2 336 210</b>
Owned well	185 857
River or creek	917 060
Private dam/canal	183 036
Government canal	909 514
Other types	140 723

MACHINERY AND EQUIPMENT USED ON THE HOLDING	
	Holdings
Total tractors of all kinds	120 039
Ploughs	3 921 119
Other (machine-powered)	
Rotary harrow	3 777 598
Sprayer	2 479 337
Thresher	728 330
Power tiller	709 703
Harvester	30 400
Water pump	556 409
Huller	681 435
Intercultivator	1 007 086
Trollergy	305 167

## 1. HISTORICAL OUTLINE

The first census of agriculture (CA) to be conducted in Nepal was the CA 1961/1962, followed by the decennial CAs held in 1971/1972, 1981/1982, 1991/1992 and 2001/2002.<sup>1</sup> The sixth CA,<sup>2</sup> to which the metadata review and data presented here refers, was the 2011/2012 CA.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

Statistical activities in Nepal are ruled by the Statistics Act 2015 (as amended). It commits the undertaking of censuses to the Central Bureau of Statistics (CBS). For agricultural censuses, a 10-year periodicity is established.

### **Institutional framework and international collaboration**

The agriculture census project was implemented by the Crops and Livestock Census and Survey Section of the Economic Statistics Division of the CBS. Under the direct coordination of a Steering Committee, the Director General (DG) of the CBS set up a Technical Committee, the main instrument for managing the implementation of all census activities. A hierarchical ad-hoc organization structure was established to successfully control field data collection at the district level. Technical assistance was received from FAO and from the Asian Development Bank (ADB).

### **Census staff**

A total of 1 567 enumerators and 438 supervisors were deployed to undertake the data collection for the census.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for land area, number of livestock, machinery and equipment, etc.

**Reference period:** the calendar year 2011, for labour force, use of agricultural machinery and equipment, non-residential buildings, ancillary agricultural activities, etc.

## 4. ENUMERATION PERIOD

The census enumeration work was conducted in two phases. In the first phase, from January to March 2012, enumeration was carried out in 59 districts in the *terai* and hill areas. The enumeration for the remaining 16 mountain districts was conducted from April to June 2012, when the climate was more favourable.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and animal production) activities. A community survey was also conducted.

The **statistical unit** was the agricultural holding,<sup>3</sup> defined as an economic unit of agricultural production under single management comprising all livestock (including poultry) kept, and all land used wholly or partly for agricultural production purposes, and with a physical sized answering to specific threshold criteria (specified in point 7 below).

## 6. GEOGRAPHIC COVERAGE

The CA 2011/2012 covered the entire territory of Nepal, including rural areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

A holding was considered to be an agricultural unit only if it satisfied one of the following thresholds: (i) having area under crops greater than or equal to a quarter of a *ropani* or four *anna* (0.01272 ha) in the hill or mountain district, or greater than or equal to eight *Dhur* (0.01355 ha) in the *terai*; (ii) keeping one or more head of cattle or buffaloes; (iii) keeping five or more head of sheep or goats; or (iv) keeping 20 or more poultry. Small agricultural operations below these thresholds were excluded from the CA.

Only agricultural holdings in the household sector were included in the CA.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The 2011/2012 CA was a sample-based classical census conducted in two phases (see section 4 and the subsection titled "Sample design" below).

<sup>1</sup> All censuses were conducted on a sample basis.

<sup>2</sup> The National Sample Census of Agriculture 2011/12.

<sup>3</sup> The concept of agricultural holding was closely related to that of household. In rare cases, one household comprised more than one holding or, alternatively, one holding was operated jointly by more than one household. In the case of Nepal, an agricultural holding is generally the same as an agricultural household.



**Frame**

The sampling frame for the first-stage selection was based on the information collected in the Population Census (PC) 2011. The PC questionnaire included a set of questions on agriculture.<sup>4</sup> This information was used in identifying the households with agricultural activities. A list of all agricultural households, with land area operated and number of livestock raised, was then compiled.

**Complete and/or sample enumeration methods**

The list of agricultural holdings (including main structural variables, such as area of holdings and number of animals) was elaborated using complete enumeration.

The detailed census information was collected using sample enumeration.

**Sample design (if sampling was used)**

The CA used stratified two-stage sampling with districts as strata, wards/or EAs as PSUs and agricultural holdings as SSUs. The first stage used PPS systematic sampling, with the number of holdings in PSUs as the size measure. The selection of agricultural holdings during the second stage used equal probability systematic sampling (approximately 25 holdings per ward, for a total of 130 000 agricultural holdings).

**Data collection method(s)**

Data collection was conducted through face-to-face interviews, using the PAPI method.

**Questionnaire(s)**

Only one questionnaire was used for holding-level data collection in the CA 2011/2012. A questionnaire was also used for the community survey conducted jointly with the census.

All 16 core items recommended to be collected in the WCA 2010 were covered in the CA.

**9. USE OF TECHNOLOGY**

The census results were disseminated and are accessible online. Microdata dissemination of census results was also provided.

**10. DATA PROCESSING AND ARCHIVING**

The processing of the census was undertaken on microcomputers and involved computer systems for data entry, editing and tabulation. Data entry was done within the CBS, using the Bureau's staff and a small number of temporarily hired persons. The programmes for data entry and other uses were developed by the CBS. Data entry was carried out using CSpPro, whereas SPSS was used for editing, tabulation and analysis of the census data. All coding was done during enumeration. The questionnaires were checked thoroughly for any missing data.

**11. CENSUS DATA QUALITY**

Training, supervision, completeness checks, verification of data entry and consistency checks were the quality control mechanisms established for the data. A pilot test of census questionnaires and procedures was undertaken in 2010. Sample design and census questionnaires and other forms were finalized following evaluation of that test.

**12. DATA DISSEMINATION**

The main census results were published by the CBS in a series of 85 reports, each containing the same set of 32 tables. In addition to the census reports, for the first time, census microdata was also made available for sale. Diskettes were prepared containing summary data and a computer programme that enabled users to produce limited tables of their own specification. Data files were also restructured to enable production of additional tables or application of statistical analysis techniques using SPSS or other statistical analysis packages. The CA results are available on the institution's website.

**13. DATA SOURCES**

**Central Bureau of Statistics.** 2013. *National Sample Census of Agriculture Nepal, 2011/12*, National Report. Kathmandu, Nepal. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Reports\\_5/NPL\\_EN\\_REP\\_2011-12.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Reports_5/NPL_EN_REP_2011-12.pdf)).

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

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<sup>4</sup> The sampling frame for the CA 2011/2012 was derived from the population census 2011, which collected the following items: area of the holdings and number of livestock, including poultry, by type.

# NEPAL – CENSUS OF AGRICULTURE 2011/2012 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>3 831 093</b>	<b>2 525 639</b>
Single-holding household	3 791 229	n.a.
Multi-holding household	31 823	n.a.
Partnership household	8 040	n.a.

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>3 831 093</b>	<b>2 525 639</b>
Holdings operated under one tenure form	3 290 263	2 041 040
Owned	3 241 881	2 014 266
Rented from others	34 984	24 416
Other tenure forms	13 398	2 359
Holdings operated under two or more tenure forms	540 829	484 599

LAND FRAGMENTATION		
	Holdings	Number of parcels
<b>Total</b>	<b>3 831 093</b>	<b>12 096 417</b>
1 parcel	904 925	n.a.
2–3 parcels	1 724 602	n.a.
4–5 parcels	723 389	n.a.
6–9 parcels	379 642	n.a.
10 parcels and over	98 534	n.a.

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>3 831 093</b>	<b>2 525 639</b>
Less than 0.1 ha	471 087	23 196
0.1–0.2 ha	461 957	68 162
0.2–0.5 ha	1 169 503	396 721
0.5–1.0 ha	984 022	695 060
1.0–2.0 ha	548 974	749 810
2.0–3.0 ha	129 364	308 569
3.0–4.0 ha	39 507	134 353
4.0–5.0 ha	14 881	65 365
5.0–10.0 ha	10 744	69 177
10.0 ha and over	1 054	15 227

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>3 831 093</b>	<b>2 525 639</b>
Agricultural land	n.a.	2 415 408
Arable land	n.a.	2 162 751
Land under temporary crops	3 723 127	2 123 297
Land under temporary meadows	61 948	8 410
Land temporarily fallow	224 725	31 044
Land under permanent crops	884 001	168 457
Permanent meadows and pastures	153 273	29 310
Forest and other wooded land	333 577	54 890
Other land	3 771 220	110 231

HOLDERS BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>3 831 093</b>	<b>2 525 639</b>
Male	3 104 338	2 208 282
Female	726 755	317 358

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>20 552 543</b>
Male	10 317 681
Female	10 234 862

HOLDERS, BY SEX AND AGE	
	Number
<b>Total</b>	<b>3 831 093</b>
Male	3 104 338
Female	726 755
15–24 years	119 259
Male	81 867
Female	37 392
25–34 years	617 331
Male	442 667
Female	174 664
35–44 years	1 022 469
Male	808 775
Female	213 694
45–54 years	959 728
Male	814 701
Female	145 027
55–64 years	674 185
Male	575 363
Female	98 822
65 years and over	438 122
Male	380 965
Female	57 157

PERMANENT EMPLOYEES ON THE HOLDING, BY SEX	
	Number
<b>Total</b>	<b>72 333</b>
Male	51 779
Female	20 554

HOLDINGS, BY MAIN PURPOSE OF PRODUCTION	
	Holdings
<b>Total producing mainly for</b>	<b>3 831 093</b>
Home consumption	3 684 998
Sale	146 095

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>3 353 857</b>	
Cattle	2 280 542	6 430 397
Buffaloes	1 668 820	3 174 389
Yaks	6 235	48 865
Sheep	96 245	608 074
Goats	2 352 453	10 990 147
Pigs/swine	444 825	818 523
Horses	9 726	17 873
Asses and mules	1 255	5 463
Poultry (1 000 head)	2 099 839	28 249
Chickens	1 808 642	26 268
Ducks	108 879	430
Pigeon	171 759	1 499
Other	10 559	52
Other animals	14 988	
Rabbits	6 242	24 239
Other	8 746	17 088
Insects		
Bees (hives)	124 150	n.a.

## 1. HISTORICAL OUTLINE

The Sultanate of Oman has carried out four general censuses of agriculture (CA), starting with the CA 1978/1979. The second CA was conducted in 1992/1993, and the third in 2004/2005. The fourth CA, to which the metadata review and data refer, was carried out in 2012/2013.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The statistical law, promulgated by Royal Decree No. 29/2001, regulates the overall statistical activities performed in the country. The CA 2012/2013 was conducted on the basis of Ministerial Decree No. 65/2012, of 21 March 2012, issued by the Minister of Agriculture and Fisheries.

### **Institutional framework and international collaboration**

The responsibility for conducting the census is vested in the Ministry of Agriculture and Fisheries (MAF). Four committees were set up for the implementation of the census: a high-level steering committee, a technical committee, an information and media committee, an administration and finance committee and a control and operation unit.

### **Census staff**

The personnel involved in the census amounted to 1 500 persons, out of which 1 020 were enumerators, 180 were field team leaders, 61 were coordinators, 61 were in charge of administrative tasks, and nine were supervisors and other administration staff.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 6 October 2012, for inventory items, such as livestock numbers.

**Reference period:** from 1 September 2012 to 31 August 2013, for items on crops, agricultural machinery, etc.

## 4. ENUMERATION PERIOD

Data collection was conducted between 1 December 2012 and 30 April 2013.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and animal production) activities.

The **statistical unit** was the agricultural holding (farm), defined as an economic unit of agricultural production, under a single management, wholly or partially used, that includes land, animals and crops (see also section 7).

## 6. GEOGRAPHIC COVERAGE

The agricultural census covered the entire country, both rural and urban areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were established for agricultural holdings:

- at least one head of cattle or camel,
- at least five numbers of sheep or goats or a mixture of the two or
- at least 50 poultry.

House gardens were not included in the CA (regardless of the area).

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the 2012/2013 CA.

### **Frame**

The main source for the frame was the CA 2004/2005. The frame's list of farms was updated before the fieldwork was carried out by the local administrations.

### **Complete and/or sample enumeration methods**

The 2012/2013 CA was conducted using complete enumeration.

### **Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

The CA data collection was conducted through face-to-face interviews using the CAPI method.

**Questionnaires**

A single electronic questionnaire was used on PDAs. Paper questionnaires were used for some holdings (including farms of royal family members, governmental farms, etc.).

The CA 2012/2013 questionnaires covered 13 of the 16 core items<sup>1</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

The CAPI method, with PDAs, was used for data collection. The geographical locations of farms were registered. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Progress reports were made available daily for field team members and other census staff. Data were transferred from the field directly to servers in the MAF headquarters. The data captured were checked for consistency and accuracy.

**11. CENSUS DATA QUALITY**

Data quality and assurance were guaranteed at each step of the process. A pre-test was carried out two months before the census fieldwork to validate the entire process.<sup>2</sup> The use of CAPI allowed for improvements in data quality and in the timeliness of the data collected. The questionnaire was designed to reduce data typing (multiple-choice questions were provided). A detailed field guide was given to each enumerator. The structure<sup>3</sup> of the team on the field allowed for guaranteeing their commitment.

**12. DATA DISSEMINATION**

The census reports, with the final results, were made available to the public through printed publications, CD-ROMs and the MAF website. One publication with census results at country level, and other reports for each of the ten governorates with detailed data, were prepared and disseminated.

**13. DATA SOURCE**

**Ministry of Agriculture and Fisheries, Directorate General of Planning and Development.** Agricultural Census 2012/2013. In: *Directorate General of Planning and Development* [online]. Muscat, Oman. [Cited 5 September 2019]. <http://maf.gov.om/Pages/PageCreator.aspx?lang=AR&I=0&DId=0&CId=0&CMSId=800708>

**14. CONTACT**

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<sup>1</sup> The following core items were not covered by the CA: (i) "Area of holding according to land use types"; (ii) "Presence of forests and other woodland on the holding"; and (iii) "Other economic production activities of the holding's enterprise".

<sup>2</sup> The questionnaire, the data entry procedures, the time needed to fill in one questionnaire, coverage per day (number of farms visited in one day) and the travel time from one holding to the next.

<sup>3</sup> The enumerators were chosen from within the villages and rural towns. They were required to possess knowledge of agriculture. Each census team consisted of two persons: one MAF employee and one hired field staff.

# OMAN – CENSUS OF AGRICULTURE 2012/2013 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>166 610</b>	<b>149 105</b>
Civil persons	155 413	135 632
An individual	132 557	116 257
Two or more individuals	22 856	19 374
Juridical persons	11 197	13 473

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>166 610</b>	<b>149 105</b>
Holdings operated under one tenure form	165 876	n.a.
Legal ownership and owner-like possession	150 593	n.a.
Non-legal ownership or owner-like possession	5 066	n.a.
Rented from others	3 680	n.a.
Other form of tenure	6 537	n.a.
Holdings operated under two or more tenure forms	734	n.a.

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>166 610</b>	<b>149 105</b>
Holdings without land	12 600	
Holdings with land	154 010	149 105
Less than 1 ha	122 831	17 762
1–1.99 ha	14 371	18 863
2–4.99 ha	9 046	26 325
5–9.99 ha	5 501	30 308
10–19.99 ha	1 619	17 721
20–49.99 ha	447	10 943
50–99 ha	195	27 183

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX	
	Number
<b>Total</b>	<b>192 039</b>
Male	177 068
Female	14 753
Unknown	218

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total permanent workers</b>	<b>375 576</b>
Male	298 545
Female	77 031
Household members	237 265
Male	165 846
Female	71 419

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>146 500</b>	
Cattle	30 389	359 507
Sheep	33 356	548 231
Goats	64 707	2 085 206
Camels	18 048	242 833
Equines	n.a.	n.a.
Horses	263	1 346
Mules and hinnies	1 334	2 374
Poultry (1 000 head)	28 504	33 842
Chickens	19 316	31 847
Ducks	2 423	26
Turkeys	1 118	9
Other	5 647	1 960
Other animals	n.a.	
Rabbits and hares	2 959	37 259
Deers	162	1 643
Insects		
Bees (hives)	1 763	27 545

IRRIGATION, BY MAIN SOURCE OF IRRIGATION WATER		
	Holdings	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>146 576</b>	<b>147 945</b>
Dug well	37 735	75 407
Bore well	6 508	44 654
Underground channel (falaj)	65 378	16 279
Spring	2 066	575
Treated water	190	139
Others	5 443	3 921
Unknown	29 256	6 970

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Track-laying tractors	1 581	1 823
Combine harvesters	146	202
Other machines	n.a.	
Modern irrigation pump	5 838	6 790
Residues thresher	1 108	1 158
Pesticides sprayers	9 185	10 717
Milking equipments	118	304
Sugar cane extractor	39	44

## 1. HISTORICAL OUTLINE

Six agricultural censuses (ACs) were conducted in the Islamic Republic of Pakistan: the first in 1960, then in 1972, 1980, 1990 and 2000. The most recent AC, to which the metadata and data presented here refer, was conducted in 2010.<sup>1</sup>

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Agricultural Census Act 1958 (Act No. XLI of 1958) provided the legal basis for conducting census operations. In the context of the collection of agricultural data, the Act made it binding on the Government of Pakistan and on respondents to cooperate with the census enumerators and to furnish information on or with respect to items specified in the Act itself.

### **Institutional framework and international collaboration**

The Agriculture Census Wing (ACW) of the Pakistan Bureau of Statistics (PBS) is responsible for the planning, execution and publication of data on ACs and surveys. The Agriculture Census Organization (ACO) of the Ministry of Economic Affairs and Statistics coordinated AC implementation throughout the country.

The census-taking exercise was guided by an Advisory Committee, comprised of approximately 50 members drawn from relevant federal and provincial government departments, universities, research institutes, farmers, etc.

### **Census staff**

The census staff amounted to 8 271 provincial officers (supervisors) and enumerators (of which: 1 165 supervisors and 7 106 enumerators), as well as 13 officers and 73 ACW officials.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for land tenure, orchard area, household members, number of livestock, etc.

**Reference period:** agricultural year 2009/2010, for irrigation, cropping pattern, use of pesticides, agricultural machinery and agricultural labour, etc.

## 4. ENUMERATION PERIOD

Enumeration was completed in three phases, because of administrative issues and seasonal variations in different regions of the country, as follows:

- Phase I: from 14 December 2009 to 31 January 2010, for hot areas (whole of Punjab and Sindh Provinces);
- Phase II: from 22 February to 10 April 2010, for hot areas located in other regions; and
- Phase III: from 17 May to 30 June 2010, for cold areas located in particular regions.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered only agricultural activities (crop and animal production).

The **statistical unit** was the holding (farm), defined as “the aggregate area of land operated by member(s) of one household alone or with the assistance of member(s) of other household(s), without regard to location, size or title and normally used for crop production”. It also included nomadic livestock holdings.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.<sup>2</sup>

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following minimum size limits of holdings were applied in the AC 2010: (i) operate minimum of one *Kanal* (0.05 ha); and (ii) at least one head of cattle and/or buffalo, five sheep and/or goats for livestock.

The non-household sector was not covered in the AC.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The AC 2010 was a sample-based census conducted using the classical approach.

### **Frame**

Different sampling frames were prepared for the AC 2010: (i) *mouza* (village) lists, updated at district level for each *tehsil* through the *mouza* (village) Census 2008;<sup>3</sup> (ii) a list of urban blocks, prepared by the PBS; (iii) a list of national certainty holdings (NCHs); (iv) a list of households in each selected *mouza* (including data on total area, area owned and rented-in), prepared by the enumerators during the field operation; and (v) a list of *mouza* certainty holdings (MCHs).

<sup>1</sup> In addition, specialized censuses for livestock and agriculture machinery have been carried out: to date, four livestock censuses (in 1976, 1986, 1996 and 2006), and five agricultural machinery censuses (in 1968, 1975, 1984, 1994 and 2004).

<sup>2</sup> The geographical coverage was also extended to Gilgit Baltistan and Azad Jammu & Kashmir, each as a separate entity.

<sup>3</sup> For sampling purposes, these lists contained only rural, partly urban and bechiragh (unpopulated) *mouzas* arranged by patwar circles and kanungo circles.

**Complete and/or sample enumeration methods**

The AC 2010 was conducted on a sample basis.

**Sample design (if sampling was used)**

All NCHs and MCHs were enumerated on a 100-percent basis. However, specific selection procedures for *mouzas*, urban blocks and common households at various sampling stages were applied. The sample design and sample size varied for different parts of the country. The entire country was divided into four distinct parts for sampling. The following sampling techniques were applied:

- single-stage stratified and systematic sampling;
- a two-stage sample design using stratified and systematic sampling; and
- a three-stage stratified and systematic cluster sampling.

**Data collection method(s)**

Provincial Revenue Departments acted as the enumeration agency. The information was collected through face-to-face interviews with the sampled household, using PAPI.

**Questionnaire(s)**

Three types of census forms were used in the AC 2010. Form 1 was used for household listings in the selected *mouzas* or urban blocks for further selection. The second questionnaire (Form 2) was for households reporting owned or rented-in land, it was divided into fourteen parts and was spread over eight pages. For landless households, a short questionnaire (Form 3) was used. It contained all of the questions in Form 2, except for those relating to land and crops.

The AC 2010 questionnaires covered 10 of the 16 core items<sup>4</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

After manual editing, the data were keypunched at the Data Processing Centre (DPC) of the PBS, in Lahore. Then, the data were processed by computer programmers through computer programmes developed for the purpose. The programmers produced computer printouts as the first edits for each district. These edits were checked at the ACO against source documents, and errors were corrected. The second edit was produced by the programmers after processing the errors found during the first edit. This process continued until the data of a particular district were declared error-free. After this, tabulations were produced.

A tabulation plan comprising 90 tables was prepared at the time of census planning and preparation.

**11. CENSUS DATA QUALITY**

The most important consideration was to control the extent of sampling and non-sampling errors during the census. In addition, to ensure data quality, checks for internal consistencies and comparisons with other corresponding series were undertaken.

**12. DATA DISSEMINATION**

The census data were tabulated at district, province and country level and published in the following reports: (i) *All Pakistan Report*, which contains tabulations at country and province level; (ii) *Provincial Reports*, which contain tabulations at province and district level; (iii) two *Special Reports* (for Gilgit Baltistan and Azad Jammu & Kashmir). The census publication with final census results "Agricultural Census 2010" was released in April 2012. The census results were disseminated online.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

**Pakistan Bureau of Statistics.** 2012. Agricultural Census 2010 - Pakistan Report. In: *Pakistan Bureau of Statistics* [online]. Islamabad, Pakistan. [Cited 25 July 2019]. <http://www.pbs.gov.pk/content/agricultural-census-2010-pakistan-report>

**14. CONTACT**

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<sup>4</sup> The following core items were not covered: (i) "Sex of agricultural holder"; (ii) "Age of agricultural holder"; (iii) "Main purpose of production of the holding"; (iv) "Presence of aquaculture on the holding"; (v) "Presence of forest and other wood land on the holding"; and (vi) "Other economic production activities of the holding's enterprise".

# PAKISTAN – AGRICULTURAL CENSUS 2010 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>8 264 480</b>	<b>21 412 545</b>
Individual farms	8 212 838	21 054 681
Joint farms	51 642	357 864

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>8 264 480</b>	<b>21 412 545</b>
Holdings operated under one tenure form	n.a.	18 343 303
Legal ownership	n.a.	15 957 905
Rented from others	n.a.	2 385 398
Holdings operated under two or more tenure forms	n.a.	3 069 232

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Total</b>	<b>8 264 480</b>	<b>21 412 545</b>
1 parcel	n.a.	9 190 556
2–3 parcels	n.a.	7 370 647
4–5 parcels	n.a.	2 669 751
6–9 parcels	n.a.	2 041 340
10 parcels and over	n.a.	140 269

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>8 264 480</b>	<b>21 412 545</b>
Less than 1 ha	n.a.	1 689 511
1–1.99 ha	n.a.	2 431 810
2–4.99 ha	n.a.	6 159 031
5–9.99 ha	n.a.	3 793 730
10–19.99 ha	n.a.	2 723 748
20–39.99 ha	n.a.	1 678 093
40–59.99 ha	n.a.	568 075
60 ha and over	n.a.	2 368 524

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>8 264 480</b>	<b>21 412 545</b>
Cultivated area	7 884 985	17 249 079
Cropped land	7 829 558	16 617 694
Land temporarily fallow	334 125	631 385
Uncultivated area	1 550 463	4 163 463
Forest	129 940	187 316
Other	n.a.	3 976 153

LABOUR FORCE OF THE HOLDING	
	Number
<b>Members of holder's household engaged in agricultural activities</b>	<b>27 734 367</b>
Male	17 711 043
Female	10 023 324
<b>Total hired labour</b>	<b>28 670 428</b>
Male	19 482 941
Female	9 187 487
Permanent labour	1 678 404
Male	1 511 233
Female	167 171
Casual labour	26 992 024
Male	17 971 708
Female	9 020 316

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>n.a.</b>	
Cattle	6 066 474	24 114 463
Buffaloes	5 689 955	23 468 149
Sheep	1 323 049	15 025 647
Goats	6 294 528	45 738 230

FARMS REPORTING IRRIGATED AREA AS PERCENT OF CULTIVATED AREA		
	Holdings reporting	Area irrigated (ha)
<b>Total farms with irrigated area</b>	<b>6 347 581</b>	<b>14 477 193</b>
Under 51%	146 139	771 321
51% – 75.99%	53 327	249 900
76% – 100%	6 148 115	13 455 972

MACHINERY AND EQUIPMENT USED ON THE HOLDING	
	Used on the holding
Total tractors of all kinds	6 040 533
Combine harvesters	567 123
Other (machine-powered)	n.a.
Tubewell/pump	3 798 069
Thresher	7 326 063
Sheller	767 446
Reaper/harvester	753 082
Drill	2 150 962
Spray machine	4 230 489

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	n.a.	n.a.
Wheat	6 914 857	11 423 215
Rice	2 249 003	3 786 018
Maize	1 193 463	967 839
Vegetables and melons	507 790	587 368
Oilseed crops	459 565	509 491
Root/tuber crops	134 891	175 524
Leguminous crops	616 042	1 381 430
Sugar crops	896 923	1 064 002
Other temporary crops	n.a.	n.a.
Cotton	2 168 855	3 733 863
Fodder crops	2 722 409	2 443 119



## 1. HISTORICAL OUTLINE

The Agricultural Census (AC) 2010 was the first AC to be conducted in Palestine.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The AC was conducted according to the General Statistics Law No. 4 of 2000, which specifies that ACs should be carried out every ten years.

The Decision of the Cabinet of Ministers No. 12/92/09, issued on 26 January 2009, gave the Palestinian Central Bureau of Statistics (PCBS) the responsibility for implementing the agricultural census, in cooperation with the Ministry of Agriculture (MoA).

### *Institutional framework and international collaboration*

The AC was implemented by the PCBS, in cooperation with the Ministry of Agriculture (MoA) and the Union of Agricultural Work Committees. Joint funding from the Palestinian National Authority (PNA), the Islamic Development Bank (IDB), the World Bank (WB) and the European Union (EU) was used for this purpose.

### *Census staff*

The number of staff involved in the census operation was 1 159, of which 687 enumerators, 83 supervisors, 97 editors and coders, 103 data entry personnel and 189 others.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** from midnight of 30 September to 1 October 2010, for inventory items, such as on permanent crops, buildings and livestock.

**Reference period:** the agricultural year (from 1 October 2009 to 30 September 2010), for temporary crops, the use of agricultural materials and machinery, etc.

## 4. ENUMERATION PERIOD

The enumeration period for the AC 2010 was from 2 October to 14 November 2010 in the West Bank, and from 10 January to 20 February 2011 in the Gaza Strip.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production).

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production under single management<sup>1</sup> comprising all livestock kept and all land<sup>2</sup> used entirely or partially for agricultural production purposes, regardless of legal form, and above a certain threshold (see section 7 below). Common grazing lands and other land not assigned to an agricultural holding were not included in the AC. The AC covered both holdings in the household sector and holdings in the non-household sector.

## 6. GEOGRAPHIC COVERAGE

The census covered both rural and urban areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following minimum size limits of the holding were applied in the AC 2010:

- for cultivated land: half a dunum (0.05 ha) of cropped land under protective cover or one dunum (0.1 ha) of other cultivated land;
- for livestock: (i) any number of cattle or camels; (ii) at least five head of sheep, goats, or pigs, or a mixture thereof; (iii) at least 50 chickens or other poultry such as turkeys, ducks, or rabbits or a mixture thereof; or (v) at least three beehives.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was adopted to conduct the AC 2010. The census was carried out in a one-off operation, in two enumeration periods (see section 4).

<sup>1</sup> Single management may be exercised by an individual or household, jointly by two or more individuals or households, by a clan or tribe, or by a juridical person such as a corporation, cooperative or government agency.

<sup>2</sup> The land of the holding may consist of one or more parcels located in one or more separate areas, or in one or more territorial or administrative divisions, provided that the parcels share the same means of production, such as labour, farm buildings, machinery or draught animals.

**Frame**

The frame of the AC 2010 was established on the basis of the listing of holdings in the household sector, by visiting all households and identifying those that were involved in own-account agricultural activities (using the listing form). The listing was conducted during the census enumeration. The frame of the holdings in the non-household sector was built on the basis of the list provided by the MoA, followed by field visits of the enumerators.

**Complete and/or sample enumeration methods**

Complete enumeration was used to cover all agricultural holdings.

**Sample design (if sampling was used)**

Not applicable.

**Data collection methods**

Data collection for the AC 2010 was conducted using face-to-face interviews and paper questionnaires (the PAPI method).

**Questionnaire(s)**

Two forms were designed for the AC 2010. A listing form was used to list the agricultural holdings in the household sector. The second form was used for the enumeration of the agricultural holdings.

The AC 2010 census questionnaire covered 15 of the 16 core items<sup>3</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Special data processing programmes were developed and tested to capture the census data. Data entry was done at the premises of the PCBS. Data editing, coding, entry, checking and cleaning were finalized in June 2011 in the West Bank and in August 2011 in the Gaza Strip. The technical team followed up on the data processing, testing its accuracy and quality and comparing it with other data resources; the team also prepared the tables and the report on the final results of the census. The data entry programme was prepared using Oracle and Access. Data analysis was undertaken using SPSS.

**11. CENSUS DATA QUALITY**

The impact of errors on data quality was minimized, because of the high level of competency and training of the fieldwork team. A quality control system was established for all stages of the census, from the preparatory stage to the data collection, processing and dissemination stages, to ensure the control of fieldwork activities and the overall accuracy of census data. Census supervisors and team leaders in each governorate conducted a re-interviewing of households through random visits to households in the enumeration areas and by filling out parts of the listing and enumeration questionnaires.

**12. DATA DISSEMINATION**

The preliminary results were disseminated through the local mass media and the official website of the PCBS in April 2011. The final results were disseminated in December 2011 and are available in the form of printed reports, CD-ROMs and on the website of the PCBS.<sup>4</sup>

**13. DATA SOURCES**

**Palestinian Central Bureau of Statistics.** 2011. *Agricultural Census 2010, Final Results - Palestinian Territory*. Ramallah, Palestine. (also available at <https://www.pcbs.gov.ps/Downloads/book1818.pdf>).

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<sup>3</sup> The exception was the item "Other economic production activities of the holding's enterprise".

<sup>4</sup> In total, there are 19 final census reports (for Palestine, the West Bank, the Gaza Strip and the 16 governorates). In addition, five analytical reports were produced. These are all available at: [www.pcbs.gov.ps/pcbs\\_2012/Publications.aspx](http://www.pcbs.gov.ps/pcbs_2012/Publications.aspx)

## PALESTINE – AGRICULTURAL CENSUS 2010 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>111 310</b>	<b>120 706</b>
Civil persons	111 202	119 751
Juridical persons	108	955

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>111 310</b>	<b>120 706</b>
Holdings operated under one tenure form	103 938	n.a.
Owned or owner-like possession	95 149	n.a.
Rented	4 577	n.a.
Held under traditional form	362	n.a.
Government land	337	n.a.
Not stated	3 513	n.a.
Holdings operated under two or more tenure forms	7 372	n.a.

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>111 310</b>	<b>120 706</b>
Up to 0.3 ha	46 982	n.a.
0.3–0.6 ha	23 348	n.a.
0.6–1.0 ha	13 456	n.a.
1.0–2.0 ha	13 763	n.a.
2.0–3.0 ha	5 319	n.a.
3.0–4.0 ha	2 598	n.a.
4.0–5.0 ha	1 531	n.a.
5.0–6.0 ha	1 097	n.a.
6.0–7.0 ha	645	n.a.
7.0–8.0 ha	521	n.a.
8.0 ha and over	2 050	n.a.

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>111 310</b>	<b>120 706</b>
Cultivated land	n.a.	102 928
Cropland	n.a.	95 717
Land temporarily fallow	n.a.	6 816
Wooded land	n.a.	345
Permanent crops (nurseries)	n.a.	50
Uncultivated land	n.a.	17 778
Permanent meadows and pastures	n.a.	16 125
Land under buildings	n.a.	747
Other land	n.a.	906

HOLDINGS BY HOUSEHOLD SIZE		Number
<b>Total</b>		<b>111 310</b>
1 person		2 245
2–3 persons		16 789
4–5 persons		22 609
6–9 persons		55 302
10 persons and over		14 264
Not stated		1
Not applicable		100

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total engaged in agricultural activities on the holding</b>		<b>276 332</b>
Male		181 622
Female		94 710

EMPLOYEES WORKING ON THE HOLDING, BY SEX		Number
<b>Total employees</b>		<b>292 032</b>
Male		194 591
Female		97 441
Unpaid family members		276 332
Male		181 622
Female		94 710
Permanent employees		15 700
Male		12 969
Female		2 731

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	2 890	33 925
Sheep	21 096	567 236
Goats	10 903	219 364
Equines	n.a.	n.a.
Horses	n.a.	3 632
Mules	n.a.	1 017
Asses (donkeys)	n.a.	16 962
Camels	319	1 521
Poultry (1 000 head)	n.a.	n.a.
Chickens	n.a.	6 251
Broilers	3 054	4 706
Layers	619	1 545
Turkeys	n.a.	167
Insects		
Bees (hives)	2 152	38 216

HOLDINGS, BY MAIN PURPOSE OF PRODUCTION		Holdings
<b>Total producing mainly for</b>		<b>111 310</b>
Home consumption		78 815
Sale		30 101
Not stated		2 394

MACHINERY AND EQUIPMENT BELONGING TO THE HOLDING		Holdings
Four-wheel tractors		5 798
Track-laying tractors		24
Ploughs (machine-powered)		932
Other (machine-powered)		n.a.
Cultivator		1 656
Rotary tiller		459
Grain drill		53
Sprayer		2 138
Combine		59
Miller		7
Milking machine		298
Cream separator		57
Seeder		13
Disk harrows		14
Potatoes planter		5
Potatoes planter		5

## 1. HISTORICAL OUTLINE

The first decennial agricultural census in the Philippines was conducted in 1960, followed by censuses carried out in 1971, 1981, 1991 and 2002.<sup>1</sup> The 2012 Census of Agriculture and Fishery (CAF) is the sixth in a series of decennial agricultural censuses and the fifth in the series of decennial censuses of fisheries to be conducted in the country.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the CAF 2012 was provided by:

- Commonwealth Act (CA) No. 591, which authorized the then-National Statistics Office (NSO) “to prepare for and undertake all censuses of population, agriculture, industry and commerce”.
- Executive Order (EO) No. 352 (Designation of Statistical Activities that will Generate Critical Data for Decision-Making of the Government and Private Sector), which provided for the conduct of a census of agriculture every ten years;

### **Institutional framework and international collaboration**

The former National Statistics Office (NSO) was mandated to conduct agricultural censuses. The planning and preparation of the CAF 2012 started in 2009, through the creation of the Census Steering Committee (CSC) and Working Groups to provide overall directions for the CAF's various activities. The NSO Administrator chaired the CSC. The 2012 CAF was funded by the Government of the Philippines.

### **Census staff**

A total of 43 778 enumerators and 21 477 team supervisors were hired for the census fieldwork.

## 3. REFERENCE DATE AND PERIOD

### **Reference days:**

- 31 March 2013, for inventory items such as number of livestock, and for data collected for establishment-based agriculture operations;
- the day of the interview, for the number of livestock (including poultry) in household-based agriculture operations.

**Reference period:** the calendar year (January to December 2012), for the land area of the holding, the number of parcels, land tenure and land use, crops, irrigation, aquaculture and fishery.

## 4. ENUMERATION PERIOD

The enumeration of household-based holdings was conducted from 25 February to 30 April 2013.

The CAF 2012 Establishment Questionnaires were distributed in April 2013 and retrieved by June 2013, together with other questionnaires of the 2012 Census of Philippine Business and Industry (CPBI).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and animal production) activities, as well as aquaculture and fishing activities. The CAF 2012 for establishments constituted a rider to the CPBI 2012. A community survey was also conducted in all *barangays*.<sup>2</sup>

The **statistical units** of the CAF were agricultural holdings or farms, aquaculture farms (household-based and establishment-based), and units engaged in fishing activities (household-based and establishment-based).

The agricultural holding (farm) was defined as “any piece or pieces of land used wholly or partly for any agricultural activity, such as growing of crops, tending of livestock (including poultry) and other agricultural activities, and operated as one technical unit, by one person alone or with others, regardless of title, legal form, size or location”.

## 6. GEOGRAPHIC COVERAGE

The CAF 2012 covered the entire country, except for the municipalities of Baganga, Boston and Cateel in Davao Oriental, which were not covered because of the vast damage caused by Typhoon Pablo. Nevertheless, certain households located in these municipalities were enumerated in other municipalities, where they were temporarily relocated.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No thresholds were applied in the 2012 CAF. Holdings in government institutions were excluded from the census.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

A modular approach was envisaged for the CAF 2012. A core module was carried out on a complete enumeration basis to provide key structural data and the frame for the supplementary modules. Along with the core census module, a community-based module was also administered in all *barangays*.

The CAF 2012 was supposed to conduct sample-based supplementary modules, which would collect more in-depth structural data on irrigation, cropping pattern, aquaculture and fisheries. However, because the former four statistical agencies transitioned into the Philippine Statistics Authority (PSA), these were not carried out.

<sup>1</sup> Censuses of agriculture were also conducted in 1903, 1918, 1939 and 1948 in conjunction with population censuses, although on a limited scale.

<sup>2</sup> The smallest administrative division in the Philippines, the *barangay* is the native Filipino term for a village, district or ward.

**Frame**

The census listing covered all households, to identify those with holdings operated by agricultural operators or by aquaculture and fishing operators. All establishments with agriculture, aquaculture and fisheries as their main kind of business or industry were also covered in the CAF 2012. These were the same establishments covered in the CPBI 2012.

**Complete and/or sample enumeration methods**

The CAF 2012 was conducted by complete enumeration.

**Sample design (if sampling was used)**

Not applicable.

**Data collection methods**

Two methods were used for data collection: (i) face-to-face interviews using paper questionnaires (the PAPI method), for data collection from all households for the core and community modules; and (ii) a self-administered paper questionnaire was used for establishments.

**Questionnaire(s)**

Five household-based questionnaires (forms),<sup>3</sup> four establishment-based questionnaires<sup>4</sup> and one a community module questionnaire (form 6)<sup>5</sup> were designed and used for the CAF 2012.

The CAF questionnaires covered 15 of the core items recommended in the WCA 2010.<sup>6</sup>

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online. Microdata are available upon request.

**10. DATA PROCESSING AND ARCHIVING**

The Scan Stations and Data Entry Stations served as the processing centres for CAF 2012 machine processing. The activities performed in Scan Stations included receipt of questionnaires after manual processing, scanning of forms and maps, and interpretation of Optical Mark Recognition (OMR) data items. Anonymization was applied to the database.

**11. CENSUS DATA QUALITY**

Four pre-tests were carried out to examine the feasibility and cost-effectiveness of new and alternative field operations, enumeration procedures and questionnaire content.

A pilot census was conducted, providing the opportunity to test all aspects of the census operation in advance of the main census activities. This ensured the smooth operation and success of the census.

**12. DATA DISSEMINATION**

Census results were disseminated through printed publications and online. Special releases and reports, including statistical tables, were disseminated through the PSA's website.<sup>7</sup> Access to microdata is available upon request.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

**Philippine Statistics Authority.** 2017. *Census of Agriculture and Fisheries, Agriculture 2012*. Manila, Republic of the Philippines. (also available at [https://psa.gov.ph/sites/default/files/CAF2012Agri\\_Philippines.pdf](https://psa.gov.ph/sites/default/files/CAF2012Agri_Philippines.pdf)).

**Philippine Statistics Authority.** 2019 *Open Stat* [online]. Manila, Republic of the Philippines. [Cited 5 September 2019]. <http://openstat.psa.gov.ph/>

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<sup>3</sup> The following forms were designed and used for the CAF 2012: Form 1 – for listing the households; Form 2 – Household Roster (the CAF 2012 Form 2 questionnaire was designed to record the sociodemographic characteristics of all members of agriculture, aquaculture and fishing operators' households identified during the listing); Form 3 – Module for Agriculture; Form 4 – Module for Aquaculture; and Form 5 – Module for Fishing.

<sup>4</sup> Form 24 – Agriculture Establishment (Growing of Crops); Form 25 – Agriculture Establishment (Livestock and Poultry Raising); Form 26 – Aquaculture Establishment; and Form 27 – Fishing Establishment.

<sup>5</sup> For community-level data collection.

<sup>6</sup> The core item that was not covered is: "Other economic production activities of the holding's enterprise".

<sup>7</sup> See PSA's website at <https://psa.gov.ph/content/census-agriculture-and-fisheries-caf>

## THE PHILIPPINES – 2012 CENSUS OF AGRICULTURE AND FISHERY – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>5 563 138</b>	<b>7 271 446</b>
Civil persons	5 557 998	6 861 993
An individual	5 512 501	6 786 935
Co-holder	45 497	75 059
Juridical persons	5 140	409 453

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>5 563 138</b>	<b>7 271 446</b>
Holdings operated under one tenure form	5 034 385	6 336 952
Fully owned/owner-like farms	3 452 564	4 366 075
Tenanted farms	814 309	1 071 114
Leased/rented farms	165 087	308 601
Rent-free farms	425 264	173 811
Other single forms of tenure of farm	177 161	417 351
Holdings operated under two or more tenure forms	528 753	934 494

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Total</b>	<b>5 563 138</b>	<b>7 271 446</b>
1 parcel	3 903 857	3 750 991
2–3 parcels	1 520 737	2 803 316
4–5 parcels	113 628	465 873
6–9 parcels	22 716	166 095
10 parcels and over	2 200	85 169

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>5 563 138</b>	<b>7 271 446</b>
Less than 0.500 ha	2 162 500	277 880
0.500–0.999 ha	1 000 183	594 806
1.000–2.999 ha	1 779 364	2 586 935
3.000–7.000 ha	520 796	2 123 794
7.001–9.999 ha	44 400	365 653
10.000–24.999 ha	50 199	662 624
25.000–49.999 ha	3 943	127 348
50.000 ha and over	1 753	532 406

LAND USE		
	Number of parcels	Area (ha)
<b>Total</b>	<b>7 897 371</b>	<b>7 271 446</b>
Agricultural land	5 658 232	6 913 189
Arable land	3 851 656	3 505 307
Land under temporary crops	3 832 329	3 474 036
Land under temporary meadows	8 754	14 548
Land temporarily fallow	10 573	16 722
Land under permanent crops	1 801 683	3 357 486
Permanent meadows and pastures	4 893	50 396
Forest and other wooded land	6 874	44 514
Land under livestock and poultry raising	69 526	59 101
Land under aquaculture	1 354	1 780
Other land	7 184	5 141
Homelot	2 154 201	247 721

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>25 034 610</b>
Engaged in agricultural activities on the holding	8 512 092
Aged 15 years and over	8 355 904
Aged 10 to 15 years	156 188

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	882 108	1 995 841
Buffaloes	1 160 889	1 790 681
Sheep	14 918	64 361
Goats	693 854	2 291 894
Pigs/swine	1 549 126	7 709 133
Horses	170 714	229 465
Poultry (1 000 head)	n.a.	n.a.
Chickens	4 590 716	146 585
Ducks	638 902	8 938
Other poultry	68 225	2 756
Other animals	7 485	
Insects		
Bees (hives)	2 721	n.a.
Silkworms	2 446	n.a.
Other worms or insects	3 883	n.a.

IRRIGATION BY LAND USE TYPES		
	Number of parcels	Area irrigated (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Land under temporary crops	1 791 171	1 555 668
Land under permanent crops	80 940	186 133
Land under temporary meadows and pastures	989	1 875
Land under permanent meadows and pastures	504	5 371

PERMANENT CROPS <sup>1</sup>		
	Number of parcels	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Tropical and subtropical fruits	n.a.	n.a.
Bananas	249 444	214 413
Mangoes	36 394	41 849
Papayas	3 780	2 110
Nuts	n.a.	n.a.
Cashew nuts	3 377	3 892
Oilseed crops	n.a.	n.a.
Oil palms	2 909	34 087
Palm trees	747	5 648
Coconuts	941 232	1 480 928
Beverage crops and spice crops	n.a.	n.a.
Cocoa	24 067	17 278
Coffee	n.a.	27 675
Other permanent crops	n.a.	n.a.
Rubber	93 639	145 923
Abaca	49 924	52 173
Bamboo	2 786	2 545

<sup>1</sup> Data refer to permanent crops in compact plantations.

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) in Saudi Arabia was conducted in 1973/1974, the second in 1982, the third in 1999 and the fourth in 2015.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

In accordance with the Council of Ministers' Resolution No. 11 of 13 January 2015, the General Authority for Statistics (GASat) was mandated to conduct surveys, prepare statistical research and studies, and provide statistical data and services to the business sector and private establishments.

### **Institutional framework and international collaboration**

Starting from 2015, GASat is responsible for conducting agricultural censuses in Saudi Arabia. In technical and methodological terms, the AC 2015 was organized by GASat. Previously, the Ministry of Agriculture was in charge of the ACs.

### **Census staff**

The census staff involved in the census operation (enumerators, supervisors, etc.) amounted to 3 550 individuals.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 February 2015, for inventory items, such as livestock numbers;<sup>1</sup>

**Reference period:** the agricultural year (from 1 March 2014 to 28 February 2015), for agricultural labour, agricultural crops, machinery and equipment, etc.

## 4. ENUMERATION PERIOD

The enumeration was conducted from 12 February to 15 April 2015.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered the holdings engaged in agricultural activities (crop and animal production). The aquaculture activities associated with an agricultural holding were also included in the census scope.

The **statistical unit** was the agricultural holding, defined as an economic unit of the agricultural production of crops and livestock, operated under single management, which covers all animals included in it and all lands used fully or in part for agricultural production, regardless of ownership, legal form or area. Two types of agricultural holdings were distinguished: "traditional" holdings and "specialized" holdings.

## 6. GEOGRAPHIC COVERAGE

The AC covered the agriculturally productive regions of the entire country, as well the stockbreeders in the desert (holdings without land).

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

To be covered by the AC, agricultural holdings were to have an area of one *dunam* (equivalent to 0.1 ha) or more; to raise livestock in a stable manner; or to have at least one camel, one cow, 15 head of sheep or goats, 30 chicken, or five beehives. The AC 2015 did not include nurseries.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The census was conducted using the classical approach.

### **Frame**

The frame for the AC 2015 was built during the first census phase (from 30 April to 28 June 2014), which was devoted to: (i) "numbering and counting" the agricultural holdings with operated lands and the stockbreeders not included in this category; and (ii) "counting" the stockbreeders in the desert (holdings without land).

### **Complete and/or sample enumeration methods**

The AC 2015 used the complete enumeration method.

### **Sample design (if sampling was used)**

No sampling was used.

<sup>1</sup> Corresponding to Dhul-Hijjah 4th, 1436 H.

**Data collection method(s)**

The data for traditional and specialized holdings were collected using the CAPI method, whereas the data for stockbreeders in the outskirts of villages and the desert were first collected on paper, to be recorded later using tablets. Data collection was conducted using an objective method (measurement of area or counting of livestock).<sup>2</sup>

**Questionnaire(s)**

A single questionnaire was used for data collection. The AC 2015 covered 14 of the 16 core items recommended in the WCA 2010.<sup>3</sup>

**9. USE OF TECHNOLOGY**

The CAPI method was used for data collection from traditional and specialized holdings. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Handheld devices and manual data entry were used for different categories of census units (see section 8, “Data collection methods”, above).

**11. CENSUS DATA QUALITY**

Checks were incorporated into the electronic questionnaire (for CAPI), to improve the reliability and consistency of the primary data collected.

**12. DATA DISSEMINATION**

The results of the AC 2015 were disseminated through the GASat website.

**13. DATA SOURCES**

**General Authority for Statistics, the Kingdom of Saudi Arabia.** 2019. Census of Agriculture 2015. In: *General Authority for Statistics* [online]. Riyadh, the Kingdom of Saudi Arabia. [Cited 28 July 2019] <https://www.stats.gov.sa/en/22>

**14. CONTACT**

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E-mail: [info@stats.gov.sa](mailto:info@stats.gov.sa)

Website: <https://www.stats.gov.sa/en/>

<sup>2</sup> Data that could not be obtained by measurement or counting were obtained by asking the holder or the representative thereof.

<sup>3</sup> The exceptions were: (i) “Presence of forest and other wooded land on the holding”; and (ii) “Other economic production activities of the holding's enterprise”.



## SAUDI ARABIA – AGRICULTURAL CENSUS 2015 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>346 829</b>	<b>3 421 854</b>
Holdings without land	61 663	
Holdings with land	285 166	3 421 854
Civil persons	278 902	3 002 858
Juridical persons	6 257	415 911
Other	7	3 084

LAND TENURE		
	Holdings	Area (ha)
<b>Total holdings with land</b>	<b>285 166</b>	<b>3 421 854</b>
Owned	272 447	3 199 892
Rented	11 549	206 714
Owned and rented	1 141	15 244
Other form of tenure	29	51

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>346 829</b>	<b>3 421 854</b>
Holdings without land	61 663	
Holdings with land	285 166	3 421 854
Less than 0.5 ha	131 192	22 859
0.5–1 ha	32 802	22 029
1–2 ha	28 616	37 689
2–5 ha	34 694	105 019
5–10 ha	24 455	155 173
10–20 ha	12 523	165 085
20–50 ha	9 771	273 500
50–100 ha	4 548	303 077
100–200 ha	3 408	404 315
200–500 ha	2 363	630 404
500 ha and over	794	1 302 706

HOLDERS WITH AGRICULTURAL LAND, BY SEX		
	Number	Area operated (ha)
<b>Total holders with land</b>	<b>284 612</b>	<b>3 125 211</b>
Male	280 552	3 094 798
Female	4 060	30 412

HOLDERS, BY AGE	
	Number
<b>Total holders</b>	<b>346 239</b>
15–25 years	2 446
25–34 years	18 670
35–44 years	51 058
45–54 years	82 300
55–64 years	88 072
65 years and over	103 693

HOLDINGS WITH AGRICULTURAL LAND, BY HOUSEHOLD SIZE	
	Number
<b>Total agricultural holders with land</b>	<b>284 612</b>
1 person	21 699
2–3 persons	26 984
4–5 persons	38 748
6–9 persons	110 641
10 persons and over	86 540

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>2 258 835</b>
Engaged in agricultural activities on the holding	632 149

HIRED MANAGERS AND EMPLOYEES ON THE HOLDING	
	Number
<b>Total hired managers</b>	<b>5 755</b>
<b>Total employees</b>	<b>810 819</b>
Permanent employees	505 098

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	n.a.	
Cattle	7 338	354 276
Sheep	64 396	9 055 438
Goats	48 881	3 563 017
Camels	13 760	471 704
Poultry (1 000 head)	n.a.	n.a.
Chickens	4 015	619
Ducks	717	24
Geese	140	5
Turkeys	98	5
Other animals	n.a.	n.a.
Rabbits	2 925	154 390
Quail	219	433 695
Pigeons	13 221	2 980 315
Ostriches	137	1 676
Peacock	119	1 312
Other	4	7 375
Insects		
Bees (hives)	n.a.	38 878

HOLDINGS IN THE HOUSEHOLD SECTOR BY MAIN PURPOSE OF PRODUCTION		
	Holdings	Area (ha)
<b>Total producing mainly for</b>	<b>285 166</b>	<b>3 421 854</b>
Home consumption	39 431	16 964
Sale	245 735	3 404 890

SOURCES OF IRRIGATION WATER		
	Holdings	Area irrigated (ha)
<b>Total</b>	<b>285 166</b>	<b>3 421 855</b>
Rain	97 098	103 314
Springs	281	283
Dams	184	550
Flowing wells	60	6 876
Manual wells	49 857	176 062
Artesian wells	114 407	3 095 149
Other	23 279	39 621

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Ploughing machine	n.a.	98 388
Other (machine-powered)	n.a.	
Pivotal sprayer	n.a.	57 912
Electric dynamo	n.a.	22 789
Electrical pump – plunger	n.a.	164 006
Machine with strength less than 200 horsepower	n.a.	46 109

## 1. HISTORICAL OUTLINE

The first attempt to conduct an agricultural census in the country was the Census of Production, held in 1921. Partial agricultural censuses were then carried out in 1924 and 1929. Subsequently, agricultural censuses were carried out in 1946, 1952, 1962, 1973, 1982 and 2002. The present metadata review and data refer to the Economic Census – Agricultural Activities<sup>1</sup> (EC-AA) 2013/2014.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The legal power to conduct censuses and surveys is assigned to the Department of Census and Statistics (DCS) of the Ministry of National Policies and Economic Affairs (MNPEA), by: Statistics Ordinance (rev. 1956) Chapter 372, Ordinance 44 of 1935, Act No. 22 of 1955, Census Ordinance, Section 2, Chapter 143.

The EC-AA 2013/2014 was taken in accordance with the Census Amendment Bill, gazetted and issued on 25 March 2013.

### *Institutional framework and international collaboration*

The Director General of the DCS was charged with the responsibility of conducting the EC. He was assisted by a team of senior officials at the head office, who were designated as Deputy Superintendents of Census by means of a special Gazette notification. District Secretaries and Government Agents of the Districts were appointed as Commissioners of Census within their respective areas of authority. The Commissioners were assisted in their task by Deputy Commissioners.

### *Census staff*

The number of staff involved in the census operation comprised 15 806 persons, including 14 021 enumerators, 1 320 supervisors and 465 coordinators.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 30 June 2014, for inventory items.

**Reference period:** from October 2013 to September 2014, for other items.

## 4. ENUMERATION PERIOD

Field data collection was performed from October to November 2014.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production) and aquaculture activities.

The **statistical unit** was the agricultural holding, which consists of all land and/or livestock used wholly or partly for agricultural production, which is operated under one operational status, regardless of land ownership or type of tenure; the land can consist of one or more parcels, which can be located in one Divisional Secretary's Division or can be spread across various Divisional Secretary's Divisions.

The statistical units covered by the census were distributed according to the following two sectors: (i) the "estate" or large holding sector; and (ii) the small holding sector (SHS). An agricultural holding with the same tenure having at least 20 acres (8.09 ha) of land is considered an "estate". SHS holdings were classified into two groups, namely:

- "marginal holdings" – holdings operating less than or equal to 40 perches (0.10 ha), having some form of cultivation, rearing livestock or aquaculture, and the production of which is mainly for home consumption; and
- "economically viable holdings" – holdings operating more than 40 perches (0.10 ha) or producing agricultural output, mainly for marketing. From this category, information was collected through the Small Holding 2 Form (SH-2).

## 6. GEOGRAPHIC COVERAGE

The EC-AA covered all 25 administrative districts in the island, including urban and rural areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

"Marginal holdings" (see section 5, above) were not enumerated in the EC-AA.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The EC-AA was conducted in two stages:

- Stage 1: listing of estates (conducted in 2013, form E1)
- Stage 2: this included the following activities and was undertaken in the third quarter of 2014: (i) data collection from estates (form E2); (ii) listing of small holdings (using SH1); and (iii) data collection from small holdings (using SH2).

As part of the EC-AA 2013/2014 programme, a community survey and a survey on household food security were carried out.

<sup>1</sup> The EC 2013/2014 covered: (i) the agriculture sector ("EC 2013/14 – Agricultural activities") and (ii) the industry, trade and service sectors ("EC 2013/14 – Industry, Trade and Services").

**Frame**

The information provided by the Population and Housing Census 2011 was used as a basis to identify *small agricultural holdings*. A complete enumeration was carried out to list all small holdings (using the listing form SH1 for each “census block” of a *Grama Niladhari*, or GN). To elaborate the list for the *estates*, a separate listing activity was carried out by GN (using Form E1 for each census block of a GN).

**Complete and/or sample enumeration method**

Complete enumeration was applied to collect the data from the agricultural holdings (using census questionnaires E2 and SH2; see the “Questionnaires” subsection below).

Sampling was applied for the food security survey.

**Sample design (if sampling was used)**

Two-stage stratified sampling was used to collect data for the food security survey. The sample size was 28 000 households (or 1.2 percent of the total number of households).

**Data collection method(s)**

Face-to-face interviewing (the PAPI method) was used for data collection.

**Questionnaire(s)**

Two listing forms were used for the listing operation: (i) form E1 (for *estates*) and (ii) form SH1 (for small holdings). Two types of questionnaires were used for holding-level data collection: (i) E2 (for *estates*) and (ii) SH2 (for small holdings).

Along with the above census forms, two other questionnaires were used: (i) a community-level questionnaire and (ii) a food security questionnaire.

The EC-AA 2013/2014 covered all 16 core items recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

New technology was used for data capturing (optical scanning) and for the dissemination of census results (on the website of the DCS).

**10. DATA PROCESSING AND ARCHIVING**

The census questionnaires were scanned and then the census data processed and tabulated by the staff of the Agriculture and Environmental Statistics Division of the DCS, with the assistance of the Information and Communication Technology Division.

**11. CENSUS DATA QUALITY**

A pre-test and a pilot census were conducted to test all census tools.

**12. DATA DISSEMINATION**

The census report with final results for the small holding sector (at district level) and the estate sector were made available to users in 2016–2017. Summarized district data were disseminated through the website of the DCS.

**13. DATA SOURCES**

**Department of Census and Statistics.** 2019. Publications. In: *Department of Census and Statistics* [online]. Colombo, Sri Lanka. [Cited 13 September 2019]. <http://www.statistics.gov.lk/page.asp?page=Publications>

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

**14. CONTACT**

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NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>4 353 121</b>	<b>2 283 753</b>
Small holding sector	4 345 674	1 879 472
Holdings operating above 0.1 ha	2 311 343	1 782 478
Holdings operating less than or equal to 0.1 ha	2 034 331	96 994
Large holding sector	7 447	404 281

DISTRIBUTION OF HOLDINGS ABOVE 0.1 HA, BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>2 318 790</b>	<b>2 186 759</b>
Less than 0.2 ha	369 774	n.a.
0.2–0.4 ha	564 050	n.a.
0.4–0.8 ha	589 523	n.a.
0.8–1.2 ha	317 079	n.a.
1.2–1.6 ha	192 996	n.a.
1.6–2.0 ha	93 436	n.a.
2.0–2.8 ha	61 947	n.a.
2.8–4.0 ha	84 402	n.a.
4.0–8.0 ha	33 404	n.a.
8.0 ha and over	12 179	n.a.

LAND USE, FOR HOLDINGS ABOVE 0.1 HA		
	Holdings	Area (ha)
<b>Total</b>	<b>2 318 790</b>	<b>2 186 759</b>
Agricultural land	n.a.	1 992 421
Arable land	n.a.	885 810
Paddy land prepared for cultivation	n.a.	693 059
Temporary crops	n.a.	177 434
Abundant paddy land	n.a.	15 318
Land under permanent crops	n.a.	1 004 346
Permanent meadows and pastures	n.a.	102 266
Land under forest	n.a.	42 275
Other land	n.a.	152 062

HOLDERS IN SMALL HOLDING SECTOR FOR HOLDINGS ABOVE 0.1 HA, BY SEX AND AGE		Number
<b>Total</b>		<b>2 311 366</b>
Male		1 879 633
Female		431 733
10–19 years		1 669
Male		1 321
Female		348
20–29 years		81 641
Male		68 602
Female		13 039
30–39 years		384 304
Male		334 463
Female		49 841
40–49 years		556 815
Male		478 161
Female		78 654
50–59 years		591 795
Male		480 839
Female		110 956
65 years and over		695 142
Male		516 247
Female		178 895

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total members</b>		<b>9 133 268</b>
Male		4 519 152
Female		4 614 116

LIVESTOCK		Head
Cattle		1 124 097
Buffaloes		327 909
Sheep		8 184
Goats		383 472
Pigs/swine		127 615
Poultry (1 000 head)		n.a.
Chickens		24 437
Insects		
Bees (hives)		30 506

MACHINERY AND EQUIPMENT		Used on the holding (units)
Four-wheel tractors		312 432
Two-wheel tractors		538 680
Combine harvesters		178 884
Other (machine-powered)		n.a.
Sprayer		88 193
Thresher with winnowing machine		258 121
Thresher		109 023
Winnowing fan		66 452
Agricultural water pump		160 761
Seeding machine		1 278
Reaper		68 317
Milking machine		865
Agricultural grass cutter		22 923
Digging machine		4 601
Tea harvesting machine		365

TEMPORARY CROPS HARVESTED		Area (ha)
<b>Total</b>		<b>n.a.</b>
Rice		693 059
Sugar cane		11 621

## 1. HISTORICAL OUTLINE

The Census of Agriculture (CA) 2013 was the first comprehensive CA to be conducted in the Republic of Tajikistan. Until 2013, only specialized agricultural censuses were conducted, such as the census of crop sown areas, the livestock census and the census of permanent crops.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA legislation included the following:

- Law on “State Statistics”, of 12 January 2010, No. 588;
- Resolution of the Government of 1 August 2011, No. 358, on “The Census of Agriculture of the Republic of Tajikistan in 2013”;
- Resolution of the Government of 31 May 2012, No. 291, on “Additional Measures for the Census of Agriculture of the Republic of Tajikistan in 2013”, which set up the Republican Commission for the CA and approved the Regulation on the Republican Commission for the CA.

### **Institutional framework and international collaboration**

The institution in charge of the organization and carrying out of the CA is the Statistical Agency (SA), under the President of the Republic of Tajikistan. To facilitate the implementation of the CA, republican and regional commissions for the CA were established in accordance with the Government’s decisions. For the implementation of the CA, Tajikistan received technical assistance from FAO and financial support from the European Union (EU).

### **Census staff**

Over 6 000 census staff were involved in the data collection process, including 3 200 enumerators.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 November 2013, for items related to livestock, agricultural machinery and equipment, etc.

### **Reference periods:**

- agricultural year 2013 (from 1 November 2012 to 31 October 2013), for land use, use of pesticides, fertilizers, irrigation, etc.;
- calendar year 2012, for loans received for agricultural purposes.

## 4. ENUMERATION PERIOD

Enumeration was carried out from 15 November to 15 December 2013, except for the areas that were difficult to access; here, the census data were collected from 15 September to 15 October 2013.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

### **Scope of the census**

The CA covered the units engaged in crop and animal production. Some data on aquaculture activities carried out in association with the agricultural production activities of agricultural producers were also collected.

### **Statistical unit**

The following categories of agricultural producers were distinguished in the CA: (i) in the non-household sector – agricultural enterprises with any organizational and legal form, subsidiary farms of enterprises and institutions, and *dekhkan* farms; (ii) in the household sector – agricultural production households and the households that were members of horticultural associations.

## 6. GEOGRAPHIC COVERAGE

The CA 2013 was carried out throughout the country, in both rural and urban areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No threshold was applied in the CA 2013.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The CA 2013 was carried out using the classical approach.

### **Frame**

The census frame was established using the available statistical and administrative data sources.

### **Complete or/and sample enumeration methods**

Complete enumeration was used in the CA 2013.

**Sample design**

Not applicable.

**Data collection method(s)**

Face-to-face interviewing using a printed questionnaire (the PAPI method) was applied to collect census data from the agricultural production households. Self-interviewing using paper questionnaires was applied to collect census data from agricultural holdings in the non-household sector.

**Questionnaires**

Two types of census questionnaire were applied: (i) Form 1-AP was used to collect data from agricultural producers in the non-household sector and (ii) Form 2-AP was used for the household sector.

The CA questionnaire included 13 of the 16 core items recommended in the WCA 2010<sup>1</sup>.

**9. USE OF TECHNOLOGY**

No information on the use of new technology was provided in the census reports available.

**10. DATA PROCESSING AND ARCHIVING**

The AC data were captured manually and processed during the period February–September 2014.

**11. CENSUS DATA QUALITY**

The pilot census was conducted in 2012 and its findings were used to finalize the census methodology and tools.

**12. DATA DISSEMINATION**

Preliminary census results were released in 2017 and the final results in 2019. Census results were produced at national and subnational level.

**13. DATA SOURCE**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

**Statistical Agency under the President of the Republic of Tajikistan.** 2018. *Census of Agriculture 2013 in the Republic of Tajikistan*. Dushanbe, the Republic of Tajikistan.

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<sup>1</sup> The following core items were not collected in the CA 2013: (i) "Main purpose of production of the holding"; ii) "Presence of forests and other woodland on the holding"; and iii) "Other economic production activities of the holding's enterprise".

# TAJIKISTAN – CENSUS OF AGRICULTURE 2013 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total holdings with land</b>	<b>1 087 298</b>	<b>5 008 828</b>
Agricultural households	1 006 129	268 249
Dekhan farms	77 430	3 444 701
Agricultural enterprises <sup>1</sup>	3 739	1 295 878

LAND USE <sup>2</sup>		
	Holdings	Area (ha)
<b>Total area of agricultural enterprises and dekhan farms</b>	<b>81 169</b>	<b>4 740 577</b>
Agricultural land	81 169	4 734 488
Arable land	70 417	660 273
Land under meadows	2 623	20 865
Land under pastures	14 973	3 852 684
Land under permanent crops	26 157	169 242
Other (lode)	4 524	31 422
Non-agricultural land	502	6 089

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	591 753	2 104 739
Sheep	257 093	3 303 977
Goats	177 795	1 560 048
Horses	13 112	74 031
Poultry (1 000 head)	285 554	n.a.
Chicken	260 998	4 346
Geese	398	2
Ducks	1 373	12
Turkeys	7 386	45
Other	15 399	161
Insects		
Bees (hives)	n.a.	195 544

IRRIGATION BY LAND USE TYPES		
	Holdings	Area irrigated (ha)
<b>Agricultural enterprises and dekhan farms with irrigated land</b>	<b>70 093</b>	<b>639 236</b>
Arable land	61 201	477 899
Orchards	18 265	101 055
Vineyards	5 272	25 599
Others	n.a.	34 683

TEMPORARY CROPS PLANTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Wheat	305 510	298 848
Rice	19 816	12 538
Barley	33 716	56 995
Maize	72 850	17 066
Rye	10 163	11 000
Oats	1 935	3 307
Cucumbers	170 373	3 906
Carrots	234 771	7 106
Onions	213 811	14 041
Garlic	20 857	526
Cabbages	65 111	1 747
Pumpkin	46 248	790
Watermelons	21 124	13 503
Leguminous crops	86 753	15 973
Potatoes	542 656	42 244
Cotton	25 220	190 925
Tobacco	717	633
Sunflower	8 976	4 497
Fodder crops	214 701	27 014

PERMANENT CROPS		
	Holdings	Area
<b>Total orchards and vineyards</b>	<b>n.a.</b>	<b>167 991</b>
Orchards	91 936	130 178
Subtropical fruits	12 974	5 031
Citrus fruits	1 550	611
Pome fruits	62 276	49 221
Apples	59 583	41 214
Pears	13 857	4 674
Quinces	2 319	1 402
Other pome fruits	3 539	1 930
Stone fruits	40 561	70 004
Apricots	30 989	53 807
Cherries	8 341	1 877
Sour cherries	7 023	4 276
Peaches	6 648	5 528
Plums	2 169	1 862
Other stone fruits	1 819	2 655
Nuts	5 102	5 085
Berries	197	225
Other	7 648	n.a.
Vineyards (grapes)	72 984	37 813

<sup>1</sup> Agricultural enterprises of any organizational and legal form, subsidiary farms of enterprises and institutions.

<sup>2</sup> These data refer to holdings with land.

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) in Thailand was conducted in 1950, followed by the ACs carried out in 1963, 1978, 1993 and 2003. The sixth agricultural census, to which the metadata review and data presented here refers, was carried out in 2013.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

Under the Statistics Act, B.E 2550 (2007), the National Statistical Office (NSO) is mandated to conduct censuses and surveys on various statistics of the country.

### *Institutional framework and international collaboration*

The overall responsibility for the 2013 AC was delegated to the National Statistical Office (NSO), which implemented the census in cooperation with the Ministry of Agriculture, Department of Agricultural Extension. A National Census Administration Committee was formed, with representatives from the NSO and related ministries. Under the NSO, census subcommittees were set up for the operative coordination of the following operations: elaboration of census questionnaire and instructions manual; mapping; public relations; and data processing. The census was entirely funded through the national budget.

### *Census staff*

There were altogether approximately 21 100 persons involved in the census operations, of which 15 411 field enumerators (“village agricultural volunteers”), 3 081 field supervisors (“district agricultural extension officers”) and 2 604 NSO staff.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 May 2013, for items referring to the identification and main characteristics of the holdings, land use, land tenure, livestock numbers, machinery and equipment, etc.

**Reference period:** the 12 months preceding the census, for planted area, harvested area, production, destination of production, etc.

## 4. ENUMERATION PERIOD

The census was conducted from 1 May to 31 May 2013.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production) and aquaculture activities.<sup>1</sup> The AC 2013 included also sea salt farms.<sup>2</sup>

The **statistical (enumeration) unit** was the agricultural holding, defined as an economic unit of agricultural production (cultivating crops, rearing livestock) and aquaculture production, under single management, comprising all livestock kept and all land used wholly or partly for agricultural production purposes, performing an agricultural activity on owned agricultural land, or on land owned by other persons, or on public land, regardless of legal permission. The holding’s land could consist of one or more parcels, located in one or more separate areas; however, the land had to be in the same province.

## 6. GEOGRAPHIC COVERAGE

Data collection covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

All agricultural holdings, in the household and in the non-household sector, were covered by the census.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The AC 2013 used the classical approach. The census was carried out by applying a short-long questionnaire.

### *Frame*

A screening form was applied to all households, to identify and list agricultural holdings or fishing households.

### *Complete and/or sample enumeration methods*

A combination of complete and sample enumeration was applied for the AC 2013. The questionnaire was divided into two parts. The first part was used for collecting key agricultural structural items from all holdings, whereas the entire questionnaire was used for collecting census data from a sample of holdings.

<sup>1</sup> “Culturing fresh water”.

<sup>2</sup> “Salt evaporation ponds”.



**Sample design (if sampling was used)**

A systematic sampling method was applied to draw the sample of agricultural holders from each EA. The sampling fraction in each EA was 1 in 4 (the sample comprised 25 percent of the total number of holdings). The selected agricultural holders were enumerated using the entire questionnaire (sections 1-16).

**Data collection method(s)**

Data were collected by means of electronic devices (tablets), using the CAPI method.

**Questionnaire(s)**

In the AC 2013, one questionnaire was used for data collection. It was divided into two parts: one part (sections 1–10) was used for all holdings, while the other (sections 11–16) – for sampled holdings.

The AC 2013 questionnaire covered all 16 core items recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

New technology was used for data collection (CAPI)<sup>3</sup> and for the dissemination of census results (online).

**10. DATA PROCESSING AND ARCHIVING**

After the data collection stage, during which the census information was collected using electronic devices (tablets), and after initial checking during the fieldwork, the data were sent to the NSO server for further processing, to verify data consistency, accuracy and coverage. After final checking for correctness and completeness, the census data were further processed for statistics tabulations and summarized to report the census results at provincial, regional and country level.

**11. CENSUS DATA QUALITY**

After the census fieldwork was completed, the NSO carried out a PES, to evaluate the quality of the census data. The PES was conducted for all households of the selected EAs throughout the country.<sup>4</sup>

**12. DATA DISSEMINATION**

The reports, with preliminary and final census results, were published in 2013 and 2014, respectively. The census results were disseminated at provincial, regional and national levels. The census results are available on the NSO's website.

**13. DATA SOURCES**

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

**National Statistical Office of Thailand.** 2014. Agricultural census. In: *National Statistical Office* [online]. Bangkok, Thailand. [Cited 28 July 2019] [http://web.nso.go.th/en/census/agricult/cen\\_agri03.htm](http://web.nso.go.th/en/census/agricult/cen_agri03.htm)

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<sup>3</sup> Use of CAPI made it possible to: (i) enable census staff to immediately check for data consistency and completeness; (ii) reduce the time required for data processing and present results in a timely manner; (iii) enable identification of the location of each enumerator's field operation through GPS, which enhanced the quality control of the enumerator's work according to their assigned EAS; and (iv) constantly upload data to the server in the cloud computing system.

<sup>4</sup> The purpose of the PES was to estimate coverage and content errors (for selected characteristics). Stratified single-stage sampling was applied to this PES. There were four strata, each referring to four regions – Central, North, Northeast and South; in each region, the provinces were represented as substrata. Within each substratum, the EAs were systematically selected; the total samples were 1 280 EAs. After the PES field operation, information between the census and the PES were processed for a matching check. Then, errors in census coverage and content were analysed and evaluated.

# THAILAND – AGRICULTURAL CENSUS 2013 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	5 911 567	18 659 786
Individual	5 844 114	18 374 487
Two or more individuals	61 446	209 181
Corporation	1 859	44 778
Government agency	2 077	19 307
Others	2 071	12 032

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Total</b>	<b>5 911 567</b>	<b>18 659 786</b>
1 parcel	3 396 516	7 047 558
2 parcels	1 368 120	4 791 263
3 parcels	613 385	2 913 921
4 parcels	272 263	1 622 748
5 parcels	126 496	891 609
6 parcels	134 787	1 392 687

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>5 911 567</b>	<b>18 659 786</b>
Less than 0.3 ha	331 743	34 828
0.3–1 ha	1 045 756	606 487
1–1.6 ha	817 473	958 985
1.6–3 ha	1 606 257	3 467 294
3–6 ha	1 393 786	6 002 413
6–9 ha	444 160	3 334 890
9–22 ha	244 665	3 123 534
22–80 ha	26 094	855 625
80 ha and over	1 633	275 732

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE		Number
<b>Total</b>		<b>5 905 714</b>
Male		3 761 602
Female		2 144 112
Under 25 years		34 313
Male		17 920
Female		16 390
25–34 years		306 140
Male		176 910
Female		129 225
35–44 years		1 088 389
Male		657 388
Female		430 998
45–54 years		1 834 958
Male		1 187 167
Female		647 791
55–64 years		1 545 605
Male		1 027 818
Female		517 791
65 years and over		1 096 316
Male		694 399
Female		401 919

HOLDINGS BY HOUSEHOLD SIZE		Number
<b>Total holdings</b>		<b>5 905 714</b>
1 person		719 284
2–3 persons		2 795 246
4–5 persons		1 713 859
6–9 persons		667 702
10 persons and over		9 623

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total</b>		<b>18 202 113</b>
Male		8 809 508
Female		9 392 605
Engaged in agricultural activities on the holding		8 548 391
Male		4 145 690
Female		4 402 701

PERMANENT EMPLOYEES WORKING ON THE HOLDING		Number
<b>Total</b>		<b>1 161 182</b>
Male		644 808
Female		516 374

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	582 635	3 648 738
Buffaloes	173 426	701 587
Sheep	2 471	33 867
Goats	22 994	324 836
Pigs/swine	150 681	6 584 479
Poultry (1 000 head)	n.a.	n.a.
Chickens	574 918	251 339
Ducks	142 060	13 335
Geese	6 896	174

HOLDINGS, BY MAIN PURPOSE OF PRODUCTION		
	Holdings reporting	Area (ha)
<b>Total producing for</b>	<b>3 777 470</b>	<b>11 308 090</b>
Home consumption	992 847	1 023 963
Sale	363 644	2 938 307
Home consumption and sale	2 420 979	7 345 820

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
<b>Total tractors of all kinds</b>	<b>n.a.</b>	<b>2 371 425</b>
Four-wheel tractors	2 427 001	370 484
Two-wheel tractors	2 438 848	2 000 941
Combine harvesters	1 639 016	38 340
Other (machine-powered)	n.a.	
Sprayer	1 323 153	910 214
Weeder	1 155 443	756 653
Planter	167 413	69 510
Reaper	82 044	3 621
Rice and cereal thresher	542 887	15 347
Corn sheller	173 568	4 460
Rice and cereal winnower	207 718	5 366
Rice miller	1 808 871	45 587
Milking machine	9 610	11 707

## 1. HISTORICAL OUTLINE

The first agricultural census (AC) in Viet Nam was conducted in 1994. The second AC was carried out in 2001, which was followed by those carried out in 2006 and 2011.<sup>1</sup> The 2011 AC,<sup>2</sup> to which the present metadata review and data refer, is the fourth agricultural census to be carried out in the country and the second AC to be carried out in the 2010 WCA round.

## 2. LEGAL BASIS AND ORGANIZATION

### Legal framework

The census legislation included:

- Law of Government Organization of 25 December 2001;
- Law of Statistics dated 26 June 2003;
- Government Decision No. 144/2008/QĐ-TTg, of 29 October 2008, on promulgation of the National Statistical Survey Program;
- Government Decision No. 1785/QĐ-TTg, of 27 September 2010, in the framework of the National Statistical Survey Program and considering the requests from the Minister of Planning and Investment to conduct a rural, agricultural and fisheries census.

### Institutional framework and international collaboration

Since 2001, ACs in Viet Nam have been conducted every five years. The Ministry of Planning and Investment (MPI), through its General Statistics Office (GSO), was the main institution responsible for elaborating the AC census plan. This activity was performed in collaboration with the Ministry of Agriculture and Rural Development (MARD). The Minister of Planning and Investment is empowered to approve the census plan. The AC budget was submitted to the Census Central Steering Committee (CCSC) for implementation of census activities, under the direct guidance of the Ministry of Finance.

### Census staff

The census operations mobilized 180 000 enumerators, coordinators and supervisors at all levels.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 July 2011, for labour force, equipment and machinery, farmland by land use categories, animal husbandry, etc.

**Reference period:** the 12-month period preceding the census, for harvested area, yield and total value of the production, production items from animal husbandry, forestry activities, fishery activities, etc.

## 4. ENUMERATION PERIOD

Data collection was conducted during: (i) 15 days, from 1 July to 15 July 2011, for holdings covered by complete enumeration; and (ii) 30 days, from 1 July to 30 July 2011 for holdings covered by sample enumeration.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural production (crop and livestock production), forestry and fisheries activities. A community survey was conducted jointly with the AC.

The following **statistical units**<sup>3</sup> were covered in the AC 2011: (i) households in rural areas; (ii) agricultural, forestry and fishery households in urban areas; (iii) farms above an established threshold, as specified in section 7 below; and (iv) communes.

The AC results also included information on agricultural, forestry and fishery enterprises and cooperatives. These data were collected using the Enterprises Survey 2011, conducted by the GSO.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

All households in rural areas and households engaged in agriculture, forestry and fisheries production in urban areas were covered by the AC 2011.

The following minimum size limits<sup>4</sup> were used to define the farms:

- crop farm and aquaculture farm: (i) 3.1 ha for the South East and for the Mekong River Delta; (ii) 2.1 ha for the rest of the provinces; (iii) the output value of its goods reached VND<sup>5</sup> 700 million in 2010 (approximately USD 33 200);
- livestock farm: the output value of its goods reached VND 1 one billion in 2010 (approximately USD 47 430); and
- forestry farm: having a minimum area of 31 ha and the average output value of its goods reached VND 500 million per year (approximately USD 23 700).

Agricultural, forestry and fishery enterprises and cooperatives were not covered in the AC 2011 because they had already been integrated into the Enterprises Survey 2011, conducted by the GSO.

<sup>1</sup> At the time of publishing, Viet Nam had also conducted the AC 2016, under the WCA 2020 round.

<sup>2</sup> The "Rural, Agricultural and Fisheries Census 2011".

<sup>3</sup> The following three types of units are distinguished in the AC results: (i) households; (ii) enterprises; and (iii) cooperatives.

<sup>4</sup> These criteria were established by the Ministry of Agriculture and Rural Development.

<sup>5</sup> Vietnamese dong.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The AC used the classical approach. A short-long questionnaire was applied for data collection in the AC 2011. The short questionnaire was used for all households in rural areas and households engaged in agriculture, forestry and fisheries production in urban areas. The long questionnaire was used for collecting more detailed information from rural households.

### **Frame**

The frame for the sample component of the AC 2011 was built using the master sampling frame provided by the Population and Housing Census (PHC) 2009.

### **Complete and/or sample enumeration methods**

A combination of complete and sample enumeration was applied for the 2011 AC. The census was taken by complete enumeration of the rural households, agricultural, forestry and fishery households in urban areas, and farms, as well as of the People's committees of communes (using Forms 01-03 as specified below in "Questionnaires" subsection).

A sample enumeration was conducted to collect additional in-depth information on household economics from rural households (using Form 04).

### **Sample design (if sampling was used)**

Two stage-systematic sampling design was applied for the sample component. In the first stage, EAs (as PSUs) were selected with PPS (the number of rural households was used as a measure of size). In the second stage, 30 households were selected in each sampled EA. A sample of 75 000 households in rural areas (0.5 percent of rural households) was selected from 2 500 EAs in 63 provinces.

### **Data collection method(s)**

Data collection was done by means of face-to-face interviews. The information was collected in paper forms (that is, using the PAPI method).

### **Questionnaire(s)**

Four questionnaires were used for the AC 2011 data collection.

The AC 2011 census questionnaires covered 13 of the 16 core items recommended for the WCA 2010 round.

## 9. USE OF TECHNOLOGY

Scanning technology was used for the data capture of certain census questionnaires. The census results were disseminated and are accessible online. Secure access to AC macro and micro databases was granted.

## 10. DATA PROCESSING AND ARCHIVING

A scanning technique was used for one questionnaire (Form 01/TĐTNN-HO). Manual data entry was applied for the remaining questionnaire forms. The GSO developed a specific statistical software to store a database and to build up tabulations. Most of the statistical indicators were generated by a specific statistical software, using the SPSS and Stata to extract the data from the AC database.

A data warehouse was developed to enable data users to extract and build up tabulations based on the AC database.

## 11. CENSUS DATA QUALITY

The GSO carried out a PES to evaluate the census coverage and content.

## 12. DATA DISSEMINATION

To facilitate users' access to the AC results, the census data were compiled and disseminated through census reports, electronic products such as CD-ROMs, macro and micro databases, and through the GSO's website. The preliminary results of the census were released in December 2011 and the final results were disseminated in December 2012.

## 13. DATA SOURCES

**FAO.** 2016. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 19–23 September 2016, Bangkok, Thailand. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 4 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020bangkok/en/>

**FAO.** 2012. Twenty-fourth session of the Asia and Pacific Commission on Agricultural Statistics, 8–12 October 2012, Da Lat, Viet Nam. In: *Asia and Pacific Commission on Agricultural Statistics* [online]. Bangkok, Thailand. [Cited 5 September 2019] <http://www.fao.org/economic/ess/ess-events/ess-apcas/ess-apcas24/en/>

**General Statistics Office of Vietnam.** 2012. Results of the 2011 Rural, Agricultural and Fisheries Census. In: *General Statistics Office of Vietnam* [online] Hanoi, Viet Nam. [Cited on 9 August 2019]. [https://www.gso.gov.vn/default\\_en.aspx?tabid=477&idmid=4&ItemID=13399](https://www.gso.gov.vn/default_en.aspx?tabid=477&idmid=4&ItemID=13399)

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AGRICULTURE, FORESTRY AND FISHERY (AFF) UNITS AND AREA, BY LEGAL STATUS		
	Units	Area (ha)
<b>Total AFF units<sup>1</sup></b>	<b>10 376 981</b>	<b>11 880 117</b>
Household	10 368 143	9 477 860
Enterprise	2 536	2 101 699
Cooperative	6 302	300 559
<b>Agricultural units<sup>2</sup></b>	<b>9 598 723</b>	<b>6 851 843</b>
Households	9 591 696	n.a.
Enterprises	955	n.a.
Cooperatives	6 072	n.a.

DISTRIBUTION OF AGRICULTURAL UNITS, BY LAND SIZE CLASSE		
	Units	Area (ha)
<b>Total</b>	<b>9 598 723</b>	<b>6 851 843</b>
Holdings without land	462 246	
Holdings with land	9 136 477	6 851 843
Less than 1 ha	7 303 801	2 436 762
1–1.99 ha	1 127 828	1 506 374
2–4.99 ha	618 319	1 715 690
5–9.99 ha	74 098	460 996
10–19.99 ha	9 459	115 022
20–49.99 ha	1 739	46 608
50–99 ha	423	29 755
100–199 ha	233	33 768
200–499 ha	390	124 725
500–999 ha	95	62 813
1 000 ha and over	92	319 331

LAND USE		
	Units	Area (ha)
<b>Total AFF units</b>	<b>10 376 981</b>	<b>11 880 117</b>
Agricultural land	9 418 625	7 034 697
Arable land	8 276 068	4 703 648
Land under permanent crops	4 194 221	2 331 049
Forest land	1 362 763	4 230 228
Land under aquaculture	1 509 057	615 192

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>10 368 143</b>	<b>9 477 860</b>
Male	8 484 257	8 370 170
Female	1 883 886	1 107 689

<sup>1</sup> Data refer to units engaged in agricultural, forestry and fisheries activities.

<sup>2</sup> Data refer to units engaged in agricultural activities.

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE	
	Number
<b>Total</b>	<b>10 368 143</b>
Male	8 484 257
Female	1 883 886
Under 25 years	184 719
Male	157 941
Female	26 778
25–34 years	1 634 487
Male	1 464 785
Female	169 702
35–44 years	2 791 670
Male	2 455 360
Female	336 310
45–54 years	2 951 021
Male	2 384 809
Female	566 212
55–64 years	1 723 314
Male	1 321 644
Female	401 670
65 years and over	1 082 932
Male	699 718
Female	383 214

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total</b>	<b>39 514 696</b>
Male	20 312 458
Female	19 202 238
Engaged in agricultural activities on the holding	23 928 874
Male	11 559 168
Female	12 369 706

AFF UNITS IN THE HOUSEHOLD SECTOR, BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>10 368 143</b>
1 person	451 872
2–3 persons	3 435 038
4–5 persons	4 968 871
6–9 persons	1 466 294
10 persons and over	46 068

LIVESTOCK		
	Units	Head
<b>Holdings with livestock</b>	<b>7 393 867</b>	
Cattle	1 758 546	3 973 892
Buffaloes	1 357 523	2 469 682
Sheep	2 611	75 531
Goats	157 344	928 577
Pigs/swine	3 516 222	18 906 645
Poultry (1 000 head)	n.a.	n.a.
Chicken	6 328 222	201 249
Ducks	1 494 519	70 313
Geese	731 170	10 601

**EUROPE**

## 1. HISTORICAL OUTLINE

The 1998 Census of Agricultural Holdings (CAH) was the first agricultural census conducted in Albania. The second agricultural census, to which the metadata review and data presented here refer, was carried out in 2012.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the CAH includes:

- Law No. 9180 of 5 February 2004 on Official Statistics;
- Law No. 10201 of 17 December 2009 on the CAH;
- The decision of the Council of Ministers No. 181, of 17 March 2010, on the establishment and composition of the Central Commission for the CAH; and
- The decision of the Council of Ministers No. 304 and 305, of 9 May 2012, on the composition and tasks of CAH commissions in districts and municipalities/communes.

### **Institutional framework and international collaboration**

According to the legislation mentioned above, the CAH was organized and implemented by the Albanian Institute of Statistics (INSTAT), under the supervision of the Central Census Commission (CCC), and with the support of the census commissions at prefecture and municipality/commune level. For preparing and implementing the CAH, INSTAT worked in cooperation with other government bodies, in particular, with the Ministry of Agriculture, Food and Consumer Protection (MAFCP) and the Ministry of Local Authorities.

Technical support for the CAH 2012 was provided by the European Union and the Swedish Statistical Office.

### **Census staff**

Overall, 4 425 census staff were involved in the CAH 2012, including 3 527 enumerators, 697 controllers, 69 supervisors, 12 coordinators and 120 operators for census data capture (scanning of CAH questionnaires).

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 October 2012, for inventory items, such as livestock numbers and farm buildings.

### **Reference periods:**

- From 1 October 2011 to 30 September 2012, for land use, agricultural production methods, machinery used, other gainful activities, labour force, sales of production, credit and insurance, etc.
- The 12 months preceding the interview, for animal grazing, training of the farm manager, main location of livestock.

## 4. ENUMERATION PERIOD

Data collection started on 1 October 2012 and ended on 31 October 2012.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and animal production) activities.

The **statistical unit** is the agricultural holding, defined as a single unit, both technically and economically, which has a single management, is composed by land even in fragmented parcels, and undertakes agricultural and livestock activities within the economic territory of Albania.<sup>1</sup>

## 6. GEOGRAPHIC COVERAGE

The CAH 2012 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS:

The following units were not covered by the CAH:

- units that have used farming area only as kitchen gardens, smaller than 200 m<sup>2</sup>;
- units made up only of: forests (wooded areas); ornamental parks or gardens; land not used for agricultural purposes; or completely abandoned land;
- poultry hatcheries, if operated without further breeding.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CAH 2012.

<sup>1</sup> An agricultural holding is defined by the following criteria: (i) a single unit both technically and economically: use of the same means of production and breeding livestock; (ii) single management: the management system of the farm is decided unitarily by the same person or group of persons: this implies that a person or a group of persons is responsible for taking decisions on the holding's farming activities; (iii) a unit engaged in "own account" agricultural activities, as either its primary or secondary activity.

**Frame**

The CAH frame was established based on the following sources: (i) data from the Census of Population and Housing (CPH) regarding the household units involved in agricultural activities; (ii) data provided by the MAFCP (resulted from the Farm Identification Campaign 2011, etc.); (iii) the INSTAT Business Register; (iv) the list of public and religious bodies, etc.

**Complete and/or sample enumeration methods**

The CAH 2012 was conducted using complete enumeration.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

The traditional method, face-to-face interviewing (the Paper and Pen Interviewing, or PAPI, method) was applied in the CAH.

**Questionnaire(s)**

One detailed census questionnaire was used for the CAH 2012 data collection. The census questionnaire covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Optical scanning was used for census data capture. The census results were disseminated online.

**10. DATA PROCESSING AND ARCHIVING**

For data entry, INSTAT used scanning technology with READSOFT software. The output of the scanning process was a text file that was imported to SAS for further processing. The programmes implemented a selective editing algorithm to identify significant errors in the data on area of land and the variables on livestock, separately by census district.

**11. CENSUS DATA QUALITY**

A Post-enumeration Survey (PES) was conducted by INSTAT in December 2012 (one month after the census enumeration) to evaluate the census undercount. The PES was based on an aerial sample, in which the selected units were the enumeration areas (EAs). According to the PES, the undercoverage rate is 7.6 percent.

In 2016, a calibration survey was carried out and calibration was implemented.

**12. DATA DISSEMINATION**

The final results of the CAH 2012 were published in 2017 and are available online. Thirty-three tables were prepared at the national level. At the prefecture and district level, 26 tables were chosen. Approximately 19 tables were prepared for each commune, which are modified versions of the tables at the national level.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 9 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

**INSTAT.** 2017. Census of Agricultural Holdings (CAH) 2012. In: *INSTAT* [online]. Tirana, Albania. [Cited 28 July 2019]. <http://www.instat.gov.al/en/themes/censuses/agriculture-census/#tab2>

**14. CONTACT**

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# ALBANIA – AGRICULTURAL CENSUS 2012 – MAIN RESULTS

NUMBER OF HOLDINGS AND UTILISED AGRICULTURAL AREA (UAA), BY LEGAL STATUS		
	Holdings	UAA (ha)
<b>Total</b>	<b>321 492</b>	<b>333 592</b>
Civil persons	321 201	327 481
An individual	315 637	317 897
Two or more individuals	5 564	9 584
Juridical persons	291	6 111

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>321 492</b>	<b>371 609</b>
Legal ownership and owner-like possession	320 021	304 638
Rented from others	18 171	59 539
Other form of tenure	15 457	7 432

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>321 492</b>	<b>371 609</b>
Less than 1 ha	215 034	99 758
1–2 ha	76 550	109 987
2–3 ha	20 073	48 544
3–5 ha	6 299	23 978
5–10 ha	1 665	11 573
10 ha and over	1 871	77 769

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>321 492</b>	<b>371 609</b>
Utilised agricultural area	320 042	333 592
Arable land	283 618	215 815
Land under fallow	21 205	12 293
Kitchen garden	265 788	4 791
Land under permanent crops	127 103	41 856
Land under meadows	37 320	17 855
Land under pastures	35 731	53 276
Unutilised agricultural area	29 291	13 088
Wooded area	10 809	17 246
Other	200 407	7 683

MANAGERS BY SEX AND AGE		Number
<b>Total</b>		<b>321 492</b>
Male		292 990
Female		28 502
Under 24 years		2 382
Male		2 162
Female		220
25–34 years		18 152
Male		16 538
Female		1 614
35–44 years		56 670
Male		51 739
Female		4 931
45–54 years		95 743
Male		88 734
Female		7 009
55–64 years		77 277
Male		71 125
Female		6 152
65 years and over		71 268
Male		62 692
Female		8 576

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total engaged in agricultural activities on the holding</b>		<b>684 913</b>
Male		374 955
Female		309 958

EMPLOYEES WORKING ON THE HOLDING		Number
<b>Total</b>		<b>98 264</b>
Male		76 245
Female		22 019
Civil persons		94 527
Male		74 497
Female		20 031
Juridical persons		3 737
Male		1 748
Female		1 988

LIVESTOCK		
	Holdings	Heads
<b>Total holdings with livestock</b>	<b>245 925</b>	
Cattle	159 468	328 097
Sheep	39 532	1 179 540
Goats	21 738	496 102
Pigs/swine	26 092	73 328
Equines	71 157	77 245
Poultry (1 000 head)	210 023	10 157
Broilers	93 714	4 139
Laying hens and cocks	192 771	5 103
Turkeys	38 876	763
Geese and ducks	19 339	148
Other	404	4
Other animals		
Rabbits	3 871	36 118
Insects		
Bees (hives)	11 769	123 428

METHODS OF IRRIGATION		Holdings
<b>Holdings with irrigated land</b>		<b>158 444</b>
Manual irrigation		16 558
Flooding, furrow		99 408
Sprinkler		27 467
Localized irrigation		9 473
Other		15 923

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
<b>Total tractors of all kinds</b>	<b>16 474</b>	<b>21 052</b>
Four-wheel tractors with <20hp	4 506	5 094
Four-wheel tractors with >20hp	11 968	15 958
Combine harvester	1 732	2 209
Other (machine-powered)	n.a.	
Sowing machine	3 500	4 326
Mowing machine	2 928	3 524
Transport vehicle	6 955	8 298
Motocultivator	2 154	2 277
Fertilization and spray machinery	1 481	1 644

## 1. HISTORICAL OUTLINE

Austria conducted its first census of agricultural and forestry holdings in 1902. Subsequent agricultural censuses were held in 1930, 1939 and 1951, and every ten years from 1960 to 1990. The last two Agricultural Censuses (ACs) took place in 1999 and 2010. The AC 2010, to which the metadata review and data presented here refer, was carried out together with the Survey on Agricultural Production Methods (SAPM).

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The agricultural census legislation consisted of:

- the Federal Statistics Act 2000 (Bundesgesetzblatt, BGBl I, No. 163/1999), as last amended by BGBl I No. 111/2010, which provides for the creation of Advisory Committees for the various statistical activities;
- Regulation (BGBl II No. 122/2010), adopted by Austria's Federal Minister for Agriculture and Forestry, Environment and Water Management (MoA), regarding the preparation of statistics concerning the structure of the agricultural holdings and agricultural production methods based on the Federal Statistics Act 2000; and
- the EU legislation<sup>1</sup> relevant for implementing the FSS 2010.

### *Institutional framework and international collaboration*

Statistics Austria has the responsibility for the AC. The Advisory Committee on Agricultural Statistics, which comprises experts from various Austrian institutions in the agricultural field, was tasked with providing Statistics Austria with mainly technical advice and support in the planning and implementation of the census.

### *Census staff*

The AC 2010 was implemented with the support of the local authorities. Up to 46 percent of farmers and forest managers replied directly to Statistics Austria (using Computer-assisted Web Interviewing, or CAWI), while the rest of the census units were surveyed by the census bodies established in communes. The staff involved in the census data collection amounted to approximately 25 staff members at Statistics Austria and related staff from the 2 379 local authorities.

## 3. REFERENCE DATE AND PERIOD

### *Reference days:*

- 1 April 2010, for items related to livestock;
- 15 May 2010, for ownership and land area-related characteristics; and
- 31 October 2010, for all other inventory items.

### *Reference periods:*

- from 1 November 2009 to 31 October 2010, for land use, labour force, other gainful activities and agricultural production methods;
- from 1 January 2008 to 31 December 2010, for landscape features, rural development support and average irrigated area;
- the calendar year 2009, for the annual consumption of fuel and energy in horticultural holdings; and
- the calendar year 2010, for the cultivation of vegetables, flowers and ornamental plants, etc.

## 4. ENUMERATION PERIOD

The census documents were sent out by post in October 2010 to the municipalities and the respondents. The enumeration period ended on 31 March 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** included all agricultural and forestry holdings included in the Agriculture and Forestry Register (AFR) and meeting the cut-off thresholds (see section 7). The AFR is held by Statistics Austria.

The **statistical unit** is the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities as listed in annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the European Union, either as its primary or secondary activity.

## 6. GEOGRAPHIC COVERAGE.

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The census included the agricultural holdings that met at least one of the following thresholds:

- 1 ha of utilized agricultural area (UAA);
- wine-growing holdings with at least 25 ares under market vines;
- holdings with at least 15 ares (0.15 ha) of intensively utilized fruit orchards, or 10 ares (0.1 ha) under berries, strawberries, vegetables, hops, flowers or decorative plants, or under vine or forest, or nurseries;
- holdings that operate greenhouses (high/low glass or foil) covering at least one are (0.01 ha), the majority of the produce being

<sup>1</sup> (i) Regulation (EC) No. 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No. 571/88 and (ii) Commission Regulation (EC) No. 1200/2009 of 30 November 2009 implementing Regulation (EC) No. 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards livestock unit coefficients and definitions of the characteristics. This legislation is relevant for all EU member countries.

grown for the market; or

- livestock holdings with at least three head of cattle, five pigs, ten sheep, ten goats or 100 head of poultry of any type.

The AC also included forestry holdings with at least 3 ha of wooded area.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2010. Some census data were collected directly from administrative registers.

### **Frame**

The population of the AC 2010 essentially comprised the active holding units in the AFR.

### **Complete and/or sample enumeration methods**

The AC and SAPM 2010 were conducted by complete enumeration.

### **Sample design (if sampling was used)**

Not applicable.

### **Data collection method(s)**

The AC 2010 data were collected using the CAWI method. The questions were asked using standardized survey documents (electronic questionnaire and explanatory notes). Administrative data were also used in the AC as a source of census data and for validation purposes.

### **Questionnaire(s)**

The AC 2010 was conducted using an electronic questionnaire (e-Quest), in which the name and the address of the holdings were already entered and only had to be checked and, if necessary, corrected. Detailed information on how to use the electronic questionnaire and administer the AC 2010 was sent directly to the respondents and municipalities.

The census questionnaire covered all 16 core items recommended in the WCA 2010.

## 9. USE OF TECHNOLOGY

The CAWI method was applied for data collection. Some census data were collected directly from administrative registers. Census results were disseminated and are accessible online.

## 10. DATA PROCESSING AND ARCHIVING

The IT department took the data directly from the electronic questionnaire and imported it into a database. Only the data of a few holdings, that submitted their questionnaire by post or fax to Statistics Austria, had to be entered manually. The data sets were checked for missing, incorrect or implausible information, using an extensive plausibility application.

## 11. CENSUS DATA QUALITY

The questionnaire was personalized and prefilled with available administrative data. Farmers were asked to verify the information, complete missing data and, if necessary, make corrections. The electronic questionnaire was designed in such a way that it could only be sent once the compulsory fields had been correctly completed.

## 12. DATA DISSEMINATION

The results of the AC 2010 were released as follows:

- Key data were available in the form of a press release containing preliminary information at the national level, in October 2011.
- The final results were released on 31 May 2012.
- Regional data (LAU2) were published in summer 2012.

The AC 2010 results are available online.

## 13. DATA SOURCES

**Eurostat.** 2019a. Archive: Agricultural census in Austria. In: European Commission: Eurostat [online]. Luxembourg. [Cited 23 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Austria](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Austria)

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**Statistics Austria.** 2013. *Farm Structure Survey 2009/2010 and Survey on agricultural production methods 2009/2010*. National Methodological Report. Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/AT\\_NMR\\_FSS\\_2010.pdf/07599769-455a-4da6-b0dc-b04e795e3fa4](http://ec.europa.eu/eurostat/documents/749240/749313/AT_NMR_FSS_2010.pdf/07599769-455a-4da6-b0dc-b04e795e3fa4)).

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# AUSTRIA – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>150 170</b>	<b>5 847 850</b>
Civil persons	146 180	4 429 530
An individual (sole holder holdings) <sup>2</sup>	141 480	4 133 000
Two or more individuals (group holdings)	4 700	296 530
Juridical persons (legal entities)	3 980	1 418 320

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>150 170</b>	<b>2 878 170</b>
Legal ownership and owner-like possession (owned land)	137 170	1 855 900
Rented from others (land rented)	70 110	891 230
Other form of tenure (shared farming or other modes)	30 540	131 040

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>150 170</b>	<b>2 878 170</b>
Holdings without UAA	1 080	
Holdings with UAA	149 090	2 878 170
Less than 2 ha	16 160	19 060
2–4.99 ha	30 220	98 840
5–9.99 ha	26 590	194 040
10–19.99 ha	32 590	471 340
20–29.99 ha	17 110	418 800
30–49.99 ha	15 150	579 310
50–99.99 ha	8 430	568 470
100 ha and over	2 850	528 300

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>150 170</b>	<b>5 847 850</b>
UAA	149 090	2 878 170
Arable land	83 590	1 371 290
Land temporarily fallow	44 390	43 110
Land under permanent crops	20 260	65 200
Permanent meadows and pastures	125 740	1 439 470
Kitchen garden	15 420	2 200
Other land	132 500	2 969 690
Wooded area	122 490	2 269 850
Unutilised agricultural land and other areas	83 590	699 840

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>150 170</b>	<b>2 878 170</b>
Male	98 390	2 114 090
Female	51 780	764 070

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>		Number
<b>Total engaged in agricultural activities on the holding</b>		<b>174 410</b>
Male		88 620
Female		85 790

LABOUR FORCE OF THE HOLDING		Number
<b>Total</b>		<b>346 260</b>
Male		204 630
Female		141 630
Family labour force		319 180
Male		187 060
Female		132 120
Regular non-family labour force		27 080
Male		17 570
Female		9 510

MANAGERS BY SEX AND AGE <sup>3</sup>		Number
<b>Total</b>		<b>150 170</b>
Male		98 390
Female		51 780
Less than 35 years		16 110
Male		11 910
Female		4 210
35–44 years		41 060
Male		28 020
Female		13 040
45–54 years		53 640
Male		33 180
Female		20 460
55–64 years		26 980
Male		16 880
Female		10 100
65 years and over		12 380
Male		8 400
Female		3 980

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>106 960</b>	
Cattle	71 940	2 023 510
Sheep	14 500	397 620
Goats	9 680	80 490
Pigs/swine	37 760	3 246 700
Equines (Equidae)	16 520	80 970
Poultry (1 000 head)	n.a.	n.a.
Broilers	1 190	6 860
Laying hens	52 420	6 400
Others	10 290	1 360
Other	2 130	
Insects		
Bees (hives)	4 730	59 130

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>4 700</b>	<b>91 970</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>2 920</b>	<b>26 480</b>
Surface	480	n.a.
Sprinkler	1 930	n.a.
Localized irrigation (drop irrigation)	990	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units.

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen gardens and areas under glass.

## 1. HISTORICAL OUTLINE

Belgium participated in all the rounds of the WCA. The first agricultural census was conducted in 1846. Between 1846 and 1960, eight censuses were conducted, at intervals of 10 to 15 years. As one of the six founding countries of the European Union (EU), Belgium has been organizing censuses of agriculture harmonized with EU standards and requirements since 1960. The metadata review and data presented here refer to the Agricultural Census (AC) 2010, which was carried out together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The legal framework for the AC 2010 included:

- the Law of 4 July 1962 concerning public statistics (“Statistical Law”), amended by the Law of 1 August 1985;
- the Royal Decree of 12 March 2008; and
- the relevant EU legislation.

### *Institutional framework and international organization*

Statistics Belgium (Directorate General for Statistics and Economic Information or STATBEL), under the Federal Public Service for the Economy, Small and Medium Sized Enterprises (SMEs), the Self-Employed and Energy, is in charge of the AC. The AC activities are part of the regular activities performed by the agricultural statistics unit of the DGSEI. Municipal authorities are responsible for collecting the survey data. The actual conduct of the census is the responsibility of mayors, as representatives of the central authority and senior officials of the municipalities.

### *Census staff*

The census data collection was conducted by municipal census officials.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 May 2010, for inventory items, such as livestock numbers and area for outdoor crops.

### *Reference periods:*

- the 12 months preceding 1 May 2010, for agricultural labour, the area of crops under protective cover, etc.
- three years preceding the survey year, for rural development data, some indicators in the SAPM, etc. and
- the year 2010 or the last 12 months, for the collection of other SAPM items.

## 4. ENUMERATION PERIOD

The enumeration period for the agricultural census was one month, from 1 May to 31 May 2010.

The enumeration period for the SAPM was from the end of February to mid-April 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

### *Census scope*

The AC 2010 covered agricultural activities (crop and animal production).

### *Statistical unit*

The statistical unit in the AC 2010 is the agricultural holding (farm), defined as the holding (of at least 1 are) producing “farm products or horticultural products” for sale as principal or secondary activity, or keeping animals, whether or not they produce goods for sale. Experimental or research establishments, nursery services of public bodies producing agricultural products for their use, schools, religious communities, prisons and other similar establishments were also covered by the census.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country, both urban and rural areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The AC covered the holdings that: (i) produce agricultural products for sale, without any minimum size limits; (ii) operate at least one are (0.01 ha); or (iii) keep animals, whether or not they produce goods for sale.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the AC 2010. Data on rural development aid were obtained from administrative data sources.

### *Frame*

The frame of agricultural holdings is based on the Register of Holdings held by the STATBEL, which includes the farms producing agricultural products with a view to selling them. The register is updated annually using the data provided by the municipalities carrying out the farm surveys.

**Complete and/or sample enumeration method(s)**

The AC 2010 was conducted using complete enumeration. The SAPM was a sample survey.

**Sample design (if sampling was used)**

The SAPM was conducted using stratified random sampling of 2 407 farms (5.7 percent sample).

**Data collection method(s)**

Agricultural census data were collected by the census enumerators, either at the farmer's residence or that of his or her representative, or at the offices of the municipal authorities after an interview had been arranged. The municipal authorities could choose between a printed form and an electronic "Blaise" form for data collection. Data on rural development aid were obtained from administrative data sources.

The SAPM data were collected using the self-interviewing (CAWI) method.

**Questionnaire(s)**

The information for the AC was collected using a single form, except for farms with a large number of workers (holdings with more than ten familial or non-familial workers), which received an additional questionnaire specifically devoted to agricultural labour. The questionnaire was prepared in three languages (French, Dutch and German). The information for the SAPM was collected using a single form.

The census covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

In the SAPM, the CAWI method was used along with the mail-out/mail-back method. The respondents were provided with the opportunity to respond using an online Internet application, and their login and password information were sent with their survey documents in the mail. Approximately 18 percent of farmers provided their questionnaire responses using the CAWI method.

**10. DATA PROCESSING AND ARCHIVING**

Following data collection, the municipalities provided the paper-based forms to the relevant decentralized offices for data processing. The data were encoded on PCs using a Blaise application. The data collected using electronic forms were placed in the same database. At regular intervals, the data from each decentralized office were entered in a Blaise database on a central server. Imputations were rare as there were few nonresponses and missing data issues were normally addressed by contacting the respondent. In the few situations where imputation was necessary, it was done using data from a previous year's survey. The data were then transferred to an SPSS database to perform further analysis and calculation of results.

**11. CENSUS DATA QUALITY**

The response rate was 99.7 percent. A comparison between the survey results and the administrative data was made, for analysis purposes only (to prepare for the future task of replacing survey variables with administrative data) and not for statistical use.

**12. DATA DISSEMINATION AND USE**

A summary of provisional results based on approximately 53 percent of questionnaires was published in August 2010. The final census results were published in March 2011. The census results are available to users free of charge on the STATBEL website. User access to anonymized individual data is subject to rigorous conditions, outlined in an agreement signed by parties.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural Census in Belgium. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 23 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Belgium](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Belgium)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**STATBEL.** 2011. *National Methodological Report: "Agricultural Census and Agricultural Production Methods 2010"*. Luxembourg. (also available at [https://ec.europa.eu/eurostat/documents/749240/749313/BE\\_NMR\\_FSS\\_2010.pdf/acfefbf3-5bf4-4529-acd4-803f14e19aec](https://ec.europa.eu/eurostat/documents/749240/749313/BE_NMR_FSS_2010.pdf/acfefbf3-5bf4-4529-acd4-803f14e19aec))

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BELGIUM – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>42 850</b>	<b>1 384 880</b>
Civil persons	38 600	1 218 260
An individual (sole holder holdings) <sup>2</sup>	38 600	1 218 260
Juridical persons (legal entities)	4 260	166 620

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>42 850</b>	<b>1 358 020</b>
Legal ownership and owner-like possession (owned land)	37 350	446 950
Rented from others(land rented)	32 450	895 640
Other form of tenure (shared farming or other modes)	1 460	15 420

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>42 840</b>	<b>1 358 020</b>
Holdings without UAA	950	
Holdings with UAA	41 910	1 358 020
Less than 2 ha	4 270	4 290
2–4.99 ha	4 450	14 870
5–9.99 ha	5 190	37 620
10–19.99 ha	6 800	98 990
20–29.99 ha	5 080	125 130
30–49.99 ha	7 090	276 030
50–99.99 ha	6 780	466 910
100 ha and over	2 260	334 160

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>42 850</b>	<b>1 384 880</b>
UAA	41 910	1 358 020
Arable land	34 670	836 670
Land temporarily fallow	4 270	9 590
Land under permanent crops	2 560	21 530
Permanent meadows and pastures	32 020	499 690
Kitchen garden	1 160	130
Other land	42 600	26 860
Wooded area	950	4 870
Unutilised agricultural land and other areas	42 600	21 990

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>42 850</b>	<b>1 358 020</b>
Male	36 410	1 217 750
Female	6 450	140 270

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>27 920</b>
Male	10 460
Female	17 460

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>80 940</b>
Male	53 700
Female	27 240
Family labour force	66 510
Male	43 370
Female	23 140
Regular non-family labour force	14 440
Male	10 340
Female	4 100

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>42 850</b>
Male	36 410
Female	6 450
Less than 35 years	2 060
Male	1 810
Female	250
35–44 years	8 000
Male	7 050
Female	950
45–54 years	13 780
Male	11 990
Female	1 790
55–64 years	10 470
Male	8 880
Female	1 600
65 years and over	8 550
Male	6 690
Female	1 860

LIVESTOCK		
	Holdings	Heads
<b>Total holdings with livestock</b>	<b>31 820</b>	
Cattle	24 950	2 592 630
Sheep	3 300	120 460
Goats	950	32 020
Pigs/swine	5 890	6 429 570
Equines (Equidae)	5 920	37 100
Poultry (1 000 head)	n.a	n.a
Poultry - broilers	920	21 900
Laying hens	2 710	11 680
Others	620	790
Other animals	n.a	
Rabbits (breeding females)	560	174 420
Other	270	
Insects		
Bees (hives)	270	3 240

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>1 430</b>	<b>13 560</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>920</b>	<b>4 260</b>
Surface	410	n.a
Sprinkler	1 840	n.a
Localized irrigation (drop irrigation)	550	n.a

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The first census of land ownership in Bulgaria was carried out in 1897. Subsequent agricultural censuses (ACs) were held in 1934 (under the general census of population), 1946, 1993, 2003 and 2010. The last AC, carried out in 2010 together with the SAPM, is the second census that complies with EU legislation and the first to be carried out after Bulgaria acceded to the EU.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the AC 2010 included:

- the 2010 Census of Agricultural farms in the Republic of Bulgaria Act, Promulgated, State Gazette No. 102/22.12.2009; and
- the EU legislation<sup>1</sup> relevant for implementing the FSS 2010.

### **Institutional framework and international collaboration.**

The AC 2010 was organized and managed by the Ministry of Agriculture and Food (MAF), together with the regional governors and mayors of municipalities. The AC bodies were the Agrostatistics Department, which is the agricultural statistics body at the MAF, the regional offices (ROs), the Central Census Commission (CCC) and the Regional Census Commissions (RCC).

### **Census staff**

The AC 2010 and SAPM field data collection involved 2 654 enumerators and 290 supervisors. In addition, 144 operators were engaged for the data entry operation.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 August 2010, for livestock data, capacity of animal housing, etc.

Reference periods:

- crop year 2009/2010 (from 1 October 2009 to 30 September 2010), for total area, total UAA, area under main crops, irrigated area, organic crops, etc.;
- the 12 months preceding the reference day (31 August 2010), for labour force characteristics, machinery and equipment; and
- the last three years (2008–2010), for landscape features, rural development support and average irrigated area.

## 4. ENUMERATION PERIOD

The AC 2010 data collection started on 1 September 2010 and ended on 30 December 2010 (the data collection period was extended by one month beyond the original deadline of 30 November 2010).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding, defined as a separate technical and economic unit that has a single management and that produces agricultural products or maintains agricultural land, which is no longer used for production purposes, in good agricultural and environmental conditions.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Bulgaria applied the following national thresholds: 0.5 ha of UAA; 0.3 ha of arable land; 0.5 ha of natural meadows; 0.1 ha of orchards (compact plantation), vineyards, vegetables, hops, tobacco, spices, medical and essential oil crops, flowers, ornamental plants; 0.05 ha of greenhouses; one cow/buffalo-cow; two cattle/ buffaloes; one female for reproduction (Equidae); two working animals (Equidae); five pigs; one breeding-sow; five breeding-ewes; two breeding she-goats; 50 laying hens; 100 chicken for fattening; or one reproductive male animal used for natural mating – bull, stud, boar, etc.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2010.

### **Frame**

The type of frame used in the census was a list based on data from the previous census and the annual updates. The preliminary list was prepared on the basis of information from 12 major sources and sent to the regional offices for updating.

<sup>1</sup> (i) Regulation (EC) No. 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No. 571/88 and (ii) Commission Regulation (EC) No. 1200/2009 of 30 November 2009 implementing Regulation (EC) No. 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards livestock unit coefficients and definitions of the characteristics.



**Complete and/or sample enumeration methods**

The AC 2010 and the SAPM were conducted using complete enumeration.

**Sample design (if sampling was used)**

Not applicable.

**Data collection methods**

Data collection was done by means of face-to-face interviews using the PAPI method. The enumerators visited and interviewed all statistical units in the list as well as new holdings that had not been included in the initial list. These were identified with the support of the mayors of the settlements.

**Questionnaire(s)**

Three main forms were used during the data collection process: (i) the main statistical questionnaire (Form No. 1) was a questionnaire on farm characteristics; (ii) the household-listing questionnaire (Form No. 2) was used to determine whether the households in urban areas met the criteria for an agricultural holding; and (iii) Form No.3 was used for temporarily or permanently inactive holdings on the holdings list or the Farm Register.

The census questionnaires covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Online data dissemination was applied to publish the agricultural census results.

**10. DATA PROCESSING AND ARCHIVING**

Data processing, estimation and analysis were carried out at the central level. A special computer module was prepared for data entry. Data entry from the completed questionnaires in the computer module began in mid-September 2010, and was performed by operators in the regional offices of the MAF. Data regarding rural development support were crosschecked with the administrative records provided by the Paying Agency. In case of doubt, data from the Paying Agency was imputed into the database.

**11. CENSUS DATA QUALITY**

A pilot census was conducted during the preparatory stage of the census with the main objective of testing census methodology.

**12. DATA DISSEMINATION**

The preliminary results were published in May 2011 on the website of the MAF, seven months after the end of the reference period. Final detailed results were released in October 2012.<sup>2</sup>

The AC 2010 results are available on the institution's website.<sup>3</sup>

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in Bulgaria. In: European Commission: Eurostat [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Bulgaria](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Bulgaria)

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**Eurostat.** 2012. *Farm Structure Survey 2009/2010 and Survey on agricultural production methods 2009/2010, National Methodological Report*. Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/BG\\_NMR\\_FSS\\_2010.pdf/29fde8a8-4751-4217-a1cf-b2f4bb2aefd5](http://ec.europa.eu/eurostat/documents/749240/749313/BG_NMR_FSS_2010.pdf/29fde8a8-4751-4217-a1cf-b2f4bb2aefd5))

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<sup>2</sup> The census results reflect the state of agriculture in Bulgaria in 2010 and are the basis for decision-making by state and local governments, as well as by the EU and other European institutions in the implementation of the Common Agricultural Policy in the EU.

<sup>3</sup> <http://www.mzh.government.bg/bg/search/?q=2010+Agricultural+census>

BULGARIA – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>370 490</b>	<b>5 260 520</b>
Civil persons	365 110	1 799 980
An individual (sole holder holdings) <sup>1</sup>	365 110	1 799 980
Juridical persons (legal entities)	5 380	3 460 540

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>370 490</b>	<b>4 475 530</b>
Legal ownership and owner-like possession (owned land)	342 080	1 580 550
Rented from others (land rented)	73 040	2 894 980

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>370 490</b>	<b>4 475 530</b>
Holdings without UAA	13 150	
Holdings with UAA	357 340	4 475 530
Less than 2 ha	294 960	144 180
2–4.99 ha	30 390	90 450
5–9.99 ha	10 730	72 700
10–19.99 ha	6 820	92 450
20–29.99 ha	2 950	70 040
30–49.99 ha	3 060	116 180
50–99.99 ha	2 930	201 670
100 ha and over	5 490	3 687 860

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>370 490</b>	<b>5 260 520</b>
UAA	357 340	4 475 530
Arable land	250 730	3 124 930
Land temporarily fallow	12 490	106 490
Land under permanent crops	118 610	99 650
Permanent meadows and pastures	107 530	1 240 590
Kitchen garden	227 930	10 360
Other land	328 170	784 990
Wooded area	7 040	701 610
Unutilised agricultural land and other areas	328 030	83 380

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>370 490</b>	<b>370 490</b>
Male	286 140	286 140
Female	84 350	84 350

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>316 480</b>
Male	94 310
Female	222 170

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>738 900</b>
Male	417 700
Female	321 200
Family labour force	681 470
Male	375 870
Female	305 600
Regular non-family labour force	57 430
Male	41 830
Female	15 610

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>370 490</b>
Male	286 140
Female	84 350
Less than 35 years	25 540
Male	17 560
Female	7 980
35–44 years	44 480
Male	34 130
Female	10 350
45–54 years	68 500
Male	53 520
Female	14 990
55–64 years	93 810
Male	73 400
Female	20 400
65 years and over	138 160
Male	107 530
Female	30 620

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>279 710</b>	
Cattle	95 870	586 380
Sheep	91 790	1 415 180
Goats	84 580	388 870
Pigs/swine	82 270	670,470
Equines (Equidae)	92 810	112 630
Poultry (1 000 head)	n.a	n.a
Poultry - broilers	19 460	7 560
Laying hens	180 250	7 880
Others	30 780	2 050
Other animals	n.a	
Rabbits (breeding females)	23 700	144 870
Other	60	
Insects		
Bees (hives)	23 980	588 690

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>104 270</b>	<b>137 510</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>88 340</b>	<b>90 400</b>
Surface	84 080	n.a
Sprinkler	2 410	n.a
Localized irrigation (drop irrigation)	3 220	n.a

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The first agricultural census (AC) since independence was conducted in Croatia in 2003. Previously, a comprehensive census of agriculture was undertaken in 1960, while in 1969, the AC was conducted using the sample method. In 1971, 1981, 1991 and 2001, the enumeration of agricultural holdings was conducted in the framework of the Population Census. This metadata review refers to the most recent Farm Structure Survey (FSS), conducted in Croatia in 2010 on a sample basis. A SAPM was carried out together with the FSS 2010.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The following legal basis for the FSS 2010 was applied:

- the Official Statistics Act (Official Gazette, No. 103/03, 75/09 and 59/12);
- the programme of statistical activities for 2008–2012;
- the annual implementation plan of statistical activities (OJ HR No. 134/10), which deals with all statistical surveys and work to be done in 2010; and
- Regulation (EC) No. 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No. 571/88.

### **Institutional framework and international collaboration**

The Croatian Bureau of Statistics (CBS) was the responsible body for conducting the FSS and the 2010 SAPM. No special Census Committee was formed for the FSS and SAPM 2010, but the Agricultural Statistics Committee (ASC) fulfilled its role. The ASC is an advisory body of the CBS in which various ministries, research institutes and other governmental and non-governmental bodies having an interest in agricultural statistics are represented.

### **Census staff**

In the FSS and the 2010 SAPM, 435 enumerators there were engaged, supervised by supervisors in local offices at the county level. Interviewers and supervisors were selected by the CBS.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 June 2010, for inventory items, such as livestock numbers.

**Reference period:** from 1 June 2009 to 31 May 2010, for data on land characteristics, labour force characteristics, etc.

## 4. ENUMERATION PERIOD

Field data collection took place from 1 June to 20 June 2010.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and animal production) activities.

The **statistical unit** for the FSS 2010 was the agricultural holding (farm), defined as a production management unit engaged in agriculture, either as its primary or secondary activity, which jointly uses labour force and production means (machinery, buildings, or land, etc.). The FSS covered all holdings engaged in agricultural production: family farms, business entities and parts thereof.

## 6. GEOGRAPHIC COVERAGE

The FSS covered all agricultural holdings within the territory of the country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were applied for the agricultural holdings in the FSS 2010:

- at least 0.4 ha of UAA;
- less than 0.4 ha of UAA, but (i) at least 0.1 ha of vineyards, olive groves and/or orchards; (ii) any area of nurseries; or (iii) produce vegetables, medical herbs, strawberries, mushrooms, flowers or ornamental plants for the market; or
- at least 0.5 livestock units (LSUs) or any number of beehives.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used for census data collection.

### **Frame**

The census frame was provided by the Statistical Register of Agricultural Holdings (SRAH), and has been regularly updated since the AC 2003, when it was established. The sampling frame was a list of all active family farms from the SRAH.

**Complete and/or sample enumeration methods**

All agricultural enterprises (business entities) were surveyed using complete enumeration. Private family farms were surveyed using the sampling method.

**Sample design (if sampling was used)**

The sample design for family farms was stratified random sampling. The population of family farms was divided into two parts: (i) the first part consisted of family farms for which the farm's size in terms of European Size Units (ESUs) was calculated; and (ii) the second part consisted of family farms without a calculated ESU. For the population with a calculated ESU, the stratification criteria were the following:

- variable size, a combination of ESUs and UAA – eight sizes;
- specialization of the farm – nine types;
- NUTS 2 regions – three regions defined.

The biggest farms with a large ESU and UAA (9 806 farms) were included exhaustively in the sample.

The farms without a defined ESU were stratified according to their UAA, area under orchards and area under vineyard. Stratified random sampling with explicit regional (NUTS 2) stratification was used.

**Data collection method(s)**

Data on business entities and parts thereof were collected using the self-interviewing (mail-out/mail-back) method. The completed paper forms were submitted to the CBS by post, while data on family farms were collected by interviewers using the PAPI method.

**Questionnaire(s)**

Two versions of the paper questionnaire were prepared: one for family farms and another for business entities. The two questionnaires were slightly different regarding the chapter related to labour force.

The FSS 2010 covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Optical scanning was used for data recording. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

FSS and SAPM data were entered at the CBS with optical readers for the intelligent character recognition and optical mark recognition. To draw the sample SAS programme, the PROC SURVEYSELECT procedure was used. The estimation method used was the Horvitz-Thompson estimator (regular design weight), multiplied with calculated response weights.

**11. CENSUS DATA QUALITY**

The response rate was 97.4 percent. Comprehensive data-checking procedures were put in place. Before corrections were accepted and entered, field supervisors or farmers were contacted by telephone, if necessary. Once the processing was complete, the results were checked at the macro level and compared with the results from other surveys. The data on labour force were compared with the results of the input of labour force in economic accounts for agriculture (EEA).

**12. DATA DISSEMINATION**

The report, with preliminary results, was published in November 2010. The final results were disseminated in September 2012. A database with FSS and SAPM 2010 data is available on the CBS website.

**13. DATA SOURCES**

**Croatian Bureau of Statistics.** 2019. Farm Structure Survey “Notes on methodology”. In: *Croatian Bureau of Statistics* [online]. Zagreb, Croatia. [Cited 23 August 2019]. <https://www.dzs.hr/Eng/DBHomepages/Agriculture/Farm%20structure%20survey/methodology.htm>

**Eurostat.** 2019a. Archive: Structure of agriculture in Croatia. In: European Commission: Eurostat [online]. Luxembourg [Cited 23 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Structure\\_of\\_agriculture\\_in\\_Croatia](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Structure_of_agriculture_in_Croatia)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**14. CONTACT**

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# CROATIA – FARM STRUCTURE SURVEY 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>233 280</b>	<b>1 512 410</b>
Civil persons	231 070	1 286 940
An individual (sole holder holdings) <sup>2</sup>	231 070	1 286 940
Juridical persons (legal entities)	2 210	225 470

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>233 280</b>	<b>1 316 010</b>
Legal ownership and owner-like possession (owned land)	229 160	715 720
Rented from others (land rented)	65 470	600 290

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>233 280</b>	<b>1 316 010</b>
Holdings without UAA	230	
Holdings with UAA	233 050	1 316 010
Less than 2 ha	122 560	100 680
2–4.99 ha	55 430	177 470
5–9.99 ha	30 240	208 860
10–19.99 ha	13 880	188 580
20–29.99 ha	4 330	103 090
30–49.99 ha	3 470	132 300
50–99.99 ha	2 290	154 230
100 ha and over	850	250 790

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>233 280</b>	<b>1 512 410</b>
UAA	233 050	1 316 010
Arable land	186 270	895 220
Land temporary fallow	10 090	11 330
Land under permanent crops	185 820	78 300
Permanent meadows and pastures	129 200	339 270
Kitchen garden	195 430	3 220
Other land	220 930	196 400
Wooded area	95 700	103 960
Unutilised agricultural land and other areas	216 410	92 440

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>233 280</b>	<b>1 316 010</b>
Male	181 870	1 088 370
Female	51 400	227 650

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>273 190</b>
Male	96 850
Female	176 340

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>513 680</b>
Male	282 950
Female	230 740
Family labour force	499 350
Male	272 280
Female	227 060
Non-regular family labour force	14 330
Male	10 660
Female	3 670

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>233 280</b>
Male	181 870
Female	51 400
Less than 35 years	9 600
Male	7 990
Female	1 610
35–44 years	28 020
Male	22 830
Female	5 190
45–54 years	58 420
Male	47 100
Female	11 320
55–64 years	63 570
Male	49 780
Female	13 790
65 years and over	73 670
Male	54 160
Female	19 500

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>194 090</b>	
Cattle	47 340	497 100
Sheep	30 030	886 200
Goats	12 250	112 360
Pigs/swine	128 060	1 501 180
Equines (Equidae)	4 310	17 770
Horses	n.a.	15 419
Mules and hinnies	n.a.	240
Asses	n.a.	2 111
Poultry (1 000 head)	n.a.	n.a.
Broilers	49 770	7 780
Laying hen	165 010	4 650
Other poultry	42 430	1 040
Other animals	n.a.	
Rabbits (breeding females)	13 080	39 330
Other	170	
Insects		
Bees (hives)	3 960	122 520

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

## 1. HISTORICAL OUTLINE

The Czech Republic participated in the WCA in 1930, 1970, 1980 and 1990 as part of the federal state formed by the Czech and the Slovak Republics. These were followed by the agricultural censuses (ACs) carried out in 2000 and 2010. The AC 2010, to which the metadata and data presented here refer, was conducted together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The agricultural census legislation included:

- Act No. 89/1995 Coll., on the State Statistical Service, as amended, the basic national legislation related to statistical surveys;
- the Programme of Statistical Surveys for the year 2010, which was published as an annex to Chapter 125 of Decree No. 386/2009, in the Collection of Laws of the Czech Republic, of 13 November 2009; and
- the EU legislation<sup>1</sup> relevant for implementing the FSS 2010.

### *Institutional framework and international collaboration*

The Agricultural, Forestry and Environmental Statistics Department (AFESD) of the Czech Statistical Office (CZSO) was responsible for the preparation, adherence to methodology and the organization of the AC 2010. For the implementation of the AC 2010, the CZSO also collaborated with other national institutions, such as the Ministry of Agriculture, the Institute of Agricultural Economics and Information, the Research Institute of Agricultural Engineering, the Agrarian Chamber of the Czech Republic and other agricultural organizations. The director of the AFESD was fully responsible for conducting the AC. The heads of the CZSO regional offices were responsible for the AC operations in the field.

### *Census staff*

The staff involved in the AC 2010 amounted to 265 persons.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 30 September 2010, for land use, livestock and SAPM variables.

### *Reference periods:*

- from 1 October 2009 to 30 September 2010, for labour force variables, cropped area, area irrigated at least once;
- the last three years (2008–2010), for support for rural development variables, landscape features, etc.

## 4. ENUMERATION PERIOD

The enumeration was conducted from September to December 2010 (the respondents were requested to reply within 30 days of being contacted). The very last day of the follow-up data collection operation was 22 February 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities based on the common statistical classification of economic activities (CZ-NACE), either as its primary or secondary activity, including holdings exclusively maintaining agricultural land in good agricultural and environmental condition.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The AC included agricultural holdings reaching the following threshold values:

- area above 5 ha of UAA;
- more than 1 ha of orchards, or 3 500 m<sup>2</sup> of vineyards;
- sum of area for vegetables, strawberries and flowers exceeding 2 500 m<sup>2</sup>;
- breeding of five head of cattle, ten head of pigs, or ten head of sheep and goats; or
- 100 head of poultry, including ostriches.

The threshold excludes only a small proportion of agricultural holdings, that is, less than 2 percent of UAA and livestock units.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the AC 2010. Some census data were collected directly from administrative registers.

<sup>1</sup> (i) Regulation (EC) No. 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No. 571/88 and (ii) Commission Regulation (EC) No. 1200/2009 of 30 November 2009 implementing Regulation (EC) No. 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards livestock unit coefficients and definitions of the characteristics.

**Frame**

The frame for agricultural statistical surveys is based on the Farm Register managed by the AFESD. The Farm Register is updated regularly. Data on livestock numbers and areas under crops are updated yearly, based on statistical surveys as well as administrative sources such as: (i) the Land Parcel Information System (LPIS) and (ii) the Livestock Register.

**Complete and/or sample enumeration methods**

The AC 2010 and the SAPM were conducted using complete enumeration.

**Sample design (if sampling was used)**

Not applicable.

**Data collection methods**

Two data collection methods were used in the AC: (i) the self-interviewing method, by regular mail (mail-out/mail-back), and (ii) face-to-face interviewing (PAPI). The characteristics concerning rural development support were not included in the AC and SAPM 2010 questionnaires. These data were obtained using an administrative data source, the State Agricultural Intervention Fund.

**Questionnaire(s)**

A single AC questionnaire was used in the AC 2010. The census questionnaire covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

In the AC 2010, the new technology was used for: (i) data capture using Optical Character Reader (OCR) technology; (ii) obtaining data on rural development support from administrative registers; and (iii) for the online dissemination of census results.

**10. DATA PROCESSING AND ARCHIVING**

The Department of Statistical Data Processing (DSDP) of the CZCO provided centralized processing of questionnaires using OCR. The DSDP carried out checks for accuracy, coherence and completeness of the data files at the national level (including checks for duplicate identification numbers). The staff of CZSO Regional Offices converted their data files to an electronic form using Dataman Windows programme, including the data from Osev 3-01 and Zem 1-01 databases.

**11. CENSUS DATA QUALITY**

To ensure census data quality, a multi-stage control process was adopted, starting with (i) basic controls during field data collection of questionnaires by interviewers, followed by (ii) controls of questionnaires with responses at the CZSO Regional Offices, and (iii) controls during data processing (logic checks, checks for completeness, linkage to nomenclatures, duplicates).

**12. DATA DISSEMINATION**

The first publication with final census results ("Agrocensus 2010 - Farm Structure Survey and Survey on Agricultural Production Methods") was released in August 2011. The second publication was issued in October 2011, with final results in regional distribution (NUTS3, selected data for LAU1). The third publication (with thematic analyses) was published in August 2012 and consisted of two parts: (i) farm typology and (ii) comparison of the results of the AC 2010 and the AC 2000 (the co-author of this publication was the Institute of Agricultural Economics and Information). The AC results, including the census publications, are available free of charge on the CZSO website. Almost all publications are bilingual (Czech and English).

**13. DATA SOURCES**

**Czech Statistical Office (CZSO).** 2012. *Farm Structure Survey 2009/2010 and Survey on agricultural production methods 2009/2010, National Methodological Report*. Prague, Czech Republic. Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/CZ\\_NMR\\_FSS\\_2010.pdf/4dfdb012-3525-4343-8bf3-3b628ba2b91c](http://ec.europa.eu/eurostat/documents/749240/749313/CZ_NMR_FSS_2010.pdf/4dfdb012-3525-4343-8bf3-3b628ba2b91c)).

**Eurostat.** 2019a. Archive: Agricultural census in the Czech Republic. In: *European Commission: Eurostat*. [online]. Luxembourg. [Cited 23 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_the\\_Czech\\_Republic](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_the_Czech_Republic)

**Eurostat.** 2019. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**14. CONTACT**

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# CZECHIA – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>22 860</b>	<b>5 065 270</b>
Civil persons	19 780	1 064 290
An individual (sole holder holdings) <sup>2</sup>	19 780	1 064 290
Juridical persons (legal entities)	3 080	4 000 980

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>22 860</b>	<b>3 483 500</b>
Legal ownership and owner-like possession (owned land)	19 740	767 120
Rented from others (land rented)	14 080	2 716 380

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>22 860</b>	<b>3 483 500</b>
Holdings without UAA	290	
Holdings with UAA	22 580	3 483 500
Less than 2 ha	1 980	1 820
2–4.99 ha	1 260	3 990
5–9.99 ha	4 180	29 390
10–19.99 ha	3 950	55 590
20–29.99 ha	2 060	49 780
30–49.99 ha	2 310	88 400
50–99.99 ha	2 420	169 360
100 ha and over	4 420	3 085 160

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>22 860</b>	<b>5 065 270</b>
UAA	22 580	3 483 500
Arable land	15 000	2 517 490
Land temporarily fallow	1 370	37 460
Land under permanent crops	3 590	36 950
Permanent meadows and pastures	15 970	928 820
Kitchen garden	410	240
Other land	11 020	1 581 770
Wooded area	5 410	1 546 950
Unutilised agricultural land and other areas	8 740	34 820

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>22 860</b>	<b>3 483 500</b>
Male	19 420	3 263 070
Female	3 450	220 430

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>23 210</b>
Male	12 180
Female	11 030

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>132 730</b>
Male	88 350
Female	44 380
Family labour force	42 970
Male	28 730
Female	14 240
Regular non-family labour force	89 760
Male	59 630
Female	30 140

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>22 860</b>
Male	19 420
Female	3 450
Less than 35 years	2 670
Male	2 220
Female	450
35–44 years	4 730
Male	4 020
Female	710
45–54 years	6 140
Male	5 250
Female	890
55–64 years	6 410
Male	5 500
Female	910
65 years and over	2 920
Male	2 420
Female	500

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>15 920</b>	
Cattle	10 080	1 328 930
Sheep	4 190	184 030
Goats	1 410	16 900
Pigs/swine	4 000	1 907 990
Equines (Equidae)	3 470	25 200
Poultry (1 000 head)	n.a.	n.a.
Poultry – broilers	270	15 290
Laying hens	5 110	8 990
Others	1 430	1 040
Other animals	n.a.	
Rabbits (breeding females)	950	4 440
Other	1 240	
Insects		
Bees (hives)	530	9 610

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>960</b>	<b>32 230</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>910</b>	<b>19 200</b>
Surface	130	n.a.
Sprinkler	610	n.a.
Localized irrigation (drop irrigation)	310	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.



## 1. HISTORICAL OUTLINE

Denmark has participated in the WCA since 1930. In the following years, the agricultural surveys were conducted as censuses (on a complete enumeration basis): until 1983, 1985, 1987, 1989, 1999 and 2010. A SAPM was carried out in 2011 to complete the data collected in the 2010 Agricultural Census, AC (or Farm Structure Survey, FSS).

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Law on Statistics Denmark places an obligation on all business units, including agricultural holdings, to complete statistical questionnaires. Likewise, when requested, all government institutions must send their administrative data to Statistics Denmark. The AC 2010 also complies with the relevant EU legislation.

### **Institutional framework and international collaboration**

Statistics Denmark's Division of Agriculture (SDDA) has the authority and responsibility for the CA.

### **Census staff**

Three persons from the SDDA were deployed full-time for the AC 2010 and SAPM activities. Eight persons worked part-time on the AC and the SAPM. No field staff was involved in census data collection, as the questionnaires were filled in using self-registration or by telephone (see section 8).

## 3. REFERENCE DATE AND PERIOD

### **Reference dates:**

- 1 June 2010, for farms applying for subsidies (for data on cattle, collected from the livestock register);
- 14 May 2010, for all characteristics that can be meaningfully assigned to one specific day, such as livestock; and
- the date of the enumeration, for farms not applying for subsidies.

### **Reference periods:**

- one year prior to the survey day, for labour force characteristics, education, etc. and
- the previous three years (2008-2010), for rural development characteristics.

## 4. ENUMERATION PERIOD

The AC data collection took place between 7 July 2010 (when the questionnaires were sent to farmers) and March 2011 (following the final telephone reminders). The SAPM data collection took place between 25 June 2011 and November 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and animal production) activities.

The **statistical unit** is the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in Annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, either as its primary or secondary activity.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The AC 2010 and the SAPM include all holdings that fulfil at least one of the following criteria:<sup>1</sup>

- an agricultural area of at least 5 ha;
- a standard output of at least EUR 7 500;
- fruits, berries and nursery area of at least 0.5 ha;
- vegetables and strawberries of at least 0.5 ha;
- greenhouse and mushrooms of at least 1 000 m<sup>2</sup>;
- at least ten cattle, 50 pigs, ten sows, 20 sheep, 20 goats, 1 000 head of poultry, or 40 fur animals.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2010. Administrative registers were also used as a source of census items.

<sup>1</sup> It is estimated that Danish farms that did not meet the abovementioned threshold cover approximately 1.2 percent of the agricultural area of the country and 0.6 percent of the total standard gross margin of Danish agriculture.

**Frame**

The frame for the AC 2010 and the SAPM 2011 was Statistics Denmark's Business Register, with all units marked as "active in agriculture" and that met the minimum requirements of the holding.

**Complete and/or sample enumeration method(s)**

The AC was a complete enumeration of all agricultural holdings and the SAPM was a sample survey.

**Sample design (if sampling was used)**

The sample design for the SAPM was a stratified random sampling.<sup>2</sup>

**Data collection methods**

For the AC and SAPM field data collection, different methods were applied: (i) personalized postal questionnaires (mail-out/mail-back method); (ii) Internet-based questionnaires (CAWI method); and (iii) Computer-assisted Telephone Interviewing (CATI). The administrative data were extensively used as a source of census items for the AC 2010.

**Questionnaire(s)**

One questionnaire was used for AC data collection and one for the SAPM. Both paper-based and electronic questionnaires were used for data collection.

The census covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

New data collection methods were applied in the AC 2010: CAWI (used by 2 percent of respondents) and CATI (used to collect data from 10 percent of respondents). Optical scanning was used for data capture. Administrative registers were also used as a source of census items. Online dissemination was applied to release census results.

**10. DATA PROCESSING AND ARCHIVING**

The majority of paper questionnaires received from the respondents by post were scanned (77 percent); the data from other paper questionnaires (23 percent) were keypunched. Data from the IACS were transferred directly into the statistical database. The questionnaires were registered and also edited in an Oracle database; there were approximately 150 validation rules. All individual information was checked both manually and by means of computer-based validation routines. The imputation was performed using SAS and SQL programming.

**11. CENSUS DATA QUALITY**

Completion/correction methods were applied, such as follow-up interviews (approximately 5 percent of the farms were contacted once by telephone if important information was missing on the questionnaire). All staff that worked on the AC and SAPM had the authority to correct survey information (for instance after contacting a farmer); however, the imputations, where necessary, were performed only by the survey leader.

**12. DATA DISSEMINATION**

The AC 2010 results (including the detailed regional data) were published in May 2011. A database with FSS and SAPM 2010 data is available on the CBS website. The AC 2010 results were published in the Statistical Ten-Year Review 2011 (in August 2011), the Agricultural Statistical Yearbook 2010 (in November 2011) and the Statistical Yearbook 2012 (in April 2012).

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in Denmark. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 23 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Denmark](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Denmark)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Statistics Denmark.** 2012. *Farm Structure Survey 2009/2010. Survey on agricultural production methods 2009/2010.* National Methodological Report. Copenhagen, Denmark. Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/DK\\_NMR\\_FSS\\_2010.pdf/b6daff0-63ea-4543-b0b3-370c4b278a8a](http://ec.europa.eu/eurostat/documents/749240/749313/DK_NMR_FSS_2010.pdf/b6daff0-63ea-4543-b0b3-370c4b278a8a)).

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DENMARK – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>41 360</b>	<b>3 001 380</b>
Civil persons	39 510	2 683 790
An individual (sole holder holdings) <sup>2</sup>	39 510	2 683 790
Juridical persons (legal entities)	1 850	317 590

DISTRIBUTION OF UTILIZED AGRICULTURAL AREA (UAA), BY LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>41 360</b>	<b>2 646 860</b>
Legal ownership and owner-like possession (owned land)	39 270	1 820 890
Rented from others (land rented)	19 710	825 970

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>41 360</b>	<b>2 646 860</b>
Holdings without UAA	860	
Holdings with UAA	40 510	2 646 860
Less than 2 ha	520	350
2–4.99 ha	950	3 410
5–9.99 ha	8 050	57 640
10–19.99 ha	7 790	112 080
20–29.99 ha	4 310	105 960
30–49.99 ha	4 900	190 590
50–99.99 ha	5 920	426 090
100 ha and over	8 080	1 750 750

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>42 110</b>	<b>3 001 380</b>
UAA	40 510	2 646 860
Arable land	37 370	2 419 290
Land temporarily fallow	7 700	34 740
Land under permanent crops	4 410	27 720
Permanent meadows and pastures	24 960	199 860
Other land	27 530	354 510
Wooded area	12 900	211 870
Unutilised agricultural land and other areas	26 250	142 640

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>41 360</b>	<b>2 646 860</b>
Male	37 630	2 523 870
Female	3 740	122 990

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Engaged in agricultural activities on the holding</b>	<b>16 760</b>
Male	4 740
Female	12 020

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>78 700</b>
Male	57 750
Female	20 950
Family labour force	56 070
Male	40 410
Female	15 660
Regular non-family labour force	22 640
Male	17 350
Female	5 290

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>41 360</b>
Male	37 630
Female	3 740
Less than 35 years	1 960
Male	1 780
Female	170
35–44 years	7 560
Male	6 920
Female	640
45–54 years	13 800
Male	12 590
Female	1 210
55–64 years	10 260
Male	9 290
Female	960
65 years and over	7 800
Male	7 050
Female	750

LIVESTOCK		
	Holdings	Heads
<b>Total holdings with livestock</b>	<b>25 300</b>	
Cattle	13 580	1 571 050
Sheep	2 570	159 630
Goats	720	13 010
Pigs/swine	5 070	13 173 060
Equines (Equidae)	8 210	59 740
Poultry (1 000 head)	n.a.	n.a.
Broilers	280	12 840
Laying hens	3 080	3 900
Other poultry	2 070	2 000
Other animals	n.a.	
Rabbits (breeding females)	210	820
Other	750	
Insects		
Bees (hives)	650	6 730

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>7 930</b>	<b>480 440</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>5 710</b>	<b>320 180</b>
Sprinkler	5 300	n.a.
Localized irrigation (drop irrigation)	230	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The Agricultural Census (AC) 2010 was the sixth AC to be conducted in Estonia. The previous ones were conducted in 1919, 1925, 1929, 1939 and 2001.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

There is no specific national legislation for the agricultural censuses. The AC 2010 was conducted in accordance with:

- the Official Statistics Act and
- the Official Statistical Programme for 2010, Order No. 524 (03.12.2009), approved by the Government of the Republic of Estonia.

The Official Statistics Act states that in the collection and processing of data in the course of an AC, the producer of official statistics shall proceed from the requirements provided for in Regulation (EC) No. 1166/2008.

### **Institutional framework and international collaboration**

The responsible agency for implementing the AC 2010 was Statistics Estonia; the responsible department was the Agricultural Statistics Department.

### **Census staff**

The staff involved in census data collection included 132 interviewers, seven supervisors, two persons mainly for data processing and one mainly for methodological issues (covering temporary positions).

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 September 2010, for inventory items, such as the number of livestock.

**Reference periods** were:

- from 1 September 2009 to 31 August 2010 for land use, the area of crops, labour force, etc.;
- the previous 12 months for irrigation, vocational training of the manager, etc.; and
- the last three years (2008, 2009, 2010), for rural development measures, etc.

## 4. ENUMERATION PERIOD

The AC was conducted from 1 September to 15 November 2010.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding having at least 1 ha of UAA or the agricultural products of which were produced mainly for sale.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

In case of holdings with less than 1 ha of UAA and no information on the products produced for sale, a physical threshold was used to determine potential holdings producing mainly for sale. The threshold was as follows: at least three cattle; ten pigs, sheep or goats; ten swarms of bees or 100 head of poultry; 0.5 ha of fruit and berry plantations; 0.3 ha of fresh vegetables; 0.2 ha of nursery; 0.01 ha of outdoor flowers, crops under glass or arable land seeds. See also section 5.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2010. Administrative registers were also used as a source of census items.

### **Frame**

The target population includes all holdings that satisfy the definition of the statistical unit and that were registered in the Farm Register. The Farm Register is regularly updated on the basis of various administrative and statistical sources.<sup>1</sup>

### **Complete and/or sample enumeration method(s)**

The AC 2010 was conducted using complete enumeration.

<sup>1</sup> The Farm Register is regularly updated on the basis of several administrative and statistical sources, such as: (i) the Register of Agricultural Animals; (ii) the Register of Agricultural Support and Agricultural Parcels, together with annual land use data; (iii) the Organic Farming Register; (iv) the Statistics Estonia Business Register (based on the Commercial Register, the Non-Profit Institutions and Foundations Register, the Register of Taxable Persons, and the Register of State and Local Government Agencies); (v) the Population Register; and (vi) data from official agricultural statistics surveys.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

Two methods were used for data collection: CAWI and Computer-assisted Personal Interviewing (CAPI). The general helpdesk of Statistics Estonia was available during the census.

**Questionnaire(s)**

Two questionnaires were used for census data collection: one for natural persons and another for legal persons. The respondents could submit the census data through the electronic data transmission channel eSTAT.

The census questionnaires covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

New technology was used in the AC 2010 for: (i) data capture, using CAWI and CAPI; (ii) collection of data on organic farming and rural development support, directly from administrative registers; and (iii) the online dissemination of census results and user access to microdata.

**10. DATA PROCESSING AND ARCHIVING**

The census data were collected mainly through electronic questionnaires. Several types of controls were used, including controls to verify that the information was coherent and that the questionnaires were completed correctly and in full. There were also controls to identify inconsistencies compared to administrative data. Imputation was used on a very small scale and, generally, in case of unit nonresponse (holders that could not be contacted or in case of refusals).<sup>2</sup> =

**11. CENSUS DATA QUALITY**

Important efforts were made to ensure that the census questionnaires were carefully designed and accompanied by internal arithmetical and logical checks, to make sure that errors were caught and corrected during data collection. The use of electronic questionnaires, especially CAPI, also contributed to the quality of census data.

**12. DATA DISSEMINATION**

The preliminary data of the AC 2010 were published on 17 December 2010 in the form of a press release. The final results, together with metadata, were published on 15 December 2011 in the statistical database of Statistics Estonia.<sup>3</sup> The census was published in September 2012 and is available on the Statistics Estonia webpage.<sup>4</sup>

Researchers can, under special contracts, use anonymized microdata for research purposes at the safe centre on Statistics Estonia's premises or using remote access. They can analyse the data, but the data must remain with Statistics Estonia until an employee has subjected the information to disclosure control.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in Estonia: In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 23 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Estonia](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Estonia)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Statistics Estonia.** 2012. *Farm Structure Survey 2009/2010 and Survey on agricultural production methods 2009/2010, National Methodological Report*. Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/EE\\_NMR\\_FSS\\_2010.pdf/13d96e39-5973-4aa0-9382-2e1dfd0343a4](http://ec.europa.eu/eurostat/documents/749240/749313/EE_NMR_FSS_2010.pdf/13d96e39-5973-4aa0-9382-2e1dfd0343a4)).

**14. CONTACT**

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<sup>2</sup> Imputations were mostly done using the cold-deck imputation method. Land use data and data on livestock were imputed only on the basis of administrative data. In the case of other characteristics, data from the Farm Structure Survey 2007 were used; when those data were missing, the hot deck nearest-neighbour imputation method was used.

<sup>3</sup> The database is available at : <http://www.stat.ee/ac2010>

<sup>4</sup> [https://www.stat.ee/publication-2012\\_agricultural-census-2010](https://www.stat.ee/publication-2012_agricultural-census-2010)

ESTONIA – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>19 610</b>	<b>1 241 850</b>
Civil persons	17 890	685 100
An individual (sole holder holdings) <sup>2</sup>	17 890	685 100
Juridical persons (legal entities)	1 730	556 760

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>19 610</b>	<b>940 930</b>
Legal ownership and owner-like possession (owned land)	17 620	377 980
Rented from others (land rented)	4 690	495 620
Other form of tenure (shared farming or other modes)	2 410	67 330

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>19 610</b>	<b>940 930</b>
Holdings without UAA	150	
Holdings with UAA	19 460	940 930
Less than 2 ha	2 210	2 920
2–4.99 ha	4 250	14 100
5–9.99 ha	4 070	29 300
10–19.99 ha	3 470	48 690
20–29.99 ha	1 480	35 970
30–49.99 ha	1 170	45 050
50–99.99 ha	1 090	76 210
100 ha and over	1 720	688 710

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>19 610</b>	<b>1 241 850</b>
UAA	19 460	940 930
Arable land	12 950	640 040
Land temporarily fallow	2 910	42 160
Land under permanent crops	1 990	3 120
Permanent meadows and pastures	15 910	296 060
Kitchen garden	7 820	1 710
Other land	19 610	300 920
Wooded area	13 160	223 970
Unutilised agricultural land and other areas	19 610	76 960

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>19 610</b>	<b>940 930</b>
Male	12 590	805 330
Female	7 020	135 600

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>21 800</b>
Male	10 500
Female	11 300

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>52 340</b>
Male	28 820
Female	23 520
Family labour force	39 420
Male	21 320
Female	18 100
Regular non-family labour force	12 920
Male	7 500
Female	5 420

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>19 610</b>
Male	12 590
Female	7 020
less than 35 years	1 350
Male	950
Female	400
35–44 years	3 450
Male	2 500
Female	950
45–54 years	4 660
Male	3 240
Female	1 430
55–64 years	4 590
Male	2 910
Female	1 690
65 years and over	5 560
Male	3 000
Female	2 560

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>9 680</b>	
Cattle	4 620	241 030
Sheep	1 950	87 140
Goats	590	3 670
Pigs/swine	1 550	388 500
Equines (Equidae)	990	6 740
Poultry (1 000 head)	n.a.	n.a.
Poultry – broilers	120	1 040
Laying hens	4 870	860
Others	780	40
Other animals		
Rabbits (breeding females)	550	3 380
Other	1 240	
Insects		
Bees (hives)	2 120	21 970

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>230</b>	<b>460</b>
<b>Holdings with irrigated area<sup>5</sup></b>		
Sprinkler	120	n.a.
Localized irrigation (drop irrigation)	100	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) in Finland was conducted in 1910. Since then agricultural censuses have been conducted almost every ten years. The latest ACs were carried out in 1959, 1969, 1990 and 1999/2000. The tenth and last AC was carried out in 2010.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the AC 2010 included:

- Finland's Statistics Act (280/2004);
- the Acts on the Information Centre of the Ministry of Agriculture and Forestry (No. 1200/1992 and No. 667/2006);
- the Act on Rural Business Statistics (1197/1996); and
- Relevant EU legislation.

### **Institutional framework**

Since 1995, the Information Centre of the Ministry of Agriculture and Forestry (Tike) has been responsible for implementing FSSs, including the ACs. Tike was responsible for the implementation of the AC 2010 and of the SAPM conducted together, as a project. Tike's Director General was also the Chairperson of the project's Steering Group.

### **Census staff**

No field staff were involved, as self-interviewing and telephone interviewing methods were used for data collection. See also section 8 ("Data collection methods").

## 3. REFERENCE DATE AND PERIOD

### **Reference days:**

- 1 April 2010, for the number of horses, pigs and poultry; and
- 1 May 2010, for the number of cattle, sheep and goats.

### **Reference periods:**

- harvest year 2010, for crops;
- calendar year 2010, for irrigation, other gainful activities, grazing land and manure;
- from 1 September 2009 to 31 August 2010, for labour force; and
- the previous three years (2008, 2009 and 2010), for rural development characteristics.

## 4. ENUMERATION PERIOD

The data collection operation started on 1 September 2010 and ended on 1 March 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** in the AC 2010 was the agricultural holding. Two types of holdings were distinguished: "farms" and "horticultural enterprises" that were "engaged in commercial agricultural or horticultural production".

A farm is defined as a holding/business that has a utilized arable land area of at least 1 ha or at least one animal unit of livestock. The farms do not include horticultural enterprises that are solely engaged in greenhouse production. A horticultural enterprise is a holding engaged in horticultural production intended for sale (for example, greenhouse enterprises).

## 6. GEOGRAPHIC COVERAGE

The entire area of the country was covered by the census, both urban and rural areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The AC 2010 covered the holdings engaged in commercial agricultural production that have:

- an utilized arable land area of at least 1 ha;
- less than 1 ha of arable land used for horticultural production; or
- at least one animal unit of livestock.

Farming for the household's own consumption was not included in the scope of the AC 2010.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The majority of the data for the AC 2010 were taken directly from statistical registers, which are regularly updated using statistical and administrative data sources. The remaining data were collected using specific (AC and SAPM) questionnaires (see below). In Finland, questions required for statistical purposes have been added to subsidy application forms in cooperation with the agricultural administration and Tike's Statistics Group.

**Frame**

The frame for the AC included all: (i) farms and horticultural enterprises included in either the Farm Register or the Horticultural Enterprise Register (in 2009); and (ii) all farms that were new applicants for farming subsidies in 2010.

**Complete and/or sample enumeration method(s)**

The AC was conducted as a complete enumeration of agricultural holdings. The SAPM was conducted as a sample survey.

**Sample design**

A stratified sample was used for the SAPM.

**Data collection method(s)**

The majority of the data for the AC 2010 were taken directly from two statistical registers, the Farm Register and Horticultural Enterprise Register. The missing data (such as labour force, education and training, other gainful activities, renewable energy, irrigation) were collected using either the AC or the SAPM questionnaires.

Information for the AC and the SAPM was collected using the CAWI and CATI methods.

**Questionnaire(s)**

There were two questionnaires: one for the CA and one for the SAPM. The questionnaires covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

New data collection methods were applied in the AC 2010: CAWI and CATI. Statistical registers, updated based on administrative data sources, replaced a significant proportion of traditional data collection. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Specific checks were used in both the online forms and the software used to enter data from telephone interviews. The results were produced using SAS software. Variances for the SAPM were estimated using the CLAN software developed by Statistics Sweden.

Missing information on farms and horticultural enterprises that did not respond to the AC was filled in using imputation methods. The imputation method used varied, depending on the amount of background information available for the variable in question. The most common imputation method was to fill in a missing data item using an average obtained from similar farms, or to substitute information on a missing farm with data from a similar farm that had filled in the questionnaire. Missing geographical coordinates were obtained using the farm's address details.

**11. CENSUS DATA QUALITY**

Data verification began during the collection period, as checks were carried out in online forms and by the software used to enter data during telephone interviews. Although information was checked during collection, more thorough verification and processing procedures were carried out once the data collection period had ended. The values for the most important crop areas and livestock numbers from the SAPM differed very little from the values from the complete enumeration of all holdings, the differences being usually of less than 5 percent and well within the coefficients of variation of the sample.

**12. DATA DISSEMINATION**

Preliminary census results on different topics were published in five batches, from June to December 2011, on the website of the Natural Resources Institute Finland (Luke). The results of the AC were published using Tilastolaari's dynamic reporting service. The final results of the AC were published in May 2012 and those of the SAPM in September 2012. Detailed census data can be found at on the Luke website.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in Finland. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Finland](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Finland)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Tike.** 2012. *National Methodological Report. Farm Structure Survey 2009/2010*. Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/FI\\_NMR\\_FSS\\_2010.pdf/b44ca9dd-122a-4f9d-bfef-67a82c49ddddd](http://ec.europa.eu/eurostat/documents/749240/749313/FI_NMR_FSS_2010.pdf/b44ca9dd-122a-4f9d-bfef-67a82c49ddddd)).

**Tike.** 2013. *Maatalouslaskenta 2010 (Agricultural Census 2010)*. Helsinki, Greece. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Reports\\_4/FIN\\_FIN\\_ENG\\_REP\\_vol\\_I\\_2010.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Reports_4/FIN_FIN_ENG_REP_vol_I_2010.pdf)).

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FINLAND – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>63 870</b>	<b>6 250 610</b>
Civil persons	62 620	6 111 710
An individual (sole holder holdings) <sup>2</sup>	57 600	5 523 500
Two or more individuals (group holdings)	5 020	588 210
Juridical persons (legal entities)	1 260	138 910

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>63 870</b>	<b>2 290 980</b>
Legal ownership and owner-like possession (Owned land)	61 040	1 498 160
Rented from others (Land rented)	37 680	792 820

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>63 870</b>	<b>2 290 980</b>
Holdings without UAA	400	
Holdings with UAA	63 470	2 290 980
Less than 2 ha	1 440	990
2–4.99 ha	4 340	16 410
5–9.99 ha	7 970	59 550
10–19.99 ha	13 340	197 000
20–29.99 ha	9 730	240 580
30–49.99 ha	12 000	465 950
50–99.99 ha	10 840	746 910
100 ha and over	3 820	563 590

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>63 870</b>	<b>6 250 610</b>
UAA	63 470	2 290 980
Arable land	63 060	2 253 450
Land temporarily fallow	40 770	306 950
Land under permanent crops	2 640	4 580
Permanent meadows and pastures	8 340	32 950
Other land	60 480	3 959 630
Wooded area	58 210	3 118 570
Untilled agricultural land and other areas	59 620	841 060

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>63 870</b>	<b>2 290 980</b>
Male	56 770	2 124 050
Female	7 100	166 930

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>		
	Number	
<b>Total engaged in agricultural activities on the holding</b>	<b>48 710</b>	
Male	20 180	
Female	28 520	

LABOUR FORCE OF THE HOLDING		
	Number	
<b>Total</b>	<b>125 290</b>	
Male	84 390	
Female	40 900	
Family labour force	111 170	
Male	75 520	
Female	35 640	
Regular non-family labour force	14 120	
Male	8 860	
Female	5 260	

MANAGERS BY SEX AND AGE <sup>3</sup>		
	Number	
<b>Total</b>	<b>63 870</b>	
Male	56 770	
Female	7 100	
Less than 35 years	5 500	
Male	4 670	
Female	820	
35–44 years	12 750	
Male	11 110	
Female	1 640	
45–54 years	20 210	
Male	18 330	
Female	1 880	
55–64 years	19 310	
Male	17 330	
Female	1 980	
65 years and over	6 110	
Male	5 330	
Female	780	

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>23 130</b>	
Cattle	15 640	925 790
Sheep	1 350	125 670
Goats	170	4 890
Pigs/swine	2 080	1 366 930
Equines (Equidae)	5 320	31 590
Poultry (1 000 head)	n.a.	n.a.
Broilers	110	4 620
Laying hens	1 120	4 680
Others	140	10

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>4 570</b>	<b>68 560</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>2 920</b>	<b>26 480</b>
Sprinkler	2 060	n.a.
Localized irrigation (drop irrigation)	590	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The metadata review and data here presented refer to the last agricultural census (AC) conducted in France, in 2010. Previous agricultural censuses were conducted in 1955, 1970, 1979, 1988 and 2000. The first AC was carried out only in France, in Europe. In French territories (French Guyana, Guadeloupe, Réunion and Martinique), ACs were conducted starting from 1970.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the AC 2010 was provided by:

- the FAO WCA 2010;
- EU legislation related to farm structural surveys and other relevant regulations;<sup>2</sup>
- Decree No. 2009-529 of 11 May 2009 on conducting a general agricultural census in 2010,<sup>3</sup> which sets the precise scope of the census;
- Law No. 51-711 of 7 June 1951 on the obligation, coordination and confidentiality of statistics; and
- Decree No. 86-1169 of 31 October 1986 which establishes (Article 3) that agricultural statistics in the French territories of Guyana, Guadeloupe, Martinique and Réunion will be under the authority of the French Minister of Agriculture through the Director of Agriculture and Forest.

### **Institutional framework and international collaboration**

The AC 2010 and the SAPM, carried out jointly with the census, were conducted entirely by the Ministry of agriculture. Its statistical service, the Service for Statistics and Prospective (SSP)<sup>4</sup>, which is an integral part of the public statistics system, was responsible for designing the operation, drafting the census tools (questionnaires, instruction manuals, etc.), training the regional services, running the final check on the quality of the data collected and the dissemination of census results. Data collection and first-level validation were entrusted to the regional services of the SSP.<sup>5</sup>

In the French territories, the Statistical Service of the Direction of Food, Agriculture and Forest, within the Ministry in charge of agriculture was responsible for undertaking the census.

The census was funded by the national budget.

### **Census staff**

The number of enumerators involved in the fieldwork was approximately 3 200 people, including 3 000 persons in France in Europe; 66 in French Guyana, 58 in Guadeloupe, 35 in Martinique and 59 in Réunion.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 November 2010, for inventory items, such as livestock numbers.

### **Reference periods:**

- the 2009/2010 agricultural production year (1 November 2009–31 October 2010) for crops, machinery and equipment, production methods and labour; and
- calendar years 2008, 2009 and 2010 for rural development characteristics.

## 4. ENUMERATION PERIOD

Data collection took place between September 2010 and June 2011 (completeness checks and feedback included; see also section 11).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural (crop and livestock) production activities.

The **statistical unit** in the AC 2010 was the agricultural holding, defined as an economic unit that participates in agricultural production and meets the following criteria:

- it has an agricultural activity either of production, or of maintenance of the lands in good agricultural and environmental

<sup>1</sup> For statistical purposes, agricultural censuses in French territories (French Guyana, Guadeloupe, Réunion and Martinique) are recorded separately in the World Census of Agriculture Database. Consequently, the metadata review for France includes specific metadata regarding its territories. The census results are presented for all of France. The first table with main results shows the total number and area of holdings broken down by continental France, on one hand, and its overseas territories, on the other.

<sup>2</sup> EU regulations: (1) Regulation (EC) No. 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No. 571/88; (2) Council Regulation (EEC) No. 357/79 of 5 February 1979 on statistical surveys of areas under vines; (3) Regulation (EC) No. 177/2008 of the European Parliament and of the Council of 20 February 2008, establishing a common framework for business registers for statistical purposes and repealing Council Regulation (EEC) No. 2186/93, etc.

<sup>3</sup> Decree No. 2009-529 of 11 May 2009 on conducting a general agricultural census in 2010 entrusts the survey to the responsible body; defines the geographical scope and logic (1 ha threshold); defines the census objectives; authorizes local advisory committees to meet in preparatory phases; specifies that the answers collected come under the Statistical Confidentiality Act (No. 51-711 of 7 June 1951) and the Information Technology and Freedoms Act (No. 78-17 of 6 January 1978).

<sup>4</sup> *Service de la Statistique et de la Prospective*

<sup>5</sup> In the SSP, national responsibility for the survey lies with the Sub-Directorate for Agricultural, Forestry and Agri-Food Statistics (SDSAFA), and more specifically the Office of Structural, Environmental and Forestry Statistics (BSSEF), the national unit responsible for the operation.

conditions, which allows it to receive decoupled aids for production tools (DPU), or of creating available collective grazing areas, which allows it to file a request for an agri-environmental grassland premium (PHAE);

- it is of a certain size (see section 7 below),
- its current management is independent of any other unit.<sup>6</sup>

## 6. GEOGRAPHIC COVERAGE

The geographical scope covers all of France in Europe. In the French overseas departments, the territories of Saint-Martin, Saint-Barthélemy and Mayotte were not covered by the AC.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The threshold established for the agricultural holdings in France in Europe was that stipulated in Regulation (EC) No. 1166/2008. The general threshold was 1 ha, except for cases of intensive agricultural production (including growing crops under protective cover), for which it was lower.

The French overseas territories (Guadeloupe, Martinique, French Guyana and Reunion) had specific thresholds. The AC covered agricultural holdings that met at least one of the following criteria:

- agricultural area is greater or equal to 1 ha;
- has at least 0.2 ha of any specialized crop (vegetables or fruits);
- has at least: one broodmare or mule, one cow, two cattle older than two years, one sow mother, six sheep mothers, six goats, ten breeding rabbits (female), 100 head of poultry, 1 000 hatching eggs capacity, or ten beehives in production; or
- cultivates at least one of the following crops: 20 acres of asparagus or cabbage sauerkraut; 15 acres of strawberries; 5 acres gardening (not for only consumption) or of floral and ornamental crops; 10 acres under vine producing original appellation wines (AOC); 5 acres of vineyards in Champagne or of nurseries (wine, ornamental, fruit, forest); or 40 individual fruit trees; or
- during the agricultural year 2009/2010 produced at least: two horses for slaughtering, five calves, five pork, ten sheep or ten goats for slaughtering, 200 rabbits for meat, 500 broiler poultry, 50 fat poultry, 10 000 eggs, or 2 tons of chicory or 1 ton of mushrooms or watercress for sale; or
- holdings breeding fur animals such as mink, nutria, chinchillas, goats and angora rabbits, as well as game farms in captivity for slaughter or sale-out hunting.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC. Administrative registers were also used as a source of census data.

### **Frame**

The basic list of agricultural holdings was built using the SSP farm register, the SIRENE register (business register), the list of farmers who had applied for aid (area declarations),<sup>7</sup> and some additional sources for beekeeping, olive oil, aromatic plants. The holding lists were checked at local level by communal commissions.

### **Complete and/or sample enumeration method(s)**

The AC and SAPM were conducted using complete enumeration.

### **Sample design (if sampling was used)**

Sampling was not used.

### **Data collection method(s)**

The field collection operation was conducted using the face-to-face CAPI method. Extensive use was made of the administrative data that supports the EU programmes for agriculture, such as on areas receiving aid, bovine livestock, organically farmed areas and livestock, and the vineyard register. These data were used to improve the coverage, lighten the response requirements, and check the quality of census data.<sup>8</sup>

**Questionnaire(s).** Three questionnaires were used: one for France in Europe (including questions of regional interest) and two for France's overseas territories: one for Guadeloupe, Martinique and Réunion and another for Guyana.

The census covered all 16 core items recommended in the WCA 2010.

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<sup>6</sup>

## 9. USE OF TECHNOLOGY

The CAPI method was applied, using tablets for field data collection. Some census items were collected using administrative registers. Census results were disseminated and are accessible online. An online database enables users to retrieve customized tables with census data at the national and subnational levels.

## 10. DATA PROCESSING AND ARCHIVING

The CAPI interface included controls to ensure that there were responses to all questions. In addition, interactive range and consistency checks were included for each variable so that corrections could be made by the enumerator during the interview. Further edits and imputations were completed at the central office where the census validation and tabulation was completed. To ensure that the list of holdings was complete, several tests were conducted at the end of collection. All available administrative sources were used to verify that existing holdings had been identified and included. The key databases and registers used included that for EU agriculture aid applications, the national database of bovine identification, the computerized vineyard register, organic producer records, and some local registers for small productions. The data, after validation, were archived on secured servers.

## 11. CENSUS DATA QUALITY

To assess the quality of field data collection, completeness checks and feedback were performed at the end of field data collection operation, from March to June 2011. Data checking began during the collection phase on the farmer's premises. It then continued throughout the processing chain.

A special effort was made to check the AC's coverage by using the administrative data available. The nonresponse rate was of only 0.96 percent, and the missing data were imputed using the hot deck method.

## 12. DATA DISSEMINATION

The first provisional census results were disseminated in September 2011, ten months after the end of the reference period. The main final results were made available at the end of February 2012, 16 months after the end of the reference period.

The AC 2010 results were disseminated online and are available on the SSP website.<sup>9</sup> The "ADEL" tool allows web users to build their own tables.

## 13. DATA SOURCES

**Agreste, Secretariat General, Service de la statistique et de la prospective (SSP), Ministère de l'agriculture et de l'alimentation.** Recensement agricole 2010. In: *Agreste, Secretariat General, Service de la statistique et de la prospective (SSP)* [online]. Paris, France. [Cited 11 September 2018]. <http://agreste.agriculture.gouv.fr/enquetes/structure-des-exploitations-964/recensement-agricole-2010/>

**Eurostat.** 2019a. Archive: Agricultural census in France. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_France](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_France)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

## 14. CONTACT

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Website: SSP – [www.agreste.agriculture.gouv.fr](http://www.agreste.agriculture.gouv.fr)

<sup>9</sup> The Primeur journal, four to eight pages long by theme and at national and regional levels; municipal files setting out the main data for the 36 000 communes of France; general tables for all types of public data; and interactive *Géoclip* mapping.

# FRANCE– AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total France</b>	<b>516 100</b>	<b>29 546 440</b>
France in Europe	491 390	29 393 620
French Guiana	5 980	38 150
Guadeloupe	7 810	34 040
Réunion	7 620	52 390
Martinique	3 310	28 260

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>516 100</b>	<b>29 546 440</b>
Civil persons	404 080	18 684 320
An individual (sole holder holdings) <sup>2</sup>	365 500	12 780 530
Two or more individuals (group holdings)	38 580	5 903 790
Juridical persons (legal entities)	112 030	10 862 130

DISTRIBUTION OF UTILIZED AGRICULTURAL AREA (UAA), LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>516 100</b>	<b>27 837 290</b>
Legal ownership and owner-like possession (owned land)	361 100	6 555 990
Rented from others (land rented)	337 170	20 949 070
Other form of tenure (shared farming or other modes)	22 490	332 230

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>516 100</b>	<b>27 837 290</b>
Holdings without UAA	9 490	
Holdings with UAA	506 620	27 837 290
Less than 2 ha	66 580	62 450
2–4.99 ha	62 690	204 860
5–9.99 ha	46 640	332 500
10–19.99 ha	50 150	718 070
20–29.99 ha	33 280	818 870
30–49.99 ha	55 240	2 186 620
50–99.99 ha	97 780	7 059 970
100 ha and over	94 250	16 453 960

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>516 100</b>	<b>29 546 440</b>
UAA	506 620	27 837 290
Arable land	356 660	18 386 080
Land temporarily fallow	133 390	628 910
Land under permanent crops	127 670	1 018 330
Permanent meadows and pastures	295 620	8 418 880
Kitchen garden	82 400	14 000
Other land	474 800	1 709 160
Wooded area	139 900	1 003 370
Unutilised agricultural land and other areas	470 960	705 790

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>516 100</b>	<b>27 837 290</b>
Male	398 990	24 079 160
Female	117 120	3 758 130

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>165 950</b>
Male	82 610
Female	83 350

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>1 014 750</b>
Male	691 960
Female	322 800
Family labour force	568 350
Male	386 790
Female	181 560
Regular non family labour force	446 410
Male	305 170
Female	141 240

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>516 100</b>
Male	398 990
Female	117 120
Less than 35 years	45 090
Male	37 770
Female	7 320
35–44 years	109 440
Male	90 920
Female	18 520
45–54 years	166 990
Male	136 370
Female	30 630
55–64 years	132 720
Male	95 570
Female	37 150
65 years and over	61 870
Male	38 370
Female	23 500

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>309 370</b>	
Cattle	199 620	19 506 210
Sheep	56 480	7 475 000
Goats	17 510	1 432 570
Pigs/swine	24 450	13 921 520
Equines (Equidae)	54 640	433 890
Poultry (1 000 head)	n.a.	n.a.
Poultry – broilers	41 720	143 600
Laying hens	76 320	78 060
Other	35 470	74 470
Other animals	n.a.	n.a.
Rabbits (breeding females)	30 790	855 790
Holdings with other livestock	2 130	
Insects		
Bees (hives)	12 560	818 420

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>157 680</b>	<b>2 341 200</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>75 160</b>	<b>1 583 610</b>
Surface	5 800	n.a.
Sprinkler	60 350	n.a.
Localized irrigation (drop irrigation)	19 570	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

Beginning with 1949, agricultural censuses have been carried out in the Federal Republic of Germany in 1960, 1971 and 1979. The 1991 census of agriculture (CA) was the first carried out in the unified Germany, followed by the CAs conducted in 1999 and 2010. The CA 2010 was conducted together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal framework of the CA 2010 included:

- the Law on Statistics for Federal Purposes of 22 January 1987 (Federal Law Gazette I p. 462, 565), as amended;
- the Law on Agricultural Statistics of 17 December 2009 (Federal Law Gazette I p. 3886), as amended;
- the Law on Equal Status for Set-Aside and Agriculturally Used Areas of 10 July 1995 (Federal Law Gazette I p. 910), as amended; and
- the EU legislation relevant for implementing the FSS 2010.

### **Institutional framework and international collaboration**

The CA in Germany is decentralized. Coordination and the statistical methodology is under the responsibility of the Federal Statistical Office (FSO), with the participation of the statistical offices of the *Länder*.

### **Census staff**

In the CA 2010, the following number of staff were involved (project staff and permanent staff): 39 employees of the FSO and 345 employees of the statistical offices of the *Länder*.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 March 2010, for inventory items, such as livestock.

### **Reference periods:**

- the last 12 months, for manure, renewable energy;
- from March 2009 to February 2010, for labour force and mushrooms;
- the year 2009, for irrigation, animal grazing and other gainful activities;
- year 2010, for legal form, location, land use and crops, organic farming and types of land tenure;
- the three previous years (from 2008 to 2010), for crop rotation, rural development support, etc.; and
- from June 2009 until May 2010 for intercropping.

## 4. ENUMERATION PERIOD

The CA 2010, including the SAPM, was conducted between January 2010 (posting of the questionnaires) and January 2011 (reminders to late and non-respondents).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). Forestry enterprises above the established threshold were also covered by the census.

The **statistical unit** was the agricultural holding, defined as “a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in Annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the European Union, either as its primary or secondary activity”.

## 6. GEOGRAPHIC COVERAGE

The CA 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Germany applied the following threshold: (i) 5 ha of UAA; (ii) 0.5 ha of hops or tobacco or of area for fruit-growing; under vines or tree nurseries; or of outdoor vegetable or strawberry cultivation; or (iii) 1 ha of permanent outdoor crops; (iv) 0.3 ha of outdoor flower or ornamental plant cultivation; (v) 0.1 ha of crops under glass or other accessible protective cover or mushrooms; or (vi) ten cattle, 50 pigs, ten breeding sows, 20 sheep, 20 goats, 1 000 poultry.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CA 2010. Some census data were collected directly from administrative registers.

**Frame**

The statistical farm register served for preparation, execution and processing of the CA. An extensive survey to identify the population (SiP) was conducted in 2009. In addition to the results of the SiP, administrative data were used (such as trade association data) to update the statistical farm register. The frame of the CA 2010 was composed of approximately 300 000 holdings.

**Complete and/or sample enumeration methods**

The CA 2010 was conducted using complete enumeration. The SAPM was conducted as a sample survey.

**Sample design**

The SAPM was a sample survey, using a stratified sampling procedure. The sample was a single-stage (stratified) sample with approximately 78 000 holdings in the sample. The Agricultural Statistics Law sets a maximum sample size of 80 000 holdings.

**Data collection methods**

The respondents completed the questionnaires sent to them via post (mail-out/mail-back and drop-off/pick-up) by the statistical offices of the *Länder* or provided to them online on their own (Computer-assisted Self Interviewing, or CASI); alternatively, they gave the information to interviewers or survey offices by telephone (CATI), if these methods were used for the survey. In addition, the statistical offices of the *Länder* used data from administrative data sources as a source of census data and for validation purposes.

**Questionnaire(s)**

Four questionnaires were used in the CA and SAPM. The questionnaires covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

New technology was used in the CA 2010, such as: (i) the CASI and CATI methods for census data collection; (ii) to collect some census data directly from administrative registers; and (iii) for the online dissemination of census results.

**10. DATA PROCESSING AND ARCHIVING**

The processing programme AGRA 2010 was used for census data processing. This programme undertakes 727 mandatory error tests, 211 possible error tests and 11 automated corrections. Once the tabulated results are available, a manual control is carried out for factual and mathematical accuracy. This refers to the results within a table and to a comparison of tables. Then, the results are compiled for publication taking, data protection and confidentiality provisions into account.

**11. CENSUS DATA QUALITY**

The AGRA 2010 processing programme was the main instrument for making edits of completeness and plausibility. After completion of the final CA results, the estimates were matched with those of previous surveys and administrative data. No significant or unexpected differences were noted.

**12. DATA DISSEMINATION**

The FSO made the results of the CA 2010 available at the national and regional level (NUTS 1). Initial preliminary results of the CA 2010 were presented at a press conference in January 2011, and were also made available on the FSO website. In addition, the final results were published in the framework of the information activities of the FSO. At the national level, extensive results of the CA were published on the FSO website.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in Germany. In: European Commission: Eurostat [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Germany](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Germany)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: European Commission: Eurostat [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Federal Statistical Office.** 2012. Farm Structure Survey 2009/2010 and Survey on agricultural production methods 2009/2010. National Methodological Report. Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/DE\\_NMR\\_FSS\\_2010.pdf/2c8bfc71-da54-41a0-85e0-8de85280c4bd](http://ec.europa.eu/eurostat/documents/749240/749313/DE_NMR_FSS_2010.pdf/2c8bfc71-da54-41a0-85e0-8de85280c4bd)).

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Website: <https://www.destatis.de/EN/Homepage.html>

# GERMANY – CENSUS OF AGRICULTURE 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>299 130</b>	<b>18 387 080</b>
Civil persons	294 070	15 272 050
An individual (sole holder holdings) <sup>2</sup>	273 030	12 426 390
Two or more individuals (group holdings)	21 040	2 845 660
Juridical persons (legal entities)	5 060	3 115 030

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>299 130</b>	<b>16 704 040</b>
Legal ownership and owner-like possession (owned land)	270 290	6 460 560
Rented from others (land rented)	221 970	9 982 640
Other form of tenure (shared farming or other modes)	29 160	260 850

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>299 130</b>	<b>16 704 040</b>
Holdings without UAA	1 410	
Holdings with UAA	297 730	16 704 040
Less than 2 ha	14 260	14 250
2–4.99 ha	11 690	39 750
5–9.99 ha	47 310	343 950
10–19.99 ha	63 160	945 800
20–29.99 ha	30 970	769 910
30–49.99 ha	45 100	1 765 110
50–99.99 ha	51 620	3 628 400
100 ha and over	33 620	9 196 880

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>299 130</b>	<b>18 387 080</b>
UAA	297 720	16 704 040
Arable land	229 310	11 846 670
Land temporarily fallow	57 710	252 390
Land under permanent crops	37 820	198 760
Permanent meadows and pastures	239 390	4 654 690
Kitchen garden	22 310	3 930
Other land	245 120	1 683 040
Wooded area	146 110	1 369 760
Unutilised agricultural land and other areas	230 320	313 280

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>299 130</b>	<b>16 704 040</b>
Male	273 920	15 616 320
Female	25 220	10 87 730

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Engaged in agricultural activities on the holding</b>	<b>283 310</b>
Male	113 850
Female	169 460

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>749 750</b>
Male	490 660
Female	259 080
Family labour force	577 390
Male	381 240
Female	196 140
Regular non-family labour force	172 360
Male	109 420
Female	62 940

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>299 130</b>
Male	273 920
Female	25 220
Less than 35 years	21 280
Male	18 570
Female	2 710
35–44 years	73 420
Male	66 420
Female	7 000
45–54 years	109 270
Male	100 760
Female	8 510
55–64 years	79 270
Male	73 950
Female	5 320
65 years and over	15 900
Male	14 230
Female	1 680

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>216 100</b>	
Cattle	144 850	12 534 510
Sheep	22 270	2 088 540
Goats	11 220	149 940
Pigs/swine	60 100	27 571 350
Equines (Equidae)	49 000	461 780
Poultry (1 000 head)	n.a.	n.a.
Chicken	n.a.	102 810
Broilers	4 530	67 530
Layers	56 290	35 280
Other poultry	10 750	26 090

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.



## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) was conducted in 1950. Since 1950, five censuses of agriculture have been held, in 1961, 1971, 1981, 1991, 1999/2000 and 2009/2010. The 2009/2010 AC, to which these metadata and data refer, was conducted simultaneously with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

According to Law No. 3832, 9 March 2010, the Hellenic Statistical Authority (ELSTAT) is the national statistical service responsible for conducting censuses and other statistical surveys.

The AC is conducted pursuant to the Joint Ministerial Decision of the Minister of Finance, the Minister of Rural Development and Food and the Minister of Interior, Decentralization and E-government, according to a Presidential Decree and in compliance with EU census legislation.

### **Institutional framework and international collaboration**

The Central Office of ELSTAT undertook the activities related to the AC and SAPM preparation and organization, and to the production and dissemination of the results. To implement the AC and SAPM, a working group was set up in the Central Office of ELSTAT. The data collection and processing were carried out by Regional Statistical Offices (RSOs) of the 51 districts.

A pilot study was carried out in collaboration with the Agricultural University of Athens, as well as with the National Institute of Agricultural Economics of Italy (INEA). Its objective was to provide a model for the estimation of the volume of water used for irrigation in agriculture.

### **Census staff**

The census staff was composed of: (i) two senior supervisors; (ii) 52 supervisors and 235 assistant supervisors (in the RSO); (iii) 8 345 enumerators (“interviewers”) and 105 interpreters accompanying interviewers; (v) 550 local statistical correspondents for the common land questionnaires; and (v) one expert to contribute to survey design, processing, tabulation design and publication.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 November 2009, for inventory items such as livestock numbers.

### **Reference periods:**

- agricultural year (from 1 October 2008 to 30 September 2009), for land operated for agricultural purposes, labour force, irrigation, etc., as well as for the SAPM; and
- the last three years (2007, 2008 and 2009), for rural development

## 4. ENUMERATION PERIOD

The enumeration period for the AC and the SAPM was from July to October 2010.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered only agricultural activities (crop and animal production).

The **statistical unit** is the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in Annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, as either its primary or its secondary activity.

In addition, Communal Departments (local administrative units – LAU 2) were included in the AC to provide data regarding the area of common permanent grassland (using a specific questionnaire).

## 6. GEOGRAPHIC COVERAGE

The AC covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were established to define the agricultural holding:

- at least 1 *stremma* (or 0.1 ha) of UAA or at least 0.5 *stremma* (0.05 ha) of greenhouses;
- one or more cows or two or more other “large animals” of any type and age (such as cattle, horses, donkeys, mules);
- five or more “small animals” (sheep, goats, pigs) of any age and type;
- 50 or more head of poultry;
- 20 or more hives of “domestic” or “European” bees; or
- five or more ostriches.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2010.

**Frame**

The basic farm register (BFR) used for the AC was based on the register from the 1999 census, updated using the FSS surveys of 2003, 2005 and 2007 and the annual agricultural surveys. The BFR was also updated using two registers of the Ministry of Rural Development and Food (on New Farmers and Organic Farming).

**Complete and/or sample enumeration methods**

The AC 2010 was carried out based on a complete enumeration basis. The SAPM was a sample survey.

**Sample design (if sampling was used)**

One-stage stratified random sampling was used for the SAPM.

**Data collection method**

The data collection of the AC and SAPM was carried out through personal interviews with the farm holders, using paper questionnaires. Prior to the interview date, the interviewers had a first contact with the farmers to arrange the interview date. The interviews generally took place at the holder's residence, although some interviews were conducted at municipality offices. The completion time per questionnaire was approximately 30 minutes.

**Questionnaire(s)**

Two questionnaires were used in the AC, to collect: (i) individual census data from the agricultural holdings and (ii) data on common land from Communal Departments. One questionnaire was used for the SAPM.

The AC and SAPM questionnaires covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

The data entry operation was based on scanning of the questionnaire, using OCR technology. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

The data entry was done almost exclusively using OCR and only in some special cases, where it was not possible to scan the questionnaires, were the data entered manually into the database. The hot deck approach was used for data imputation. The auxiliary variables, used to define the imputation classes for holdings were municipality/commune, type of farming, and economic size.

The data processing was carried out in the period from November 2010 to March 2012.

**11. CENSUS DATA QUALITY**

Follow-up interviews were conducted in cases where missing or incorrect data were detected. In most cases, these were done by telephone. The census data were validated against the data from previous FSSs, as well as from other agricultural surveys, and some administrative data sources.

**12. DATA DISSEMINATION**

The final results of the AC, at national level, were available in November–December 2012 in the form of detailed tables. A publication presenting the results of the AC was prepared in September 2013, in electronic and printed formats. The publication is available on the ELSTAT website (only in Greek).<sup>1</sup>

**13. DATA SOURCES**

**Eurostat.** 2019a. *Archive: Agricultural census in Greece*. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Greece](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Greece)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Hellenic Statistical Authority.** 2012. *Farm Structure Survey 2009/2010. Survey on agricultural production methods 2009/2010. National Methodological Report*. Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/EL\\_NMR\\_FSS\\_2010.pdf/0ffaade3-04a1-4000-a5b6-903b532c6d7f](http://ec.europa.eu/eurostat/documents/749240/749313/EL_NMR_FSS_2010.pdf/0ffaade3-04a1-4000-a5b6-903b532c6d7f)).

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<sup>1</sup> Available at: <http://www.statistics.gr/documents/20181/66d08d56-f5d9-485e-abba-7452c06cbad2>

GREECE – AGRICULTURAL CENSUS 2009/2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>723 060</b>	<b>5 461 290</b>
Civil persons	722 400	3 736 000
An individual (sole holder holdings) <sup>2</sup>	722 400	3 736 000
Juridical persons (legal entities)	660	1 725 290

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>723 060</b>	<b>5 177 510</b>
Legal ownership and owner-like possession (owned land)	686 930	2 161 580
Rented from others (Land rented)	146 320	1 227 800
Other form of tenure (shared farming or other modes)	16 050	1 788 120

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>723 060</b>	<b>5 177 510</b>
Holdings without UAA	6 190	
Holdings with UAA	716 870	5 177 510
Less than 2 ha	367 160	309 510
2–4.99 ha	183 820	575 890
5–9.99 ha	87 770	603 720
10–19.99 ha	45 580	622 390
20–29.99 ha	14 670	352 260
30–49.99 ha	10 850	406 600
50–99.99 ha	5 480	356 960
100 ha and over	1 540	1 950 180

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>723 060</b>	<b>5 461 290</b>
UAA	716 870	5 177 510
Arable land	322 060	1 767 900
Land temporarily fallow	81 440	151 010
Land under permanent crops	546 070	950 270
Permanent meadows and pastures	56 830	2 450 240
Kitchen garden	180 170	9 110
Other land	297 140	283 780
Wooded area	12 700	50 470
Unutilised agricultural land and other areas	291 050	233 310

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>723 060</b>	<b>5 177 510</b>
Male	522 990	4 532 750
Female	200 070	644 760

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>464 110</b>
Male	224 880
Female	239 240

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>1 212 770</b>
Male	732 460
Female	480 310
Family labour force	1 186 510
Male	709 340
Female	477 170
Regular non-family labour force	26 260
Male	23 120
Female	3 140

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>723 060</b>
Male	522 990
Female	200 070
Less than 35 years	50 180
Male	36 670
Female	13 510
35–44 years	112 710
Male	81 290
Female	31 420
45–54 years	163 060
Male	118 600
Female	44 460
55–64 years	156 230
Male	114 330
Female	41 900
65 years and over	240 890
Male	172 100
Female	68 790

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>273 160</b>	
Cattle	16 790	651 780
Sheep	91 930	9 156 820
Goats	71 590	4 213 230
Pigs/swine	19 330	947 220
Equines (Equidae)	14 140	30 130
Poultry (1 000 head)	n.a.	n.a.
Broilers	102 290	27 750
Laying hens	197 430	8 240
others	19 740	770
Other animals	n.a.	
Rabbits (breeding females)	27 960	165 610
Other	1 370	
Insects		
Bees (hives)	10 550	944 010

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>429 820</b>	<b>1 297 260</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>379 920</b>	<b>1 025 210</b>
Surface	149 890	n.a.
Sprinkler	141 050	n.a.
Localized irrigation (drop irrigation)	189 340	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The first agricultural census (AC) was conducted in Hungary in 1895, followed by the second one in 1935. Starting from 1972, ACs were conducted regularly, in line with the ten-year rounds of the WCA, in 1972, 1981, 1991, 2000 and 2010. The AC 2010 was carried out together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The legal framework of the AC 2010 included:

- Act XLVI of 1993 on Statistics, that provided the general regulatory framework of surveys implemented in Hungary;
- Act XXIV of 2010 approved by the Hungarian Parliament, which provides the regulatory framework of the AC 2010;
- the National Data Collection Programme, OSAP (which includes all statistical surveys to be conducted in the country) approved annually by a government decree; and
- the EU legislation relevant for implementing the FSS 2010.

### *Institutional framework and international collaboration*

The Hungarian Central Statistical Office (HCSO) was responsible for the implementation of the AC. To increase coverage, the HCSO was authorized to use administrative data sources listed in Act XXIV of 2010 and had the legal authority to access them.

### *Census staff*

The staff involved in the AC data collection included 13 500 enumerators, 2 700 supervisors and 270 area agents of the regional directorates.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 June 2010, for inventory items such as livestock characteristics.

### **Reference periods:**

- from 1 June 2009 to 31 May 2010 for labour force, other gainful activities buying and selling land area, irrigation, SAPM, manure storage, animal housing, use of fertilizers;
- the three years preceding the AC (2008–2010), for landscape features, rural development measures and average size of the irrigated area.

## 4. ENUMERATION PERIOD

The enumeration period for the AC 2010 was between 1 June and 21 June 2010.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities related to the production of crop and livestock products, as well as to agricultural services provided by the holdings.

The **statistical unit** was the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in Annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, as either its primary or secondary activity. Two main types of agricultural holding were distinguished: “private holdings” and “agricultural enterprises”.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country, including some urban areas (where agricultural production was allowed).

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

In the 2010 AC, the following physical thresholds were applied for private holdings:

- the holding uses at least: (i) 1 500 m<sup>2</sup> of productive land area (including, jointly or severally, arable land, kitchen garden, orchard, vineyard, meadow, pasture, forest, fish-pond, reed); (ii) 500 m<sup>2</sup> of orchards or vineyards, jointly or severally (at least 400 m<sup>2</sup> of fruit trees and 200 m<sup>2</sup> of berries or vines); or (iii) 100 m<sup>2</sup> of land area under cover, or 50 m<sup>2</sup> of mushroom area;
- the holding has at least: (i) one head of big animals (cattle, pig, horse, sheep, goat, buffalo, emu, ostrich, donkey); (ii) 50 head of poultry, such as hens, geese, ducks, turkeys, guinea fowls; or (iii) 20–25 head of rabbits, furry animals, pigeons for slaughter, or five bee colonies; or
- provides agricultural services.

No threshold was applied for agricultural enterprises.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2010. Some census data were collected directly from administrative registers.

**Frame**

For elaboration of the list of the survey units the basic source was the addresses of the Farm Register (FR). Agricultural enterprises operated in 2010 formed the census frame. Between the AC 2000 and the AC 2010, the FR of private holdings was updated only partially based on the information of the Census of Vineyards and Fruit Plantations 2001, FSSs (2003, 2005 and 2007) and regular annual sample surveys.

In the preparation phase of the AC 2010, the FR was completed with information from administrative data sources.

**Complete and/or sample enumeration methods**

The AC 2010 was a complete enumeration of agricultural holdings. The SAPM was implemented using sampling for private holdings and complete enumeration for agricultural enterprises.

**Sample design (if sampling was used)**

Random sampling was applied for the SAPM in the case of private holdings.

**Data collection method(s)**

The data collection for private holdings was carried out using face-to-face interviews, while for the agricultural enterprises, the data collection was accomplished using self-interviewing, by reporting to the HCSO through the post. The HCSO used some administrative data as a source of census data.

**Questionnaire(s)**

Two types of questionnaires were designed for the implementation of the AC: (i) for private holdings, in two formats: with SAPM questions and without SAPM questions; and (ii) for agricultural enterprises, including SAPM questions. While the content was the same, there were differences in the order of the questions. All questionnaires were printed on paper and also made available on the Internet in Excel format.

The census questionnaires covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

The following new technology was used in the AC 2010: (i) collection of some census data, directly from administrative registers, to reduce the response burden; and (ii) the online dissemination of census results.

**10. DATA PROCESSING AND ARCHIVING**

All data entry applications related to the AC were developed by the IT Department of the HCSO within the framework of the Data Entry and Validation System, run by the HCSO. The staff of the directorates and the Central Office were responsible for data entry. Logical and arithmetical coherency within and between tables were incorporated into the data entry programme. Data were entered and stored in an Oracle database.

**11. CENSUS DATA QUALITY**

A pilot survey was carried out before starting census activities for testing census tools. Key validation rules were incorporated into the data entry application, the micro and macro data were analysed thoroughly, and compared with other available agriculture statistics. The survey results met the quality requirements stated in the related EU regulation.

**12. DATA DISSEMINATION**

The preliminary data were released at a press conference in December 2010. More detailed preliminary data were published in September 2011. The final data were published in several volumes in 2012. The census information is available in English on the HCSO website.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in Hungary. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Hungary](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Hungary)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 9 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

**Hungarian Central Statistical Office.** 2012. *Farm Structure Survey 2009/2010 and Survey on agricultural production methods 2009/2010*. National Methodological Report. Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/HU\\_NMR\\_FSS\\_2010.pdf/20425806-6e3c-469d-81c7-34f5021af05b](http://ec.europa.eu/eurostat/documents/749240/749313/HU_NMR_FSS_2010.pdf/20425806-6e3c-469d-81c7-34f5021af05b)).

**14. CONTACT**

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# HUNGARY – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>576 810</b>	<b>7 102 970</b>
Civil persons	567 630	2 702 610
An individual (sole holder holdings) <sup>2</sup>	567 630	2 702 610
Juridical persons (legal entities)	9 180	4 400 360

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>576 810</b>	<b>4 686 340</b>
Legal ownership and owner-like possession (owned land)	524 360	2 040 350
Rented from others (Land rented)	24 640	2 340 170
Other form of tenure (shared farming or other modes)	14 670	305 820

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>576 810</b>	<b>4 686 340</b>
Holdings without UAA	42 790	
Holdings with UAA	534 020	4 686 340
Less than 2 ha	412 740	138 000
2–4.99 ha	46 060	142 670
5–9.99 ha	26 540	183 910
10–19.99 ha	19 430	268 840
20–29.99 ha	7 950	190 290
30–49.99 ha	7 440	282 690
50–99.99 ha	6 410	445 860
100 ha and over	7 450	3 034 080

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>576 810</b>	<b>7 102 970</b>
UAA	534 020	4 686 340
Arable land	317 370	3 796 920
Land temporarily fallow	42 720	260 040
Land under permanent crops	180 450	151 720
Permanent meadows and pastures	72 100	720 900
Kitchen garden	340 040	16 790
Other land	567 880	2 416 640
Wooded area	47 230	1 723 630
Unutilised agricultural land and other areas	565 820	693 010

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>576 810</b>	<b>4 686 340</b>
Male	424 940	4 141 330
Female	151 870	545 000

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>485 500</b>
Male	127 470
Female	358 040

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>1 143 500</b>
Male	615 490
Female	528 010
Family labour force	1 052 820
Male	544 900
Female	507 920
Regular non-family labour force	90 680
Male	70 590
Female	20 090

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>576 810</b>
Male	424 940
Female	151 870
less than 35 years	40 760
Male	31 190
Female	9 570
35–44 years	84 030
Male	67 740
Female	16 290
45–54 years	122 010
Male	97 190
Female	24 820
55–64 years	160 820
Male	121 950
Female	38 870
65 years and over	169 190
Male	106 870
Female	62 320

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>381 650</b>	
Cattle	19 120	707 400
Sheep	26 780	1 204 350
Goats	19 820	91 730
Pigs/swine	183 100	3 207 910
Equines (Equidae)	27 270	71 110
Poultry (1 000 head)	n.a	n.a
Broilers	18 750	13 920
Laying hens	252 600	10 300
Others	214 450	24 480
Other animals	n.a	
Rabbits (breeding females)	24 250	127 370
Other	27 180	
Insects		
Bees (hives)	10 510	594 470

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>20 260</b>	<b>235 750</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>13 760</b>	<b>114 550</b>
Surface	3 900	n.a
Sprinkler	11 460	n.a
Localized irrigation (drop irrigation)	3 720	n.a

<sup>1</sup> Data source – Eurostat database, available at:

<https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The Agricultural Census (AC) 2010 was the first AC conducted in Iceland.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the AC 2010 was provided by the Act on Statistics Iceland and official statistics (Law No. 163 from 21 December 2007). Provisions on the submission of data and information to Statistics Iceland are contained in a series of laws (the National Registry and Civil Registration Act, in the Register of Enterprises Act, Tax Law, Customs Law, etc.).

The AC 2010 complies with the EU legislation with European Economic Area (EEA) relevance.<sup>1</sup>

### **Institutional framework and international collaboration.**

Statistics Iceland (SI) is the institution in charge of the ACs. Other institutions involved in the AC 2010 were the Icelandic Food and Veterinary Institute, and the Icelandic Farmers Association Agriculture-Economy-Service. A census committee was established within Statistics Iceland.

### **Census staff**

Up to seven persons were involved in the activities related to census data collection.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 October 2010, for inventory items such as livestock numbers and machinery.

**Reference period:** calendar year 2010, for other items such as land use.

## 4. ENUMERATION PERIOD

The data collection period started on 17 January 2011, when personalized log-in information for the web-based module was sent out to respondents, and ended on 1 June 2011, with the last telephone interviews.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** is the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed further on within the economic territory of the EU, as either its primary or secondary activity: these activities include the growing of non-perennial crops, the growing of perennial crops, plant propagation, animal production, mixed farming, support activities to agriculture, and post-harvest crop activities.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

None noted, other than those stated as the minimum threshold of agricultural activity in the EU definition of an agricultural holding.<sup>2</sup>

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC. Some holding characteristics were collected directly from the administrative data sources (see also below).

### **Frame**

Iceland does not have a farm register, nor any other complete data source with an overview of holdings. The census frame was built using Agricultural Tax Returns, VAT Returns and Annual Livestock Surveillance Reports. The initial census listing consisted of 3 241 individuals, and was later revised to 2 699 holdings.

### **Complete and/or sample enumeration methods**

The AC was conducted using complete enumeration.

### **Sample design (if sampling was used)**

No sampling was used (neither for the AC nor for the SAPM).

<sup>1</sup> Regulation (EC) No. 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No. 571/88, etc.

<sup>2</sup> *Ibid.*

**Data collection methods**

Data were collected using a mixed mode strategy (CAWI, mail-out/mail-back, CATI). First, a pre-notification letter was sent to all agricultural holders informing them that an invitation to a web survey would be sent in a few days. In the invitation letter, respondents were provided with a web address for the web questionnaire, as well as a login name and a password. For the units that did not respond through the Internet, a paper questionnaire was sent, along with a prepaid return envelope. This was done approximately two weeks after the original invitation to the web questionnaire.

Some holding characteristics were collected directly from the administrative data sources.<sup>3</sup>

**Questionnaire(s)**

The census questionnaire was available in three formats, for PAPI, CAWI and CATI data collection. Fourteen of the total 16 core items recommended in the WCA 2010 were covered by the census.<sup>4</sup>

**9. USE OF TECHNOLOGY**

CAWI and CATI methods were used for AC data collection. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Three employees of Statistics Iceland entered manually the answers from the paper questionnaires to a database. Finally, for those who answered neither the web questionnaire nor the paper questionnaire, CATI was applied. Blaise survey software was used to create the data files for the data collected through CAWI and CATI. R software was used for data handling. Identification numbers, which were present both for holders and legal units, were used to link data from different data sources. Home addresses and land codes were used to link holders, as holdings in Iceland can have multiple holders.

**11. CENSUS DATA QUALITY**

Completion and correction methods were applied in cases of missing values and implausible values. No follow-up interviews were conducted. Administrative data were used for the missing values, as well as for the validation of the AC results, where the information was available.

**12. DATA DISSEMINATION**

Preliminary results were published in tables, in October 2012, on the Statistics Iceland website, as well as in a specific publication.<sup>5</sup> The Statistical Series issue on agriculture, published for the first time, also includes the census results and is accessible online.<sup>6</sup>

**13. DATA SOURCES**

**Eurostat.** 2019. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Statistics Iceland.** 2012. Farm structure survey 2010. In: *Statistics Iceland* [online]. [Cited 28 August 2019]. <https://www.statice.is/statistics/business-sectors/agriculture/farm-structure-survey/>

**Statistics Iceland.** 2011. *Farm Structure Survey 2010, Survey on agricultural production methods 2010*. National Methodological Report, Eurostat. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Methodology\\_4/ISL\\_ENG\\_MET\\_2010.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Methodology_4/ISL_ENG_MET_2010.pdf)).

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<sup>3</sup> The following administrative data sources were used for the collection of characteristics not otherwise collected in the AC, or for imputation and validation purposes: (i) Registers Iceland; (ii) Agricultural Tax Returns; (iii) VAT Returns; (iv) Land Register; (v) Livestock Surveillance Reports; (vi) Pay-as-you-earn Register; (vii) Beintfrabyli.is, a web-based, centralized marketing network for farms; and (viii) data provided by Vottunarsstofan Tún, an independent conformity assessment body specializing in the inspection and certification of sustainable practices in agriculture, fisheries and related processing and trading activities.

<sup>4</sup> Information on "Main purpose of production of the holding" and "Irrigation" was not collected.

<sup>5</sup> The tables are available at: [https://px.hagstofa.is/pxen/pxweb/en/Atvinnuvegir/Atvinnuvegir\\_landbunadur\\_landbrannsokn](https://px.hagstofa.is/pxen/pxweb/en/Atvinnuvegir/Atvinnuvegir_landbunadur_landbrannsokn).

<sup>6</sup> The Statistical Series are available at: [https://hagstofan.s3.amazonaws.com/media/public/054fde13-26b9-4a3f-8b7b-5b352f736630/pub\\_doc\\_4FmDeoW.pdf](https://hagstofan.s3.amazonaws.com/media/public/054fde13-26b9-4a3f-8b7b-5b352f736630/pub_doc_4FmDeoW.pdf)



# ICELAND – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>2 590</b>	<b>2 560 050</b>
Civil persons	2 240	2 218 230
An individual (sole holder holdings) <sup>2</sup>	2 190	2 157 870
Two or more individuals (group holdings)	50	60 360
Juridical persons (legal entities)	360	341 810

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>2 590</b>	<b>1 595 670</b>
Legal ownership and owner-like possession (owned land)	2 340	1 229 430
Rented from others (land rented)	800	161 130
Other form of tenure (shared farming or other modes)	450	205 110

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>2 590</b>	<b>1 595 670</b>
Holdings without UAA	30	
Holdings with UAA	2 560	1 595 670
Less than 2 ha	50	30
2–4.99 ha	20	50
5–9.99 ha	20	110
10–19.99 ha	30	430
20–29.99 ha	40	970
30–49.99 ha	90	3 400
50–99.99 ha	230	16 770
100 ha and over	2 090	1 573 920

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>2 590</b>	<b>2 560 050</b>
UAA	2 560	1 595 670
Arable land	1 960	34 000
Land temporarily fallow	210	1 220
Land under permanent crops	40	60
Permanent meadows and pastures	2 480	1 561 620
Other land	1 740	964 380
Wooded area	690	25 100
Unutilised agricultural land and other areas	1 460	939 280

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>2 590</b>	<b>1 595 670</b>
Male	2 190	1 377 900
Female	400	217 770

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>1 930</b>
Male	790
Female	1 140

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>5 750</b>
Male	3 710
Female	2 050
Family labour force	4 020
Male	2 580
Female	1 450
Regular non-family labour force	1 730
Male	1 130
Female	600

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>2 590</b>
Male	2 190
Female	400
Less than 35 years	140
Male	100
Female	40
35–44 years	420
Male	350
Female	70
45–54 years	830
Male	700
Female	130
55–64 years	790
Male	690
Female	110
65 years and over	410
Male	360
Female	50

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>2 490</b>	
Cattle	910	74 880
Sheep	1 990	463 380
Goats	60	1 020
Pigs/swine	20	40 870
Equines (Equidae)	1 850	54 700
Poultry (1 000 head)	n.a	n.a
Broilers	30	320
Laying hens	340	200
Others	80	20
Holdings with other livestock	90	

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

Ireland participated in all WCA rounds. Agricultural censuses were conducted annually between 1847 and 1953, and every five years from 1960 to 1980. The 1985 Census of Agriculture (CA) was cancelled on budgetary grounds and the next censuses were undertaken in 1991 and 2000. This metadata review refers to the last CA, carried out in 2010.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the CA 2010 was provided by:

- the Statistics Act 1993 (No. 21 of 1993);
- the Statistics Order on the Census of Agriculture, 2010 (S.I. No. 181 of 2010); and
- EU legislation on farm structure surveys.

### **Institutional framework and international collaboration**

The Central Statistics Office (CSO) was the governmental agency responsible for the organization and implementation of the CA 2010, in cooperation with the Department of Agriculture, Food and the Marine (DAFM).

### **Census staff**

In the CA 2010, 12 members of the permanent agriculture staff and 23 temporary agriculture staff were involved. There were also nine other permanent non-agriculture staff who worked on scanning and printing in the lead-up to data collection.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 June 2010, for inventory items, such as livestock characteristics.

### **Reference periods:**

- agricultural marketing year 2009/2010 (from 1 November 2009 to 31 October 2010), for information on land use, agricultural production methods, other gainful activities, etc.;
- the 12 months preceding 1 June 2010, for labour force characteristics;
- a three-year period (between 1 January 2008 and 31 December 2010), for rural development measures.

## 4. ENUMERATION PERIOD

The data collection for the CA took place between June 2010 and September 2010, and for the SAPM, from September to October 2010.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** is the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes the following agricultural activities within the economic territory of the EU (either as its primary or secondary activity): (i) growing of non-perennial crops; (ii) growing of perennial crops; (iii) plant propagation; (iv) animal production; (v) mixed farming; or (vi) support activities to agriculture and post-harvest crop activities.

## 6. GEOGRAPHIC COVERAGE

The CA 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No threshold was used in the CA 2010.

## 8. METHODOLOGY

The classical approach was used in the CA. Some census data were collected directly from administrative registers.

### **Frame**

The Farm Register (FR) held by the CSO was used as a census frame. The FR contains all farms, including all identified specialized, farms and is updated from registers maintained by the DAFM.

### **Complete and/or sample enumeration method(s)**

The CA was based on a complete enumeration. The SAPM was a sample survey.

### **Sample design (if sampling was used)**

Sample units for the SAPM were selected using stratified random sampling.<sup>1</sup>

<sup>1</sup> A large sample of 40 000 farms for the SAPM was needed to address the EU's precision requirements. Sixteen strata were used. These comprised two NUTS2 regions crossed with five sizes of holding categories, and three separate strata (specialized pig units, specialized poultry units, and units greater than 100 ha).

**Data collection methods**

The CA was conducted entirely by post (mail-out/mail-back). Each census questionnaire issued included a pre-addressed freepost reply envelope. The CA 2010 was the first census to use a combination of administrative records and completed paper questionnaires. Information on cattle numbers and the area under cereals and certain crops were obtained from administrative records.<sup>2</sup>

**Questionnaire(s)**

An eight-page A4-sized questionnaire was issued to all holdings in the week prior to 1 June 2010, accompanied by an information booklet with detailed notes on each section of the questionnaire. A separate two-page A4-sized questionnaire was also issued to all specialist pig producers (“Pig questionnaire”). The SAPM was issued in late September 2010. This took the form of a four-page A4 questionnaire, also accompanied by an information leaflet.

The census covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Some census data were collected directly from administrative registers. OCR was used for data capture. Online data dissemination was applied to publish the census results.

**10. DATA PROCESSING AND ARCHIVING**

OCR scanning captured the respondent’s reply to every question on the form. Where the OCR software could not clearly identify a character, the questionnaire was ‘held’ for review by a member of staff. Once this verification process was completed, the data on the questionnaire were written to a flat file for importing into the CSO’s database. Data entry, verification and editing were carried out by the census processing staff in the CSO (temporary staff and more experienced supervisory staff). SAS Enterprise Guide was used to perform the sample selection for the SAPM, which was a stratified random sampling using the Neymann allocation.

**11. CENSUS DATA QUALITY**

Necessary steps were taken to ensure full coverage of the census population. Wherever possible, census data were also compared with other sources, including administrative registers.<sup>3</sup>

**12. DATA DISSEMINATION**

Preliminary results from the CA 2010 were published in February 2012. A special report on agricultural labour input was published in October 2012. A final detailed publication of the CA results was released in December 2012. The census results are available on the CSO website.<sup>4</sup>

**13. DATA SOURCES**

**Central Statistics Office.** 2012a. *Census of Agriculture – Final Results*. Dublin, Ireland. (also available at <https://www.cso.ie/en/media/csoie/releasespublications/documents/agriculture/2010/full2010.pdf>).

**Central Statistics Office.** 2012b. *Farm Structure Survey 2009/2010. Survey on Agricultural Production Methods (SAPM) 2009/2010*. National Methodological Report, Eurostat. (also available at [https://ec.europa.eu/eurostat/documents/749240/749313/IE\\_NMR\\_FSS\\_2010.pdf/8c218000-7700-4d1e-8ced-9fb253d210db](https://ec.europa.eu/eurostat/documents/749240/749313/IE_NMR_FSS_2010.pdf/8c218000-7700-4d1e-8ced-9fb253d210db)).

**Eurostat.** 2019a. *Archive: Agricultural census in Ireland*. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Ireland](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Ireland)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

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<sup>2</sup> Data on cereals and potatoes were obtained from the DAFM Single Payment Scheme (Council Regulation No. 1782/2003) while all data on cattle were obtained from the DAFM Animal Identification and Movement system (Council Regulation No. 1760/2000).

<sup>3</sup> However, such comparisons were made difficult by differences in definitions and/or reference periods and as such were of limited use. The extensive substitution of administrative data for statistics that had been collected in the past directly from respondents using questionnaires also placed limits on the use of administrative data for validation and verification of the census results. Active responses were scrutinized to check for the legibility of the data returned and obvious omissions or errors, scanned using an OCR scanner to capture the data on the questionnaire. A limited number of non-respondents were phoned. These consisted almost entirely of specialized pig holdings.

<sup>4</sup> <https://www.cso.ie/en/statistics/agriculture/censusofagriculture2010/>

# IRELAND – CENSUS OF AGRICULTURE 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>139 890</b>	<b>5 317 860</b>
Civil persons	139 560	4 873 190
An individual (sole holder holdings) <sup>2</sup>	139 560	4 873 190
Juridical persons (legal entities)	330	444 670

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>139 890</b>	<b>4 991 350</b>
Legal ownership and owner-like possession (owned land)	134 650	3 784 560
Rented from others (land rented)	41 440	784 380
Other form of tenure (shared farming or other modes)	30	422 410

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>139 890</b>	<b>4 991 350</b>
Holdings without UAA	130	
Holdings with UAA	139 760	4 991 350
Less than 2 ha	2 210	2 520
2–4.99 ha	7 380	26 620
5–9.99 ha	15 750	119 420
10–19.99 ha	33 580	500 780
20–29.99 ha	24 690	610 160
30–49.99 ha	30 670	1 192 450
50–99.99 ha	20 760	1 389 390
100 ha and over	4 720	1 150 010

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>139 890</b>	<b>5 317 860</b>
UAA	139 760	4 991 350
Arable land	65 890	1 011 700
Land temporarily fallow	750	4 610
Land under permanent crops	970	970
Permanent meadows and pastures	132 630	3 978 530
Kitchen garden	1 000	150
Other land	67 630	326 500
Wooded area	16 400	149 850
Unutilised agricultural land and other areas	64 240	176 650

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>139 890</b>	<b>4 991 350</b>
Male	123 770	4 591 340
Female	16 120	400 010

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>116 080</b>
Male	61 490
Female	54 590

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>272 040</b>
Male	197 950
Female	74 090
Family labour force	255 640
Male	183 700
Female	71 940
Regular non-family labour force	16 410
Male	14 250
Female	2 160

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>139 890</b>
Male	123 770
Female	16 120
Less than 35 years	9 450
Male	8 760
Female	690
35–44 years	25 150
Male	23 040
Female	2 110
45–54 years	34 920
Male	31 380
Female	3 540
55–64 years	35 000
Male	30 820
Female	4 180
65 years and over	35 370
Male	29 770
Female	5 600

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>127 140</b>	
Cattle	111 000	6 606 590
Sheep	32 110	4 745 420
Goats	1 200	10 520
Pigs/swine	1 210	1 516 290
Equines (Equidae)	17 340	106 020
Poultry (1 000 head)	n.a	n.a
Broilers	550	7 840
Laying hens	7 720	2 700
Others	3 310	390
Other	230	

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

## 1. HISTORICAL OUTLINE

The Agricultural Census (AC) is carried out every ten years in Italy. Six agricultural censuses have been conducted, in the years 1961, 1970, 1982, 1990, 2000 and the latest in 2010.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

Article 15 of Legislative Decree No. 322/89 identifies the National Statistical Office (Istat) as the agency in charge of census activities. General measures for the sixth AC are stated in Legislative Decrees No. 135 of 25 September 2009 and No.166 of 20 November 2009. The Decree of the President of the Republic No. 154 of 23 July 2010 establishes the rules governing its execution. The AC 2010 complies with the relevant EU legislation.<sup>1</sup>

### *Institutional framework and international collaboration*

The institution responsible for carrying out the censuses is Istat. For the AC 2010, the regions and the Autonomous Provinces of Bolzano and Trento had to decide the level of their involvement in the census, i.e. between a high- and an integrative-participation level model. Depending on the model chosen, the enumerators were selected by the region or by the municipality, or by an intermediate administrative level. A census committee was created with advisory functions. It was composed of members of Istat, regions, the Ministry of Agriculture, research institutes and representatives of municipalities and provinces.

### *Census staff*

The census personnel involved in census data collection included 13 236 enumerators and 461 coordinators, supervised by 93 responsible persons from Istat regional offices. The average charge was 155 holdings per enumerator.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 24 October 2010, for inventory items such as legal status and management system of the holding, total area and UAA of holding and livestock numbers.

### *Reference periods:*

- the agricultural marketing year (from 1 November 2009 to 31 October 2010), for the information on land use, agricultural and animal production methods, labour force and other gainful activities related to the farms;
- the 12 months preceding 24 October 2010, for items on the professional status of the holder, on his/her family and relatives, on the head of farm, and on the agricultural skills of the farm manager;
- the last three years (2008–2010), for items on landscape features and rural development support.

## 4. ENUMERATION PERIOD

The fieldwork started on 25 October 2010 and ended on 31 January 2011, with the exception of one region, where data collection lasted until 16 May 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production).

The **statistical unit** is the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes the agricultural activities listed in Annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, as either its primary or secondary activity.

Specific actions have been implemented to include all common lands with UAA<sup>2</sup> in the AC 2010.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were applied for the agricultural holdings in the AC 2010: (i) regional thresholds for the UAA (from 0.2 to 0.4 ha, depending on region); and (ii) animals or their products, wholly or partially intended for marketing.

No thresholds were applied for holdings growing vegetables, flowers and ornamental plants, nor for those with vineyards and fruit trees (because of their significant economic value).

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the AC.

<sup>1</sup> (i) Regulation (EC) No. 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No. 571/88 and (ii) Commission Regulation (EC) No. 1200/2009 of 30 November 2009 implementing Regulation (EC) No. 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards livestock unit coefficients and definitions of the characteristics.

<sup>2</sup> Area where the agricultural activity takes place, specifically grazing.

**Frame**

The pre-census list of agricultural holdings was established based on the integration of administrative and statistical sources that contain information concerning the target population.<sup>3</sup>

**Complete and/or sample enumeration methods**

The AC was conducted using complete enumeration.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

Data collection has been carried out through two alternative techniques: (i) traditional, face-to-face interviewing (PAPI) method; or (ii) the new, self-interviewing (CAWI) method.

**Questionnaire(s)**

There was one comprehensive census questionnaire, available either in print form or as an Internet-based electronic version that could be completed online. It was available in four languages (Italian, German, English and Slovenian). The questionnaire was used to collect both farm structure characteristics as well as items related to agricultural production methods.

The questionnaire included all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

CAWI was used for data collection. CATI was applied for the re-interview PES. The census results were released online.

**10. DATA PROCESSING AND ARCHIVING**

Manual data entry was used (for paper questionnaires) along with direct data capture (when CAWI was used). Non-sampling errors were identified and treated by an Editing and Imputation System. For detecting outlier values, a special procedure based on the robust technique of Forward Search was implemented, in partnership with the University of Parma and centrally applied by ISTAT. The imputation process used was a combination of the following methodologies: (i) deductive imputation, if the values to impute are uniquely determined by the values assumed by other variables; (ii) rule-based imputation (based on deterministic “if then” rules); (iii) nearest neighbour imputation; (iv) model-based imputation (preferred for the imputation of continuous variables); and (v) interactive imputation.

Administrative sources were used for the preparation of the pre-census list, for data control and correction.

**11. CENSUS DATA QUALITY**

To evaluate the quality of the AC 2010, Istat implemented two PESs (“post-census surveys”): a Coverage Survey (CS) and a Re-Interview Survey (RIS). The CS was designed to obtain reliable estimates of under- or overcount, using another independent list of units existing in a sample of cadastral maps. The RS was carried out through a re-interview of a sample of agricultural holdings already interviewed in the AC to estimate response error due to respondents and/or enumerators. The survey was carried out from May 2011 to January 2012 on a sample of approximately 50 000 holdings, selected with one-stage stratified sample from the census frame. The survey was conducted using CATI.

**12. DATA DISSEMINATION AND USE**

Preliminary results were disseminated in July 2011 through a press release and 23 tables were made available to users on the Istat website. The final results were released in July 2012. The main dissemination method was the Internet.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in Italy. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Italy](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Italy)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Istituto Nazionale di Statistica (Istat).** 2012. *Farm Structure Survey 2009/2010. Survey on agricultural production methods 2009/2010.* National Methodological Report, Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/IT\\_NMR\\_FSS\\_2010\\_vers2.pdf/9f98a6b9-2b70-4b1e-b5d6-4d5744595f00](http://ec.europa.eu/eurostat/documents/749240/749313/IT_NMR_FSS_2010_vers2.pdf/9f98a6b9-2b70-4b1e-b5d6-4d5744595f00)).

**14. CONTACT**

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Website: <http://www.istat.it/en/>

<sup>3</sup> The specific administrative sources used to build the list were: the IACS, the System for the Identification and Registration of Bovine Animals and other species, the Lands' Property Incomes, and the Land Registry. The general sources were: the Chambers of Commerce, the VAT and Tax Revenue declarations. Statistical sources were the CA 2000 and the Register of Businesses.

# ITALY- AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>1 620 880</b>	<b>17 080 850</b>
Civil persons	1 603 710	13 990 560
An individual (sole holder holdings) <sup>2</sup>	1 603 710	13 990 560
Juridical persons (legal entities)	17 180	3 090 290

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>1 620 880</b>	<b>12 856 050</b>
Legal ownership and owner-like possession (owned land)	1 525 870	8 340 390
Rented from others (land rented)	260 290	3 797 840
Other form of tenure (shared farming or other modes)	7 730	717 820

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>1 620 880</b>	<b>12 856 050</b>
Holdings without UAA	5 290	
Holdings with UAA	1 615 590	12 856 050
Less than 2 ha	819 360	726 990
2–4.99 ha	357 670	1 119 850
5–9.99 ha	186 150	1 295 300
10–19.99 ha	120 120	1 663 480
20–29.99 ha	46 690	1 128 980
30–49.99 ha	40 920	1 556 920
50–99.99 ha	29 210	1 994 070
100 ha and over	15 490	3 370 460

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>1 620 880</b>	<b>17 080 850</b>
UAA	1 615 590	12 856 050
Arable land	828 390	7 009 310
Land temporarily fallow	172 820	547 720
Land under permanent crops	1 192 080	2 380 770
Permanent meadows and pastures	274 490	3 434 070
Kitchen garden	387 240	31 900
Other land	1 140 250	4 224 800
Wooded area	344 740	3 002 670
Unutilised agricultural land and other areas	1 073 400	1 222 140

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>1 620 880</b>	<b>12 856 050</b>
Male	1 123 040	10 203 600
Female	497 850	2 652 450

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>1 625 860</b>
Male	753 880

	Number

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>1 620 880</b>
Male	1 123 040
Female	497 850
Less than 35 years	82 110
Male	61 410
Female	20 710
35–44 years	203 480
Male	140 880
Female	62 600
45–54 years	338 050
Male	228 280
Female	109 770
55–64 years	393 860
Male	267 990
Female	125 870
65 years and over	603 390
Male	424 490
Female	178 900

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>217 330</b>	
Cattle	125 880	5 952 990
Sheep	51 100	6 782 180
Goats	22 760	861 940
Pigs/swine	26 200	9 331 310
Equines (Equidae)	45 360	219 160
Poultry (1 000 head)	n.a.	n.a.
Broilers	13 210	94 950
Laying hens	18 750	44 100
others	6 320	28 470
Other animals	n.a.	
Rabbits (breeding females)	7 470	876 960
Other	7 190	
Insects		
Bees (hives)	6 400	661 240

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>544 980</b>	<b>3 734 850</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>398 490</b>	<b>2 408 350</b>
Surface	143 980	n.a.
Sprinkler	167 500	n.a.
Localized irrigation (drop irrigation)	113 800	n.a.

<sup>1</sup> Data source – Eurostat database, available at:

<https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units.n.a.

## 1. HISTORICAL OUTLINE

During the first Republic, in Latvia, six agricultural censuses were carried out, in: 1920, 1923, 1929, 1935, 1937 and 1939<sup>1</sup>. The first Agricultural Census (AC) of Latvia carried out in compliance with the requirements of EU legislation took place in 2001, followed by FSSs conducted (on sample basis) in 2003, 2005 and 2007. The metadata presented here refers to the AC carried out in 2010, together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The Order of the Cabinet of Ministers No. 843 “On the Agricultural Census 2010” of 11 December 2009 delegated the organization of the AC 2010 in Latvia to the Central Statistical Bureau (CSB).

### *Institutional framework and international collaboration*

The CSB of Latvia is the main institution responsible for the organization of the AC 2010. On the basis of Order 843, an interinstitutional agreement on conducting the AC 2010 and technical provisions of the census were concluded. The Order established the reallocation of state funding from the Ministry of Economics to the Ministry of Agriculture (MA). On behalf of the MA, also the Latvian Rural Advisory and Training Centre (LRATC) took part in the organization of the AC 2010.

### *Census staff*

The data collection engaged 236 interviewers, supervised by 28 managers at regional level.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 July 2010, for inventory items, such as livestock, buildings, agriculture machinery.

### *Reference periods:*

- crop year 2010, for land and crops data, tillage of UAA and soil conservation;
- from 1 July 2009 to 30 June 2010, for labour force, livestock pasturage period, animal housing facilities, and manure storage facilities;
- the last three years (2008–2010), for items on irrigated area and rural development support.

## 4. ENUMERATION PERIOD

The enumeration period was from 16 April to 30 October 2010 and was undertaken in several stages.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production).

The **statistical unit** was the agricultural holding, defined as a technically and economically independent unit having common management, producing agricultural products or keeping land in good agricultural and environmental conditions.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were used for the SAPM: (i) UAA – 1 ha and above; (ii) Standard Output (SO) – more than EUR 70.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the AC. Some census data were collected directly from administrative registers.

### *Frame*

Farms included in the AC were selected from the Statistical Farm Register (SFR) of the CBS, considering their economic activity (characterised by the SO) and specialization.

### *Complete or/and sample enumeration methods*

The AC 2010 was conducted using complete enumeration. The SAPM was a sample survey.

### *Sample design (if sampling was used)*

The sample for the SAPM was a simple stratified random sample. The holdings were stratified by region (five strata), type of farming (three), economic size classes (13), based on the SO.<sup>2</sup>

<sup>1</sup> The data were not fully compiled because work was interrupted by war. During the post-war years, when Latvia was part of the Soviet Union, separate censuses on the sown areas of agricultural crops, of livestock and of permanent crops were organized.

<sup>2</sup> The total sample size was 20 005 agricultural holdings. Neymann allocation was used to calculate the optimal sample size for each stratum, based on the economic size of holdings for active holdings and the agricultural land area of holding for non-active and new holdings.



**Data collection method(s)**

Four data collection methods were used: face-to-face interviews (CAPI), telephone interviews (CATI), a postal survey (mail-out/mail-back), and a web survey (CAWI)<sup>3</sup>. Administrative data sources were used to partly replace the field data collection.

**Questionnaire(s)**

There were two questionnaires, one for the AC 2010 and the other one for the SAPM. The census covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

The CAPI, CATI and CAWI methods were used for census data collection. Some census data were collected directly from administrative registers. The census results were released online.

**10. DATA PROCESSING AND ARCHIVING**

The CAPI and CATI were based on software developed by the CSB and data were stored in a Microsoft SQL database. For the web questionnaires, the CSB common Computer-Assisted Statistical Information System (CASIS) CAWI version was used. This system was designed to harmonize data collection, processing and storage in the CSB. Approximately 280 controls were incorporated into the CAPI data entry application, and 230 controls into CATI. The CAWI application included only the most significant mathematical and logical validations, facilitating information provision for the respondents.

**11. CENSUS DATA QUALITY**

When data were sent to the CSB server, mathematical and logical control at holding level was undertaken. If necessary, the interviewer or respondent was contacted. Missing information was imputed using data from administrative data sources.

**12. DATA DISSEMINATION**

The information on progress, as well as on provisional and final results of the AC 2010 was published on the CSB website in several phases:

- the first provisional results (general information) were disseminated through a press release in December 2010 and the second provisional results were disseminated through a press release in May 2011;
- final results were disseminated through a press release in December 2011;
- the AC 2010 database was made available for public use through the CSB website at the end of December 2011;<sup>4</sup> and
- the AC 2010 final results was published in the first quarter of 2012.

**13. DATA SOURCES**

**Central Statistical Bureau (CSB).** 2012. *Farm Structure Survey 2009/2010, Survey on agricultural production methods 2009/2010*. National Methodological Report. Latvia, Eurostat. (also available at

[http://ec.europa.eu/eurostat/documents/749240/749313/LV\\_NMR\\_FSS\\_2010.pdf/1633bffb-d1fd-43ea-8d41-b79d5a5fe554](http://ec.europa.eu/eurostat/documents/749240/749313/LV_NMR_FSS_2010.pdf/1633bffb-d1fd-43ea-8d41-b79d5a5fe554)).

**Eurostat.** 2019a. Archive: Agricultural census in Latvia. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Latvia](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Latvia)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

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<sup>3</sup> The Internet-based web survey was conducted for the first time. Holdings with known e-mail addresses and that, in 2010, used the Rural Support Service electronic area payment application system, could fill in the AC and SAPM questionnaires on the Internet. The total number of completed web questionnaires was 616, or 0.7 percent of the total number of respondents. The AC 2010 used a new data collecting system: CASIS.

<sup>4</sup> [https://data1.csb.gov.lv/pxweb/en/lauks/lauks\\_skait\\_apsek/?rxid=49267a88-6ef2-4fc7-8ee7-cf9a687cf06](https://data1.csb.gov.lv/pxweb/en/lauks/lauks_skait_apsek/?rxid=49267a88-6ef2-4fc7-8ee7-cf9a687cf06)

# LATVIA – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>83 390</b>	<b>2 879 170</b>
Civil persons	83 270	2 842 090
An individual (sole holder holdings) <sup>2</sup>	81 820	2 498 230
Two or more individuals (group holdings)	1 450	343 860
Juridical persons (legal entities)	120	37 080

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>83 390</b>	<b>1 796 290</b>
Legal ownership and owner-like possession (owned land)	79 410	1 231 370
Rented from others (land rented)	14 400	564 920

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>83 390</b>	<b>1 796 290</b>
Holdings without UAA	320	
Holdings with UAA	83 070	1 796 290
Less than 2 ha	9 590	9 410
2–4.99 ha	18 390	63 030
5–9.99 ha	22 660	161 620
10–19.99 ha	17 490	242 980
20–29.99 ha	5 670	137 190
30–49.99 ha	3 950	150 570
50–99.99 ha	2 740	187 680
100 ha and over	2 570	843 790

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>83 390</b>	<b>2 879 170</b>
UAA	83 070	1 796 290
Arable land	56 400	1 119 960
Land temporarily fallow	7 200	74 450
Land under permanent crops	6 370	8 510
Permanent meadows and pastures	66 120	651 050
Kitchen garden	51 740	16 760
Other land	78 270	1 082 890
Wooded area	54 540	714 160
Unutilised agricultural land and other areas	73 730	368 730

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>83 390</b>	<b>1 796 290</b>
Male	44 380	1 257 600
Female	39 010	538 680

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>80 660</b>
Male	37 420
Female	43 240

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>180 990</b>
Male	91 750
Female	89 250
Family labour force	163 560
Male	81 500
Female	82 050
Regular non-family labour force	17 440
Male	10 250
Female	7 190

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>83 390</b>
Male	44 380
Female	39 010
Less than 35 years	4 540
Male	2 830
Female	1 710
35–44 years	14 260
Male	8 710
Female	5 550
45–54 years	22 470
Male	13 080
Female	9 380
55–64 years	17 320
Male	9 030
Female	8 290
65 years and over	24 810
Male	10 730
Female	14 080

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>48 700</b>	
Cattle	35 100	394 340
Sheep	3 800	84 280
Goats	2 050	12 460
Pigs/swine	18 170	383 350
Equines (Equidae)	5 500	10 370
Poultry (1 000 head)	n.a.	n.a.
Broilers	480	1 650
Laying hens	27 820	3 460
Others	4 820	50
Other animals	n.a.	
Rabbits (breeding females)	520	28 820
Other	110	
Insects		
Bees (hives)	1 380	25 890

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>290</b>	<b>1 140</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>230</b>	<b>710</b>
Sprinkler	240	n.a.
Localized irrigation (drop irrigation)	120	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The first general agricultural census (AC) in Lithuania was conducted in 1930. The second AC in independent Lithuania was conducted in 2003. The third AC, to which the metadata review and data presented here relate, was carried out in 2010, after Lithuania's accession to the EU. The AC 2010 was carried out together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the AC 2010 was provided by:

- the Law on Statistics of the Republic of Lithuania (Official Gazette, 1999, No. VIII-1511);
- the Resolution of the Government of the Republic of Lithuania No. 516 of 27 May 2009 on the Agricultural Census 2010 of the Republic of Lithuania (Official Gazette, 2009, No. 67-2700);
- Orders of the Director General of Statistics Lithuania; and
- the EU legislation relevant for implementing the FSS (2010).

### **Institutional framework and international collaboration**

Statistics Lithuania is the government agency with the legal authority and responsibility for statistical surveys, including the methodological, technical and organizational preparation of the agricultural census.

### **Census staff**

More than 1 300 census staff were engaged in the AC 2010: 479 specialists worked in municipalities (ward offices) and about 850 interviewers investigated agricultural holdings and small farms.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 June 2010, for livestock, buildings, machinery and other inventory items.

### **Reference periods:**

- the 12 preceding months (from 1 June 2009 to 31 May 2010), for labour, agricultural production methods, irrigation, etc.;
- the year 2010, for land use and crops; and
- the last three years (2008–2010), for rural development support.

## 4. ENUMERATION PERIOD

Data collection was conducted from May to August 2010 (for more details see section 8 below, "Data collection methods").

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in Annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, as either its primary or secondary activity.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

In line with EU Regulation (EC) No. 1166/2008, the minimum threshold of at least 1 ha of utilized agricultural land was applied. For agricultural holdings that operate less than 1 ha of utilized agricultural land, a threshold for the income obtained from agricultural production sales was considered; such income should be not less than LTL 5 000 per year or approximately EUR 1 448. Small farms with less than 1 ha of utilized agricultural land and income less than LTL 5 000 per year (under the threshold) were also surveyed (only for national purposes).

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2010. Some census data were collected directly from administrative registers.

### **Frame**

Prior to the AC 2010, lists of respondents by municipality were prepared using the following statistical and administrative sources: the Integrated Administration and Control System Register, the Livestock Register, and the AC 2003 database updated with data from other statistical surveys. The quality of the list was checked and some corrections were made by a specialist in municipalities.

### **Complete and/or sample enumeration methods**

The AC and the SAPM 2010 were conducted using complete enumeration.

**Sample design**

Not applicable.

**Data collection method(s)**

Data collection started with an e-Census in May–June 2010 (CAWI method). Farmers who came to a ward office to declare crops through the IACS were surveyed by a census specialist (CAPI method). Farmers that did not respond during the e-Census, and did not declare crops, were interviewed from 19 July until 31 August 2010, using paper questionnaires (PAPI method). Small farms were interviewed from 1 June 2010 until 16 July 2010, using paper questionnaires (PAPI method). Agricultural enterprises had to fill in the electronic questionnaire themselves and send it directly to Statistics Lithuania using the electronic statistical reporting portal. Administrative data were also used in the AC, as a source of census data and for validation purposes.

**Questionnaire(s)**

Two questionnaires were used in the AC 2010: (i) the main questionnaire, for enterprises and family farms that met the EU minimum thresholds for agricultural activity, with two annexes (the annex had to be filled in if the land and/or the livestock of the holding were in different municipalities and the annex on farm buildings and machinery); and (ii) the Small Units Questionnaire, for very small farms that were below the minimum thresholds.

The AC 2010 covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

In the AC 2010, Lithuania used CAWI and CAPI methods for census data capture. In addition, some census data were collected directly from administrative registers. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

The statistical data collected in the municipalities (ward offices) were submitted to Statistics Lithuania for data processing. ABBYY Form Filler 2.5 software was used for entering statistical data into laptop computers and to fill in the web questionnaire. A special programme created using Oracle software was used for statistical data processing at Statistics Lithuania. SAS was used to link statistical data from several sources according to the selected criterion and for the calculation of derived statistical indicators. The results were transferred into Microsoft Excel worksheet tables. Data on organic farming, taken from the Organic Farming Register, were loaded directly onto the database.

**11. CENSUS DATA QUALITY**

There were 317 different logical and arithmetic controls for the main questionnaire and 26 for the small unit questionnaire. The final data check was performed using administrative sources and agricultural statistics surveys (crop production, livestock survey, etc.).

**12. DATA DISSEMINATION**

A press release with the first census results was published in December 2010. Another press release, on the main preliminary results of the AC 2010 and Excel files with preliminary results, were published in February 2011. The provisional results of the AC 2010 were delivered to Eurostat.

Three publications on final census results were published. The first publication (with results at country level) was published in July 2012; the second publication (by county and municipality) was released in September 2012 and the third publication (by ward) in December 2012.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in Lithuania. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Lithuania](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Lithuania)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Statistics Lithuania.** 2012. *Farm Structure Survey 2009/2010 and Survey on agricultural production methods 2009/2010*. National Methodological Report. Lithuania, Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/LT\\_NMR\\_FSS\\_2010.pdf](http://ec.europa.eu/eurostat/documents/749240/749313/LT_NMR_FSS_2010.pdf)).

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LITHUANIA – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>199 910</b>	<b>3 003 620</b>
Civil persons	199 270	2 622 610
An individual (sole holder holdings) <sup>2</sup>	199 240	2 620 940
Two or more individuals (group holdings)	30	1 670
Juridical persons (legal entities)	650	381 010

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>199 910</b>	<b>2 742 560</b>
Legal ownership and owner-like possession (owned land)	187 570	1 406 610
Rented from others (land rented)	61 110	1 273 390
Other form of tenure (shared farming or other modes)	4 510	62 560

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>199 910</b>	<b>2 742 560</b>
Holdings without UAA	260	
Holdings with UAA	199 650	2 742 560
Less than 2 ha	32 310	46 590
2–4.99 ha	84 830	266 010
5–9.99 ha	39 900	276 810
10–19.99 ha	21 470	296 010
20–29.99 ha	6 640	160 600
30–49.99 ha	5 870	228 090
50–99.99 ha	4 830	328 410
100 ha and over	3 800	1 140 040

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>199 910</b>	<b>3 003 620</b>
UAA	199 650	2 742 560
Arable land	183 800	2 115 130
Land temporarily fallow	31 980	118 780
Land under permanent crops	92 720	21 550
Permanent meadows and pastures	127 440	605 870
Other land	168 670	261 070
Wooded area	34 370	151 250
Unutilised agricultural land and other areas	165 160	109 810

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>199 910</b>	<b>2 742 560</b>
Male	104 550	1 985 090
Female	95 360	757 470

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>141 500</b>
Male	62 990
Female	78 510

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>366 090</b>
Male	181 670
Female	184 420
Family labour force	338 170
Male	164 690
Female	173 490
Regular non-family labour force	27 920
Male	16 990
Female	10 930

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>199 910</b>
Male	104 550
Female	95 360
Less than 35 years	11 710
Male	7 540
Female	4 170
35–44 years	32 150
Male	18 800
Female	13 350
45–54 years	48 930
Male	28 840
Female	20 090
55–64 years	37 680
Male	20 220
Female	17 470
65 years and over	69 440
Male	29 160
Female	40 280

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>129 630</b>	
Cattle	93 050	739 090
Sheep	4 320	64 530
Goats	6 110	16 760
Pigs/swine	62 710	860 280
Equines (Equidae)	19 110	28 750
Poultry (1 000 head)	n.a.	n.a.
Broilers	13 190	5 140
Laying hens	79 960	3 080
Others	10 760	380
Other animals		
Rabbits (breeding females)	8 600	32 010
Other	1 240	
Insects		
Bees (hives)	8 490	92 470

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>200</b>	<b>2 520</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>120</b>	<b>1 530</b>
Surface	60	n.a.
Sprinkler	40	n.a.
Localized irrigation (drop irrigation)	60	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

Luxembourg has participated in the WCA programme since the 1950 round. An agricultural census covering crops and livestock is undertaken annually, following almost the same criteria and definitions since 1953. Until 2010, the censuses were organized using an indirect data collection approach (that is, via municipalities). The Agricultural Census (AC) 2010, to which the metadata review and census data reported here relate, was conducted based on direct data collection.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the AC 2010 was provided by:

- the modified Law of 9 July 1962 organizing the National Institute of Statistics and Economic Studies (STATEC), which allows STATEC to carry out and/or coordinate public interest surveys for exclusively statistical purposes; and
- EU regulations related to the FSS.

### **Institutional framework and international collaboration**

The institutions involved in census organization were:

- STATEC, as a census coordinator, to ensure completion of data collection and that was in charge of the survey. STATEC was responsible for collecting the data related to machinery, labour force, other gainful activities and agricultural production methods; and
- the Rural Economy Service (*Service d'économie rurale*, SER), a department of the Ministry Agriculture (MoA), as the data provider for administrative data and the national producer of economic accounts of agriculture. The SER was responsible for the collection of data on land area, livestock, organic farming and rural development.<sup>1</sup>

### **Census staff**

No additional census staff were involved in the AC 2010 (for more details see section 8).

## 3. REFERENCE DATE AND PERIOD

### **Reference days:**

- 1 April 2010, for land area, livestock and rural development; and
- 15 May 2010, for other characteristics.

### **Reference periods:**

- the 12-months period ending on 15 May 2010, for labour force characteristics;
- the last three years (2007, 2008 and 2009), for rural development characteristics.

## 4. ENUMERATION PERIOD

At the beginning of April 2010, the agricultural holders received the STATEC questionnaire (reference date 15 May 2010) together with the SER application forms for subsidies (reference date 1 April 2010). The questionnaires were returned to the SER in May and June 2010 and then transferred as a single package to STATEC at the end of June 2010.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production).

The **statistical unit** was the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in Annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, as either its primary or secondary activity. The thresholds established for statistical units in the AC are presented in section 7.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The agricultural holdings that met at least one of the following criteria had to participate in the AC:

- at least 3 ha of UAA;
- at least 0.25 ha of fresh vegetables, melons and strawberries, flowers and ornamental plants, or at least 0.30 ha of fruit and berry plantations or at least 0.50 ha of nurseries;
- at least 0.10 ha of vineyards;
- at least ten horses/donkeys, ten bovines, 20 sheep, 20 goats, 50 pigs, 1 000 laying hens, 1 000 other poultry or 1 000 rabbits.

With these thresholds, the AC covered 99.95 percent of the total UAA and 99.89 percent of the total livestock units.

<sup>1</sup> Land area and livestock data come from the application forms for subsidies, which were sent to all agricultural holdings. Data on organic farming are sources from the Organic Farming Register and data on rural development are provided by the MoA. These data sets were merged and made available to STATEC as an administrative source to minimize the statistical burden on agricultural holdings.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC. Administrative registers were used as a source of census data to cover most AC variables.

### **Frame**

The frame was established based on the Register of Agricultural Holdings of the MoA, managed by the SER.

### **Complete and/or sample enumeration methods**

The AC 2010 was conducted based on the complete enumeration of agricultural holdings that met national definition of statistical unit.

### **Sample design (if sampling was used)**

Not applicable.

### **Data collection method(s)**

Most of the AC data came directly from administrative sources gathered by the SER and provided to the STATEC.<sup>2</sup> Data not available in administrative sources were obtained using census questionnaires collected directly from the holders, by post.

### **Questionnaire(s)**

There was a single detailed census questionnaire for all holdings, irrespective of their size, consolidating the questions from both the AC and the SAPM. The survey questionnaires were sent directly to agricultural holdings via the SER, together with the subsidy application forms, and then returned by post to STATEC via the SER.

The questionnaire covered all 16 core items recommended in the WCA 2010.

## 9. USE OF TECHNOLOGY

Administrative data to replace (partially) the field data collection and online dissemination of census results were used in the AC 2010.

## 10. DATA PROCESSING AND ARCHIVING

Data entry of the survey questionnaires was done by the STATEC staff from July 2010 onwards, using the BLAISE software tool for managing survey forms. Data entry involved manual inputting of data. In autumn 2010, the administrative sources obtained through the SER were combined with the survey data using an official common identifier form a combined micro data set. Microdata validation was performed at STATEC to check the accuracy and plausibility of both the survey and the administrative data.<sup>3</sup>

Item nonresponse was addressed using cold-deck imputation, hot deck imputation and, to a lesser extent, ratio imputation as well as deductive imputation.

## 11. CENSUS DATA QUALITY

The unit nonresponse rate was 2.7 percent. The administrative data of the SER were tested for multiple listing and misclassification errors.

## 12. DATA DISSEMINATION

The AC 2010 publications, data and tables are all available online on the Luxembourg statistics portal.

## 13. DATA SOURCES

**Eurostat.** 2019a. Archive: Agricultural census in Luxembourg. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Luxembourg](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Luxembourg)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Statistics Portal Grand Duchy of Luxembourg.** 2012. *Farm Structure Survey 2010 Survey on agricultural production methods 2010. National Methodology Report.* (also available at <https://statistiques.public.lu/en/methodology/methodes/enterprises/Agriculture/agriculture/index.html>).

## 14. CONTACT

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Agricultural Portal Grand Duchy of Luxembourg – <https://agriculture.public.lu/de.html>

<sup>2</sup> The administrative data sources used were the following: the IACS; the Bovine register (SANITEL); the Database of the Ministry of Agriculture on the payments made to farmers and other beneficiaries eligible for FEAGA or FEADER (MAFEA); and organic farming registers.

<sup>3</sup> Analysis was also performed at national aggregate level with data from the prior year. The SER assisted data validation by providing feedback on the aggregated data at national level to produce economic accounts of agriculture.

# LUXEMBOURG – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>2 200</b>	<b>137 910</b>
Civil persons	2 150	137 130
An individual (sole holder holdings) <sup>2</sup>	2 060	121 550
Two or more individuals (group holdings)	90	15 580
Juridical persons (legal entities)	50	790

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>2 200</b>	<b>131 110</b>
Legal ownership and owner-like possession (owned land)	2 090	53 480
Rented from others (land rented)	2 070	76 720
Other form of tenure (shared farming or other modes)	750	910

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>2 200</b>	<b>131 110</b>
Holdings without UAA	20	
Holdings with UAA	2 180	131 110
Less than 2 ha	200	120
2–4.99 ha	160	570
5–9.99 ha	220	1 560
10–19.99 ha	170	2 450
20–29.99 ha	120	2 990
30–49.99 ha	240	9 850
50–99.99 ha	640	47 540
100 ha and over	440	66 030

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>2 200</b>	<b>137 910</b>
UAA	2 180	131 110
Arable land	1 570	62 000
Land temporarily fallow	150	140
Land under permanent crops	460	1 500
Permanent meadows and pastures	1 770	67 590
Kitchen garden	190	10
Other land	1 270	6 810
Wooded area	1 100	6 030
Unutilised agricultural land and other areas	700	780

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>2 200</b>	<b>131 110</b>
Male	1 850	116 080
Female	350	15 030

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>1 980</b>
Male	1 030
Female	950

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>4 980</b>
Male	3 380
Female	1 600
Family labour force	4 090
Male	2 700
Female	1 390
Regular non-family labour force	880
Male	680
Female	210

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>2 200</b>
Male	1 850
Female	350
Less than 35 years	160
Male	140
Female	20
35–44 years	430
Male	380
Female	60
45–54 years	710
Male	610
Female	110
55–64 years	600
Male	480
Female	120
65 years and over	300
Male	250
Female	50

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>1 720</b>	
Cattle	1 460	198 830
Sheep	220	9 080
Goats	100	5 080
Pigs/swine	140	83 770
Equines (Equidae)	530	4 600
Poultry (1 000 head)	n.a.	n.a.
Broilers	50	20
Laying hens	410	70
Others	90	n.a.
Other animals		
Rabbits (breeding females)	130	670
Other	1 240	
Insects		
Bees (hives)	30	540

<sup>1</sup> Data source – Eurostat database, available at:

<https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.



## 1. HISTORICAL OUTLINE

Between 1949 and 1954, censuses of agriculture (CAs) were carried out in Malta every year. The next CAs were carried out in 1956, 1960, 1968/1969, 1979, 1982/1983 and 2001, followed by sample-based FSS in 2003, 2005 and 2007. The CA 2010 was carried out in conjunction with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the collection of agricultural statistical data are stated in the Malta Statistics Authority Act No. XXIV, enacted in the year 2000. This places full responsibility on the National Statistics Office to carry out any statistical survey and to produce official statistics.

From the date of accession to the European Union, Malta has followed EU legislation and has carried out an FSS on a regular base.

### **Institutional framework and international collaboration**

The National Statistics Office, Agricultural and Fisheries Statistics Section (AFSS) is responsible for all domains of agricultural statistics. The AFSS coordinated all the activities related to the implementation of the AC up to the dissemination of the results. No special committee was set up for carrying out the CA 2010.

### **Census staff**

Approximately 138 census staff, including 130 enumerators (“interviewers”) and eight supervisors were involved in the AC 2010.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 August 2010, providing a point-in-time stocktaking for UAA, livestock and machinery.

### **Reference periods:**

- the crop year (from 1 September 2009 to 31 August 2010), for arable land, permanent crops, organic land and vines, mushrooms, animal housing and labour force; and
- the last three years, for landscape features and rural development support.

## 4. ENUMERATION PERIOD

Data collection was conducted from September 2010 to the end of January 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production).

The **statistical unit** was the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in Annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the European Union, as either its primary or secondary activity.

## 6. GEOGRAPHIC COVERAGE

The CA covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No thresholds were used in the CA 2010.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CA.

### **Frame**

The census frame was provided by the Agricultural Register (AR). The AR contains the details of all agricultural holdings and is maintained by the NSO. The AR is updated regularly and new units may be traced from: (i) the Animal Register maintained by the Directorate of Wholesale Markets and Fishing Fleet Facilities; (ii) the Farmer’s Register maintained by the Department of Agriculture; (iii) other administrative sources such as the IACS (Integrated Administration and Control System); and (iv) surveys carried out by the AFSS.

### **Complete and/or sample enumeration methods**

The CA 2010 was conducted using complete enumeration.

### **Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

The CA data were collected using face-to-face interviewing and paper questionnaires (PAPI method).

**Questionnaire(s)**

There was a single detailed questionnaire used for data collection. The CA 2010 covered 14 of the 16 core items recommended in the WCA 2010.<sup>1</sup>

**9. USE OF TECHNOLOGY**

Online dissemination of census results was used to publish the census results.

**10. DATA PROCESSING AND ARCHIVING**

A locally built application system was used for data entry. The computer application was designed in such a way that when an edit failure was encountered, a dialogue box displaying the error message popped up. The validation rules set up in the Eurostat manual were applied to identify and resolve anomalies. These involved logic and consistency checks with previous data, checks for extreme values, etc.

**11. CENSUS DATA QUALITY**

To minimize data collection errors interviewers were instructed to interview not more than five holdings, before providing the completed questionnaires to their supervisors for assessment. This helped to reduce data collection errors.

**12. DATA DISSEMINATION**

The final results of the CA were published in January 2012. The CA publication and other census results are available on the National Statistics Office website.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive:Agricultural census in Malta. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Malta](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Malta)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**National Statistics Office.** 2012a. *Census of Agriculture 2010*. Lascaris, Valletta VLT 2000, Malta. (also available at [https://nso.gov.mt/en/publicatons/Publications\\_by\\_Unit/Documents/B3\\_Environment\\_Energy\\_Transport\\_Agriculture\\_Statistics/Census\\_of\\_Agriculture\\_2010.pdf](https://nso.gov.mt/en/publicatons/Publications_by_Unit/Documents/B3_Environment_Energy_Transport_Agriculture_Statistics/Census_of_Agriculture_2010.pdf)).

**National Statistics Office.** 2012b. *Farm Structure Survey 2009/2010, Survey on agricultural production methods 2009/2010*. National Methodological Report. Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/MT\\_NMR\\_FSS\\_2010.pdf/e2e189ef-7132-4110-bf03-3a01295a1db8](http://ec.europa.eu/eurostat/documents/749240/749313/MT_NMR_FSS_2010.pdf/e2e189ef-7132-4110-bf03-3a01295a1db8)).

**14. CONTACT**

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<sup>1</sup> The core items that were not included in the census questionnaire are: (i) "Presence of aquaculture on the holding"; and (ii) "Presence of forest and other wood land on the holding". These items are not relevant for agricultural holdings in Malta.

# MALTA – CENSUS OF AGRICULTURE 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>12 530</b>	<b>12 940</b>
Civil persons	12 500	12 760
An individual (sole holder holdings) <sup>2</sup>	12 280	12 180
Two or more individuals (group holdings)	220	580
Juridical persons (legal entities)	40	180

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>12 530</b>	<b>11 450</b>
Legal ownership and owner-like possession (owned land)	5 590	2 720
Rented from others (land rented)	9 600	8 730

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>12 530</b>	<b>11 450</b>
Holdings without UAA	340	
Holdings with UAA	12 190	11 450
Less than 2 ha	10 790	5 970
2 - 4.99 ha	1 120	3 290
5 - 9.99 ha	230	1 540
10 - 19.99 ha	40	460
20 - 29.99 ha	10	160

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>12 530</b>	<b>12 940</b>
UAA	12 190	11 450
Arable land	9 500	9 080
Land temporarily fallow	2 830	1 010
Land under permanent crops	2 750	1 250
Kitchen garden	8 070	1 120
Unutilised agricultural land and other areas	7 710	1 490

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>12 530</b>	<b>11 450</b>
Male	11 140	10 630
Female	1 390	820

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>		
	Number	
<b>Total engaged in agricultural activities on the holding</b>	<b>5 520</b>	
Male	3 160	
Female	2 360	

LABOUR FORCE OF THE HOLDING		
	Number	
<b>Total</b>	<b>18 500</b>	
Male	14 560	
Female	3 940	
Family labour force	17 630	
Male	13 810	
Female	3 820	
Regular non-family labour force	870	
Male	760	
Female	120	

MANAGERS BY SEX AND AGE <sup>3</sup>		
	Number	
<b>Total</b>	<b>12 530</b>	
Male	11 140	
Female	1 390	
Less than 35 years	600	
Male	550	
Female	50	
35–44 years	1 510	
Male	1 370	
Female	140	
45–54 years	3 230	
Male	2 930	
Female	300	
55–64 years	3 940	
Male	3 550	
Female	380	
65 years and over	3 260	
Male	2 750	
Female	510	

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>2 740</b>	
Cattle	290	15 690
Sheep	1 080	11 870
Goats	600	4 380
Pigs/swine	130	70 590
Equines (Equidae)	770	1 750
Poultry (1 000 head)	n.a.	n.a.
Broilers	150	670
Laying hens	650	300
Others	300	10
Other animals		
Rabbits (breeding females)	930	10 590
Insects		
Bees (hives)	120	1 620

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>3 950</b>	<b>3 150</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>3 430</b>	<b>2 830</b>
Surface	870	n.a.
Sprinkler	1 330	n.a.
Localized irrigation (drop irrigation)	2 430	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The metadata review and data here presented refer to the last agricultural census (AC) in Montenegro, carried out in 2010. Previous agricultural censuses were conducted in 1931 and 1960.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal framework of the AC 2010 includes:

- the Law on Statistics and Statistical System of Montenegro (Official Gazette of the Republic of Montenegro 69/05);
- the Law on Conducting the 2010 AC (Official Gazette of Montenegro 54/09 and 14/10);
- FAO recommendations for the AC, WCA 2010; and
- the relevant EU legislation for implementing the FSS (2010).

### **Institutional framework and international collaboration**

The main bodies involved in the preparation, organization and conducting of the AC were: (i) the Statistical Office of Montenegro (MONSTAT), which had the authority to collect, compile, analyse and publish information for statistical purposes, according to the Law on Statistics and Statistical System of Montenegro; and (ii) the Committee for the AC, established under the Law on Conducting the AC 2010.

### **Census staff**

The AC 2010 field data collection involved 2 170 enumerators and 270 supervisors. For data entry, 30 persons were hired.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 May 2010, for land tenure, vineyards, orchards, organic agriculture, livestock, buildings, agricultural machinery and equipment, etc.

### **Reference periods:**

- the crop year (from 1 June 2009 to 31 May 2010), for utilised arable land, irrigated areas, soil conservation, tillage methods, animal housing and labour force, other gainful activities, landscape features, etc.
- the last three years (2008–2010), for rural development support, agricultural services, etc.

## 4. ENUMERATION PERIOD

Data collection started on 7 June 2010 and ended on 21 June 2010.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities and meets certain minimum thresholds of activity which are similar to the EU and Council Regulation (EC) No. 1166/2008. Two types of holdings were distinguished in the AC 2010: (i) family agricultural holdings (holdings in the household sector); and (ii) business entities (holdings in the non-household sector).

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

A family agricultural holding was covered by the census if, at the moment of registration, it met the following threshold:

- it had at least 1 000 m<sup>2</sup> of agricultural land; or
- if it had less than 1 000 m<sup>2</sup>, it possessed at least: one cow and one calf; one cow and one heifer; one cow and two adult head of small stock; five adult sheep or goats; three adult pigs; or four adult head of sheep or goats or pigs together; 50 head of adult poultry; or 20 beehives.

Exceptions were households not fulfilling the minimum threshold conditions, but: (i) where agricultural production was the only source of income; or (ii) engaged only in the cultivation of mushrooms in special buildings (cellars or tunnels).

No threshold was applied for business entities.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2010.

### **Frame**

The census frame was established based on a listing operation and using the available information from 2003 Census of Population, Dwellings, and Households. The listing operation helped to enumerate all households, and screen the agricultural production households that met the criteria applicable to holdings.

**Complete and/or sample enumeration methods**

The AC 2007 was conducted using complete enumeration of the target population.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

The enumeration of family agricultural holdings was conducted by face-to-face interview, using the “door-to-door”, PAPI method. Business entities were enumerated by self-interviewing, using the mail-out/mail-back (“postal”) method.

**Questionnaire(s)**

Three data collection forms were used for the AC 2010:

- Form P-1 (Household Listing Form) was a listing of all households, aimed at identifying family agricultural holdings;
- Form P-2 for the enumeration of family agricultural holdings; and
- Form P-3 for the enumeration of business entities.

The census questionnaires covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

For data entry, MONSTAT prepared an application called ENTRY. During data entry, statisticians controlled the accuracy of the entire process from the questionnaire on the application. Data entry took one month and a half. After entering, the material was controlled. To control the data in MONSTAT, an application called CONTROL was elaborated; this detected logical and arithmetical errors at questionnaire level. For the updating process, MONSTAT elaborated an application called CORRECTION. The application enabled viewing the errors in the questionnaire, as well as the type of error in the survey. The correction of the material was performed by MONSTAT employees. The complete software was done in the IT department of the MONSTAT. The application was made in Visual Basic 6.0 and the database was SQL Server 2000.

**11. CENSUS DATA QUALITY**

A PES was conducted immediately after the end of the AC enumeration, from 25 June to 5 July 2010. The PES was an effort to assess data quality and was carried out in EAs and municipalities selected at random. The PES took place using special questionnaires, with a limited number of variables.<sup>1</sup>

**12. DATA DISSEMINATION**

The preliminary results of the AC 2010 were published in July 2010 in the form of a press release (only the number of holdings and UAA for farm agricultural holdings). The final results were published seven months after the release of preliminary results.<sup>2</sup> The results of the AC 2010 are available in the form of tables and publications on the MONSTAT website.<sup>3</sup>

**13. DATA SOURCES**

**Eurostat.** 2019. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 9 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

**Statistical Office of Montenegro.** 2011. *Agricultural Census 2010, key variables - land and livestock resources, data by municipalities*. Podgorica, Montenegro. (also available at [http://www.monstat.org/userfiles/file/popis%20poljoprivrede/knjiga\\_1%20POLJ%2015.4.pdf](http://www.monstat.org/userfiles/file/popis%20poljoprivrede/knjiga_1%20POLJ%2015.4.pdf)).

**14. CONTACT**

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Website: <http://www.monstat.org/eng/>

<sup>1</sup> The results showed that deviations in coverage and data quality collected by the census and PES are statistically insignificant.

<sup>2</sup> MONSTAT published five publications based on census results: (i) Census key variables; (ii) Land use; (iii) Livestock; (iv) Special interest topics; and (v) Typology of farms.

<sup>3</sup> Available at <http://www.monstat.org/eng/page.php?id=58&pageid=58>

# MONTENEGRO – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>48 870</b>	<b>309 220</b>
Civil persons	48 820	294 400
An individual (sole holder holdings) <sup>2</sup>	48 820	294 400
Juridical persons (legal entities)	50	14 820

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>48 870</b>	<b>221 300</b>
Legal ownership and owner-like possession (owned land)	48 220	97 930
Rented from others (land rented)	450	2 220
Other form of tenure (shared farming or other modes)	1 670	121 150

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>48 870</b>	<b>221 300</b>
Holdings without UAA	590	
Holdings with UAA	48 280	221 300
Less than 2 ha	35 270	23 000
2–4.99 ha	7 630	23 500
5–9.99 ha	2 710	18 540
10–19.99 ha	1 160	15 500
20–29.99 ha	330	7 850
30–49.99 ha	310	12 360
50–99.99 ha	440	31 650
100 ha and over	430	88 900

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>48 870</b>	<b>309 220</b>
UAA	48 280	221 300
Arable land	10 190	4 050
Land temporarily fallow	50	30
Land under permanent crops	5 860	4 650
Permanent meadows and pastures	43 130	210 180
Kitchen garden	37 000	2 410
Other land	47 990	87 920
Wooded area	22 130	43 220
Unutilised agricultural land and other areas	47 540	44 710

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>48 870</b>	<b>221 300</b>
Male	42 580	204 640
Female	6 290	16 660

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>49 380</b>
Male	16 790
Female	32 590

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>98 960</b>
Male	59 800
Female	39 170
Family labour force	98 210
Male	59 330
Female	38 880
Regular non-family labour force	760
Male	470
Female	290

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>48 870</b>
Male	42 580
Female	6 290
Less than 35 years	2 740
Male	2 540
Female	200
35–44 years	6 000
Male	5 550
Female	450
45–54 years	11 700
Male	10 790
Female	910
55–64 years	12 210
Male	10 670
Female	1 540
65 years and over	16 230
Male	13 040
Female	3 190

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>33 530</b>	
Cattle	24 620	80 210
Sheep	6 090	229 040
Goats	3 580	35 760
Pigs/swine	13 470	47 670
Equines (Equidae)	3 120	4 400
Poultry (1 000 head)	n.a.	n.a.
Broilers	550	130
Laying hens	15 800	490
Others	570	10
Other animals		
Rabbits (breeding females)	150	1 090
Insects		
Bees (hives)	2 530	50 020

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>8 470</b>	<b>5 050</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>8 470</b>	<b>5 050</b>
Surface	6 460	n.a.
Sprinkler	2 580	n.a.
Localized irrigation (drop irrigation)	800	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

From 1934, a census has been carried out almost every year in the Netherlands. The 2010 Agricultural Census (AC), to which the metadata review and data presented here refer, was conducted together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Statistics Netherlands Act, 20 November 2003, (Bulletin of Acts and Decrees 516) establishes Statistics Netherlands as the executive office for statistics. It also provides right of access to administrative data. The Central Commission for Statistics (CCS), established in accordance with the Statistics Netherlands Act, is responsible for deciding on Statistics Netherlands' annual statistical programme and its five-yearly strategic long-term programme. The agricultural census is part of these programmes.

The AC 2010 was implemented in accordance with the relevant EU legislation for implementing the FSS 2010.

### **Institutional framework and international collaboration**

The AC is a joint effort of the Ministry of Economic Affairs, Agriculture and Innovation – especially its executive service NSIR – and Statistics Netherlands, the executive office for statistics.

### **Census staff**

In both Statistics Netherlands and the NSIR, a permanent team of personnel issues the regular work. At the NSIR, temporary personnel is hired for data entry and the first data controls.

## 3. REFERENCE DATE AND PERIOD

### **Reference days:**

- 1 April 2010, for general characteristics, livestock, animal housing, manure, storage and treatment facilities, etc.; and
- 15 May 2010, for land characteristics, etc.

### **Reference periods:**

- the crop year (from April 2009 to March 2010), for labour force; tillage methods, soil conservation, animal grazing, manure application (SAPM); irrigation, renewable energy, etc.
- the last three years (2008–2010), for landscape features, rural development support measures and average size of the irrigated area.

## 4. ENUMERATION PERIOD

Data collection for the AC 2010 started on 1 April 2010 and ended on 15 June 2010.<sup>1</sup>

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in Annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, either as its primary or secondary activity.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The threshold applied is EUR 3 000 SO ("extended size calculation").

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

Census data were collected using traditional field data collection (the classical approach), as well as administrative data sources.

### **Frame**

The AC relies on the Administrative Farm Register (AFR) held by the NSIR. By law, farmers must register with the NSIR. The AFR contains names, addresses and a few other characteristics of holders or holdings and a unique registration number.

### **Complete and/or sample enumeration methods**

All holdings that meet the definition of an agricultural holding are included in the census. There was no sampling for either the AC 2010 or the SAPM.

<sup>1</sup> Farmers had to respond by 15 May 2010. Farmers that did not respond by then received several reminders, and risked being fined or receiving less financial aid. Data collection ended on 15 June 2010.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

Data were provided partly from administrative sources and partly from field data collection, based on questionnaires. Field data collection for the AC 2010 took place mainly through the Internet (CAWI method). Only a small percentage of respondents used a paper form (self-interviewing, mail-out/mail-back method). Each holder receives a summons to participate in the AC prior to 1 April and a printed questionnaire was only made available on demand.<sup>2</sup>

The administrative sources extensively used in the AC 2010 were: the AFR, the IACS, and the Organic Farming Register (OFR).

**Questionnaire(s)**

One questionnaire was used, integrating both the 2010 AC and the SAPM, and presented to respondents as a single statistical inquiry. The questionnaire covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

New technology was widely applied in the AC 2010, for example for: (i) electronic data collection (CAWI); (ii) data collection of some census items using administrative registers; and (iii) online dissemination of census macrodata and microdata.

**10. DATA PROCESSING AND ARCHIVING**

Processing, analysis, dissemination and data delivery to Eurostat was done by Statistics Netherlands. Data were subjected to an extensive edit and error control phase. Checks were made on missing values, unlikely values, range and consistency. When necessary, additional information was collected from the farmers by phone.<sup>3</sup>

**11. CENSUS DATA QUALITY**

Checking the information in the questionnaires took place using a special control programme. Data were checked for hard and soft errors. Hard errors are non-valid values. Soft errors are unlikely values. If necessary, the checking personnel contacted the respondent to correct for errors. Approximately 85 percent of the questionnaires were completed online. The online questionnaire application contained extensive interactive controls and edits.

**12. DATA DISSEMINATION**

Dissemination is done via the Statline database, which is available on the Internet ([www.cbs.nl](http://www.cbs.nl)). In this database, Internet users may select their own indicators and information topics. Short publications on specific subjects are presented in the form of newspaper or Internet articles. Safe access to census microdata is also provided.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in the Netherlands. In: *European Commission: Eurostat* [online]. Luxembourg [Cited 23 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_the\\_Netherlands](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_the_Netherlands)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Statistics Netherlands.** 2012. *Farm Structure Survey 2009/2010 and Survey on agricultural production methods 2009/2010, National Methodological Report*. Amsterdam, the Netherlands. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/NL\\_NMR\\_FSS\\_2010.pdf/a0aa98f2-a793-4ea1-b9e2-bd6d923bcbf7](http://ec.europa.eu/eurostat/documents/749240/749313/NL_NMR_FSS_2010.pdf/a0aa98f2-a793-4ea1-b9e2-bd6d923bcbf7)).

**14. CONTACT**

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<sup>2</sup> Approximately 85 percent of the questionnaires were completed and returned using the Internet web application, which contained checks and interactive edits. Printed questionnaires were digitized by a data-entry firm and processed by the NSIR in the same way as the online questionnaires. There were several quality controls to ensure correct digitization.

<sup>3</sup> Data that were checked and accepted by NSIR were forwarded to Statistics Netherlands. Processing involved additional error control, and enrichment with additional information, such as total standard output and typology, imputation for nonresponse and analysis. Analyses were made at several levels of aggregation and comprised comparison with previous results and agricultural data from other sources. Approximately 95 percent of all questionnaires were returned completed. The small percentage that did not respond was imputed. New characteristics were imputed using nearest-neighbour imputation (best match based on farm type and size). Analysis on the impact of the imputation was part of the validation process. Weighting or re-weighting did not take place. The files are read in and stored in the NSIR database. Also the paper forms are archived by the NSIR.



THE NETHERLANDS – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>72 320</b>	<b>2 018 620</b>
Civil persons	68 140	1 877 570
An individual (sole holder holdings) <sup>2</sup>	68 140	1 877 570
Juridical persons (legal entities)	4 180	141 050

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>70 640</b>	<b>1 872 350</b>
Legal ownership and owner-like possession (owned land)	63 960	1 100 890
Rented from others (land rented)	33 690	507 020
Other form of tenure (shared farming or other modes)	25 800	264 440

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>72 320</b>	<b>1 872 350</b>
Holdings without UAA	1 700	
Holdings with UAA	70 640	1 872 350
Less than 2 ha	8 000	8 500
2–4.99 ha	11 000	37 130
5–9.99 ha	10 260	73 990
10–19.99 ha	10 820	156 970
20–29.99 ha	7 540	187 280
30–49.99 ha	11 680	457 410
50–99.99 ha	9 130	607 980
100 ha and over	2 210	343 090

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>72 320</b>	<b>2 018 620</b>
UAA	70 640	1 872 350
Arable land	48 250	1 022 070
Land temporarily fallow	3 310	7 280
Land under permanent crops	6 360	36 960
Permanent meadows and pastures	46 900	813 310
Other land	63 870	146 280
Wooded area	3 350	11 570
Unutilised agricultural land and other areas	63 630	134 710

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>72 320</b>	<b>1 872 350</b>
Male	67 910	1 816 500
Female	4 420	55 850

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>79 970</b>
Male	29 210
Female	50 760

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>211 630</b>
Male	136 420
Female	75 210
Family labour force	147 920
Male	93 270
Female	54 650
Regular non-family labour force	63 710
Male	43 140
Female	20 560

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>72 320</b>
Male	67 910
Female	4 420
Less than 35 years	2 610
Male	2 380
Female	230
35–44 years	14 850
Male	14 020
Female	830
45–54 years	22 760
Male	21 530
Female	1 240
55–64 years	18 890
Male	17 850
Female	1 040
65 years and over	13 220
Male	12 130
Female	1 080

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>50 440</b>	
Cattle	32 830	3 975 190
Sheep	12 870	1 129 500
Goats	3 720	352 830
Pigs/swine	7 030	12 254 970
Equines (Equidae)	14 610	142 530
Poultry (1 000 head)	n.a.	n.a.
Poultry–broilers	640	44 750
Laying hens	1 810	56 500
Others	170	2 370
Other animals	n.a.	
Rabbits (breeding females)	70	38 510
Other	180	

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

## 1. HISTORICAL OUTLINE

The country conducted the first Census of Agriculture (CA) in 2007.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA was carried out according to the Law on Census of Agriculture in the Republic of Macedonia, 2007 (Official Gazette of the Republic of Macedonia No. 39/06 and 113/06).

### **Institutional framework and international collaboration**

The Government has given the State Statistical Office the authority to collect and compile information for statistical purposes.

### **Census staff**

The CA 2007 staff involved in field data collection comprised 5 181 enumerators, 604 district instructors, 117 state instructors (employees of the State Statistical Office) and 288 members of the Committees for census districts.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 May 2007, for total area of holding, land tenure, land under permanent crops, livestock data, capacity of animal housing, owned machinery and equipment, etc.

**Reference period:** from 1 June 2006 to 31 May 2007, for area of arable land, irrigated area, machinery and equipment used, etc.

## 4. ENUMERATION PERIOD

The enumeration was conducted from 1 June to 15 June 2007.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). The census covered also all households that own forests<sup>1</sup> or fish ponds.<sup>2</sup>

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production that meets specific size requirements (see section 7 below). The CA 2007 covered the following types of holdings: (i) holdings in the household sector ("individual agricultural holdings" and households that own forest and/or fish ponds); and (ii) holdings in the non-household sector (business entities).

## 6. GEOGRAPHIC COVERAGE

The CA 2007 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following minimum size limits were applied for individual agricultural holdings:

- use 1 000 m<sup>2</sup> of agricultural area or more;
- use less than 1 000 m<sup>2</sup> of agricultural land or do not use any at all but own certain minimum number of livestock, poultry or beehives:
  - one cow and one calf;
  - one cow and one heifer;
  - one cow and two adult head of small livestock;
  - five adult sheep or goats;
  - three adult pigs;
  - four adult sheep or goats and pigs together;
  - 50 numbers of adult poultry; or
  - 20 beehives.

The CA 2007 also included the households below the minimum size limits specified above, if agricultural production was the only source of income of the household.

No threshold was applied for business entities.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CA.

<sup>1</sup> A *forest* is "every area over 500 m<sup>2</sup> overgrown with forest trees in the form of stands and is used for production of forest assortments or has a protective function or a special purpose.

<sup>2</sup> A *fish pond* is "a limited, closed space for rearing fish and can be filled with water and emptied".

**Frame**

The CA 2007 was organized according to the concept of complete coverage (“door to door”), which means that during the CA, all households on the territory of the Republic of North Macedonia were visited and recorded.

**Complete and/or sample enumeration methods**

The CA 2007 was conducted using complete enumeration.

**Sample design (if sampling was used)**

Not applicable.

**Data collection methods**

Census data collection from holdings in the household sector was carried out by trained enumerators, using the PAPI method. Business entities were required to fill in the census questionnaires themselves and send them by post to the State Statistical Office (self-interviewing, mail-out/mail-back method).

**Questionnaire(s)**

Two forms were used for census data collection:

- Questionnaire for individual agricultural holdings (Form ZEM.P.1) – for individual agricultural holdings, as well as for households that own forest or fish ponds; and
- Questionnaire for business entities (Form ZEM.P.2) – for business entities and local units covered by the census.

The census covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Data capture was done using manual data entry. The software used for data processing, analysis and tabulation was SAS.

**11. CENSUS DATA QUALITY**

The PES was performed to check the quality of census data. Fifty EAs were selected for the PES and approximately 2 percent of the total number of individual agricultural holdings were interviewed.<sup>3</sup>

**12. DATA DISSEMINATION**

The final census results were published in three volumes (one for business entities and two for individual holdings) in December 2007. The publications include data on the national and regional level (according to the Nomenclature of Territorial Units for Statistics, NUTS 1 and 3 level). The publications and other census results are available on the institution’s website.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 9 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

**State Statistical Office of the Republic of North Macedonia.** 2007. *Publication: Census of Agriculture 2007*. In: State Statistical Office of the Republic of North Macedonia [online]. Skopje, North Macedonia. [Cited 26 August 2019]. [http://www.stat.gov.mk/PublikaciiPoOblast\\_en.aspx?id=51&rbrObl=33](http://www.stat.gov.mk/PublikaciiPoOblast_en.aspx?id=51&rbrObl=33)

**14. CONTACT**

State Statistical Office

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Website: [http://www.stat.gov.mk/Default\\_en.aspx](http://www.stat.gov.mk/Default_en.aspx)

<sup>3</sup> The analyses of the PES results were done separately for: (i) land (total available land; utilized agricultural land; private-owned agricultural land; used arable land and gardens; used kitchen gardens; area under orchards; area under vineyards) by land size classes and (ii) livestock (cattle; sheep; pigs; goats, poultry) by classes. The following indices were calculated: rate of gross difference; net difference rate; gross turnover index; index of net change; identity index; index of inconsistency; average index of inconsistency. The results of PES were within the permitted limits, for most of the data.

# NORTH MACEDONIA – CENSUS OF AGRICULTURE 2007– MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>192 675</b>	<b>398 221</b>
Civil persons (individuals)	192 378	321 813
Juridical persons	297	76 408

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total individual holdings</b>	<b>192 378</b>	<b>321 814</b>
Less than 0.5 ha	83 502	36 281
0.5–1 ha	38 598	38 554
1–3 ha	50 422	108 652
3–5 ha	11 919	53 352
5–8 ha	5 067	36 031
8–10 ha	1 212	12 321
10 ha and over	1 658	36 624

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>192 675</b>	<b>398 221</b>
UAA	n.a.	334 226
Arable land	n.a.	240 969
Land temporarily fallow	n.a.	16 976
Land under permanent crops	n.a.	35 849
Nurseries	n.a.	127
Permanent meadows and pastures	n.a.	57 280
Forest	n.a.	48 607
Other land	n.a.	15 389

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>471 069</b>
Male	268 743
Female	202 326

SEASONAL EMPLOYEES USED ON THE HOLDING	
	Number
<b>Total</b>	<b>109 606</b>
Male	67 686
Female	41 920
Civil persons	103 187
Male	65 337
Female	37 850
Juridical persons	6 419
Male	2 349
Female	4 070

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	50 593	241 257
Sheep	8 386	794 053
Goats	25 401	132 924
Pigs/swine	50 315	233 702
Horses	26 654	32 567
Poultry (1 000 head)	62 350	2 429
Other animals	n.a.	
Rabbits and hares	3 353	35 567
Insects		
Bees (hives)	5 270	109 769

IRRIGATION BY LAND USE TYPES		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>131 334</b>	<b>79 638</b>
Land under temporary crops	n.a.	54 938
Land under permanent crops	n.a.	18 607
Meadows	n.a.	4 333
Other	n.a.	1 761

MACHINERY AND EQUIPMENT BELONGING TO THE HOLDING	
	Units
Four-wheel tractors	53 606
Cultivator	22 244
Other (machine-powered)	
Combine for cereals	1 799
Machines for collecting agricultural products	4 160
Machines for sowing, planting and transplanting	10 125
Equipment for irrigation	63 191
Milking equipment	4 118
Grape presses	6 022
Other equipment	65 334
Vehicles	6 616
Tractor trailers	43 072

TEMPORARY CROPS HARVESTED	
	Area (ha)
<b>Total</b>	<b>n.a.</b>
Wheat	88 736
Maize	26 997
Barley	32 865
Rice	2 992
Tomatoes	2 137
Cucumbers	551
Beans	1 881
Onion	1 248
Garlic	169
Carrots	144
Cabbages	1 208
Watermelons	3 472
Melons	571
Pepper	5 109
Potatoes	5 201
Soya beans	358
Sunflower	3 493
Rape	109
Tobacco	12 190
Sugar beet	320
Fodder crops	25 529
Aromatic and medicinal plants	61
Seeds and seedlings	102
Flowers and ornamental plants	692

## 1. HISTORICAL OUTLINE

The first census of agriculture (CA) was carried out in Norway in conjunction with the census of population (CP) in 1835. Separate censuses devoted exclusively to agriculture were conducted in 1907, 1918, 1929, 1939, 1949, 1959, 1969, 1979, 1989, 1999 and the latest in 2010. The metadata review and data presented here refer to the data from this census. The CA 2010 was carried out together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

Statistics Norway (SN), which has overall responsibility for official statistics in Norway, is governed by the Statistics Act of 16 June 1989 No. 54. There is no specific national legislation concerning the CA.

The CA 2010 was implemented in line with the EU legislation related to the FSS, with EEA relevance.

### **Institutional framework and international collaboration**

The CA 2010 and SAPM were carried out by the SN, Division for Primary Industry Statistics. Within the Division, the CA 2010 was organized as a separate project, with its own budget. A project leader for its implementation was engaged as from autumn 2008. Within the SN, a steering committee and a reference group were appointed for the project.

### **Census staff**

Two persons were recruited to the CA project, and five persons were engaged in the data editing process. No staff was directly involved in field data collection as the census data were collected by self-interview.

## 3. REFERENCE DATE AND PERIOD

### **Reference days:**

- 31 July 2010, for UAA by crop, number of livestock (excluding sheep), other gainful activities of the holding, equipment used for renewable energy production, etc.; and
- 1 June 2010 (or the start of the grazing season), for sheep number.

### **Reference periods:**

- the 12 months preceding the day of the survey (31 July 2010), for labour input, manure application, irrigation of agricultural area at least once, etc.;
- the year 2010, for age (renewing) of temporary grasses and grazing areas, grazing season by livestock category and area category, irrigation methods, source of irrigation water, type of animal housing and number of places, type of manure storage and capacity, etc.;
- autumn 2009/spring 2010, for tillage methods;
- winter 2009–2010, for soil conservation;
- the previous three years, for crop rotation; and
- the previous five years, for UAA (owned or rented) being drained during the last five years.

## 4. ENUMERATION PERIOD

Enumeration was a four-month operation, carried out from August to December 2010. The SAPM was conducted from 20 April to 20 June 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). The census included “agricultural and forestry property”, irrespective of active farming.

The **statistical unit** was the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, as either its primary or secondary activity.

## 6. GEOGRAPHIC COVERAGE

The CA covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The agricultural holdings meeting at least one of the following criteria were covered in the CA and SAPM: (i) 0.5 ha of UAA: arable land, permanent grass land, permanent crops; (ii) 0.1 ha of permanent outdoor crops included strawberries; (iii) 0.2 ha of fresh vegetables, which are outdoors; (iv) 0.03 ha of fresh vegetables or flowers and ornamental plants under glass or other accessible protective cover; (v) 0.1 ha of nurseries (except nurseries for forest trees); or (vi) ten bovines or 20 sheep over one year old or ten goats over one year old or five breeding sows or 50 other pigs or 1 000 poultry or 25 beehives.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CA 2010. Some census data were collected directly from administrative registers.

### **Frame**

The frame was the list of agricultural holdings which is annually updated by the SN on the basis of several administrative and statistical sources.

### **Complete and/or sample enumeration methods**

The 2010 CA was conducted by complete enumeration of all known agricultural holdings. The SAPM was conducted using sampling.

### **Sample design (if sampling was used)**

The frame for the SAPM was the population of agricultural holdings from the CA 2010. Stratification and PPS techniques were used for sampling.

### **Data collection methods**

Data were provided partly from administrative sources<sup>1</sup> and partly from field data collection based on questionnaires. Self-interviewing, namely the mail-out/mail-back method was used for field data collection. The questionnaires were mailed from the SN to respondents in mid-July 2010. An electronic version of the CA questionnaire was also available on the Internet. The CAWI method was used by 24 percent of respondents.

### **Questionnaire(s)**

Four questionnaires were used for the CA. The census covered all 16 core items recommended in the WCA 2010.

## 9. USE OF TECHNOLOGY

New technology was applied for: (i) the data collection using electronic questionnaires; (ii) the use of administrative registers as a source of census data; (iii) the use of OCR for data entry of paper questionnaires; and (iv) online dissemination of the CA 2010 results.

## 10. DATA PROCESSING AND ARCHIVING

The division for data processing retrieved the data by means of OCR, using the Eyes and Hands Software. Data were then loaded in an Oracle database. For data processing, DYNAREV was used. Due to missing or incorrect data items, follow-up contacts to the respondents by phone or e-mail were necessary.

## 11. CENSUS DATA QUALITY

Final checks were done on aggregated results. Aggregates of various characteristics were compared with results from previous surveys. Conformity checks at holding level between the census and the applications for governmental production subsidies were important. The items focused upon were type of holder (natural person – group holding – legal person) and the size of the UAA.

## 12. DATA DISSEMINATION

The presentation of preliminary results started on Internet in December 2010, while the first final results were presented in July 2011. The Internet is the main dissemination medium of statistics produced by the SN and tables and publications are all available free of charge on the SN website.

## 13. DATA SOURCES

**Eurostat.** 2019a. Archive: Agricultural census in Norway. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Norway](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Norway)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Statistics Norway.** 2012. *Farm Structure Survey 2009/2010 and Survey on agricultural production methods 2009/2010*. National Methodological Report. Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/NO\\_NMR\\_FSS\\_2010.pdf/d1f6742a-0cbd-4611-9c07-067f0fd98676](http://ec.europa.eu/eurostat/documents/749240/749313/NO_NMR_FSS_2010.pdf/d1f6742a-0cbd-4611-9c07-067f0fd98676)).

## 14. CONTACT

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<sup>1</sup> The most important administrative data source used was the Applications for Governmental Production Subsidies as per 31 July 2010. This source provided detailed information about agricultural area by crop and number of different livestock. Information on whether or not a holding is practising organic farming, or is converting to this practice, was also provided from this system. Other administrative data sources directly used were: the National Cadastre System, the Farm Register, the Register on Bovine Animals, the Organic Farming Register and the Education Register.

# NORWAY – CENSUS OF AGRICULTURE 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>46 620</b>	<b>4 015 620</b>
Civil persons	46 150	3 985 260
An individual (sole holder holdings) <sup>2</sup>	43 770	3 825 420
Two or more individuals (group holdings)	2 380	159 840
Juridical persons (legal entities)	480	30 360

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>46 620</b>	<b>1 005 940</b>
Legal ownership and owner-like possession (owned land)	41 070	587 520
Rented from others (land rented)	30 480	418 430

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>46 620</b>	<b>1 005 940</b>
Holdings without UAA	1 790	
Holdings with UAA	44 830	1 005 940
Less than 2 ha	1 050	1 000
2–4.99 ha	3 410	12 390
5–9.99 ha	8 110	60 470
10–19.99 ha	13 440	197 200
20–29.99 ha	8 440	206 320
30–49.99 ha	6 860	259 100
50–99.99 ha	3 020	199 800
100 ha and over	500	69 660

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>46 620</b>	<b>4 015 620</b>
UAA	44 830	1 005 940
Arable land	44 200	827 050
Land temporarily fallow	960	2 310
Land under permanent crops	1 590	3 050
Permanent meadows and pastures	27 720	175 840
Other land	40 030	3 009 680
Wooded area	37 020	1 951 760
Unutilised agricultural land and other areas	33 220	1 057 920

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>46 620</b>	<b>1 005 940</b>
Male	40 060	892 020
Female	6 560	113 920

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>61 760</b>
Male	30 520
Female	31 240

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>125 270</b>
Male	83 570
Female	41 710
Family labour force	107 900
Male	70 090
Female	37 810
Regular non-family labour force	17 370
Male	13 480
Female	3 890

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>46 620</b>
Male	40 060
Female	6 560
Less than 35 years	4 290
Male	3 470
Female	820
35–44 years	11 200
Male	9 170
Female	2 030
45–54 years	14 610
Male	12 740
Female	1 860
55–64 years	12 090
Male	10 850
Female	1 250
65 years and over	4 430
Male	3 830
Female	600

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>32 640</b>	
Cattle	16 900	874 530
Sheep	14 900	2 308 290
Goats	1 360	67 490
Pigs/swine	2 470	850 380
Equines (Equidae)	6 730	36 710
Poultry (1 000 head)	n.a	n.a
Broilers	430	11 850
Laying hens	1 890	4 920
Others	280	410
Other animals		
Rabbits (breeding females)	430	1 660
Insects		
Bees (hives)	620	35 250

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>6 570</b>	<b>93 250</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>3 920</b>	<b>40 370</b>
Sprinkler	3 720	n.a
Localized irrigation (drop irrigation)	330	n.a

<sup>1</sup> Data source – Eurostat database, available at:

<https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

Annual June agricultural censuses (ACs), covering the entire population of farms, were conducted since 1946 until 1988. Next agricultural censuses were conducted in 1996, 2002 and the latest in 2010. The AC 2010 was carried out together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The AC legislation includes:

- Act of 17 July 2009 on the Agricultural Census in 2010 (Journal of Laws No. 126, dated 10 August 2009, pos. 1040); and
- EU legislation relevant for implementing the FSS 2010.

### **Institutional framework and international collaboration**

The institution with the authority and responsibility for conducting the AC 2010 was the Central Statistical Office (CSO). The AC Act specifies that the census work is to be managed by the President of the CSO as the General Census Commissioner. The Central Census Bureau was responsible for the operational activities of the AC and it was supported in content-related matters by the 2010 AC Working Group.

### **Census staff**

The AC staff exceeded 15 000 people, out of which 12 000 census enumerators for the CAPI component and approximately 360 interviewers for the CATI component.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 30 June 2010, for land use, sown area, livestock, machinery and equipment.

### **Reference periods:**

- From 1 July 2009 to 30 June 2010, for the structure of household income, economic activity, use of fertilizers, for labour force, other gainful activities, irrigation of agricultural area, SAPM, manure storage, animal housing, etc.,
- the last 3 years (2008–2010), for landscape features, rural development support measures and average irrigated area.

## 4. ENUMERATION PERIOD

The enumeration period for the AC and SAPM was between 1 September and 31 October 2010.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding, defined as “an agricultural area, including forest land, buildings or their parts, equipment and stock if they constitute or may constitute an organized economic unit as well as rights related to running the farm”. Two types of holding were distinguished (i) the natural persons’ holdings (to which thresholds were applied) and (ii) legal persons’ holdings (no threshold applied). See also section 7 below.

## 6. GEOGRAPHIC COVERAGE

The AC covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

For the AC 2010, Poland adopted the following thresholds, with regard to natural persons’ holdings: (i) at least 1 ha of agricultural area; (ii) less than 1 ha of agricultural area if they have at least: 0.5 ha of fruit trees plantations, fruit shrubs plantations, field vegetables and strawberries, or hops; or 0.3 ha ornamental plants and orchard nurseries; or 0.1 ha vegetables and strawberries under cover, flowers and ornamental plants under cover, or tobacco; or ten head of total cattle, five cows, 50 pigs, ten sows, or 20 sheep/goats; 100 head of poultry; or five horses.<sup>1</sup>

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC. Some census data were collected directly from administrative registers.

### **Frame**

The frame for the AC and the SAPM was based on the list of agricultural holdings which was the result of an extensive multiyear exercise. The list was updated with data of the Personal Identification Number (PESEL) and the National Official Business Register (REGON) in respect of personal data and addresses.

<sup>1</sup> For domestic purposes, the farms with the smallest areas and of little economic importance were included in the sample survey carried out jointly with the census. Nevertheless, the final census results do not include the data for the smallest farms. The results of the census confirmed the small significance of the agricultural farms, which do not meet the threshold adopted for the AC 2010.



**Complete and/or sample enumeration methods**

The AC was conducted on a complete enumeration basis (of the agricultural holdings, above the established threshold). The SAPM was conducted on a sample basis.<sup>2</sup>

**Sample design (if sampling was used)**

The SAPM was designed as a sample survey of about 200 000 farms (10 percent of the holdings included in the AC 2010). The sample was based on a stratified random sampling scheme.

**Data collection methods**

The AC 2010 and SAPM were conducted jointly, using CAPI, CATI, and CAWI. Administrative data were also used in the AC, as a source of census data and for the validation purposes.

**Questionnaire(s)**

A single electronic questionnaire was used for data collection, combining information related to both the AC 2010 and the SAPM. The census covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Data collection using CAPI, CATI and CAWI channels was used in the AC 2010. Use of administrative data reduced respondent burden and ensured better data quality with regard to information on the use of Rural Development Programmes and organic production. Multimode data collection and merging data from several sources were implemented. Census results were disseminated and are accessible online. In addition, user access to anonymized microdata was also provided.

**10. DATA PROCESSING AND ARCHIVING**

The data captured through the CAPI, CATI and CAWI channels were gathered in the Operational Microdata Base (OMB) built for the AC 2010 and processed there (including control and correction of data, as well as completing the file obtained in the AC with the data obtained from administrative sources, imputed units and estimation for the SAPM). The data, depersonalized and validated in the OMB, were exported to an Analytical Microdata Base (AMB) to conduct analyses, prepare the data set for transmission to Eurostat and develop multidimensional tables for internal and external users.

**11. CENSUS DATA QUALITY**

Except for a few isolated cases, the CAPI and CATI method resulted in fully completed questionnaires. The computer applications used enabled controls for completeness and correctness of the data already at the collection stage, also facilitating the use of necessary definitions and clarifications during the questionnaire completion process. A set of detailed questionnaire completion guidelines was developed and delivered during training sessions.

**12. DATA DISSEMINATION**

The preliminary results of the agricultural census were published in February 2011 (basic data at the national level), and then in July 2011 in the publication entitled "Report on the Results of the 2010 Agricultural Census" (in a broader thematic scope, at NUTS<sup>3</sup> 2 level).

The final results of the AC 2010 were disseminated by a sequence of publications, covering the main thematic areas of the census. The reference publications were released in paper form, and are available online ([www.stat.gov.pl](http://www.stat.gov.pl)), and on CD-ROMs.

**13. DATA SOURCES**

**Central Statistical Office (GUS).** 2012. *Farm Structure Survey 2010, Survey on agricultural production methods 2010, National Methodological Report*. Warsaw, Poland. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/PL\\_NMR\\_FSS\\_2010.pdf/98f9e957-3787-4ff3-8faf-865e52504fb8](http://ec.europa.eu/eurostat/documents/749240/749313/PL_NMR_FSS_2010.pdf/98f9e957-3787-4ff3-8faf-865e52504fb8)).

**Eurostat.** 2019a. Archive: Agricultural census in the Poland. In: *European Commission: Eurostat* [online]. Luxembourg [Cited 23 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Poland](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Poland)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

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<sup>2</sup> In addition, a sample survey was conducted for the farms with the smallest area and of little economic importance, which were included in the sample survey carried out jointly with the census.

<sup>3</sup> Nomenclature of Territorial Units for Statistics.

POLAND – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>1 506 620</b>	<b>16 982 340</b>
Civil persons	1 502 470	15 003 210
An individual (sole holder holdings) <sup>2</sup>	1 502 470	15 003 210
Juridical persons (legal entities)	4 150	1 979 130

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>1 506 620</b>	<b>14 447 290</b>
Legal ownership and owner-like possession (owned land)	1 306 900	10 265 210
Rented from others (land rented)	252 240	2 706 250
Other form of tenure (shared farming or other modes)	207 250	1 475 830

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>1 506 620</b>	<b>14 447 290</b>
Holdings without UAA	7 960	
Holdings with UAA	1 498 660	14 447 290
Less than 2 ha	355 220	474 910
2–4.99 ha	468 200	1 529 270
5–9.99 ha	334 950	2 387 340
10–19.99 ha	218 510	3 010 790
20–29.99 ha	59 970	1 447 360
30–49.99 ha	35 310	1 331 720
50–99.99 ha	16 840	1 145 010
100 ha and over	9 650	3 120 900

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>1 506 620</b>	<b>16 982 340</b>
UAA	1 498 660	14 447 290
Arable land	1 351 940	10 797 430
Land temporarily fallow	180 690	431 570
Land under permanent crops	266 830	389 670
Permanent meadows and pastures	1 072 890	3 229 200
Kitchen garden	299 570	31 000
Other land	1 399 860	2 535 050
Wooded area	741 450	1 162 820
Unutilised agricultural land and other areas	1 337 420	1 372 220

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>1 506 620</b>	<b>14 447 290</b>
Male	1 058 500	11 958 270
Female	448 120	2 489 020

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>2 233 530</b>
Male	1 014 650
Female	1 218 890

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>3 802 590</b>
Male	2 100 370
Female	1 702 220
Family labour force	3 716 120
Male	2 038 590
Female	1 677 530
Regular non-family labour force	86 470
Male	61 780
Female	24 690

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>1 506 620</b>
Male	1 058 500
Female	448 120
Less than 35 years	221 580
Male	159 340
Female	62 240
35–44 years	369 560
Male	265 590
Female	103 970
45–54 years	486 300
Male	350 320
Female	135 980
55–64 years	302 790
Male	214 670
Female	88 120
65 years and over	126 400
Male	68 580
Female	57 820

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>918 870</b>	
Cattle	514 120	5 742 010
Sheep	11 230	261 080
Goats	22 710	107 070
Pigs/swine	388 460	15 244 170
Equines (Equidae)	96 160	256 640
Poultry (1 000 head) <sup>6</sup>	680 790	174 300
Poultry-broilers	337 540	102 180
Laying hens	580 020	51 080
Other	233 500	21 040
Other animals	n.a.	
Rabbits (breeding females)	94 510	513 490
Other	15 960	
Insects		
Bees (hives)	28 520	432 100

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>19 560</b>	<b>85 200</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>12 550</b>	<b>45 530</b>
Surface	3 640	n.a.
Sprinkler	2 660	n.a.
Localized irrigation (drop irrigation)	4 080	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

<sup>6</sup> Additional data are provided by Statistics Poland.

## 1. HISTORICAL OUTLINE

The first exhaustive, systematic and organized statistical data collection on the agriculture of Portugal took place in 1934, with the “General inventory of livestock and poultry”, which was later repeated in 1940 and 1972. In Portugal Mainland, agricultural censuses (farm surveys) were held in 1952–1954, 1968 and 1979, while in 1965, a census was conducted on agricultural holdings in the adjacent islands (Azores and Madeira). The first General Census on Agriculture was carried out in 1989, exhaustively and simultaneously across all regions of the country, and was harmonized with the EU. This was followed by the General Agricultural Census carried out in 1999. The 2009 Agricultural Census (CA 2009) to which the metadata and data presented here refer, was carried out together with the survey on agricultural production methods (SAPM).

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The agricultural census legislation consisted of:

- Decree-Law No. 166/2007, approving the organization of Statistics Portugal (INE);
- Law No. 22/2008 of 13 May laying down the principles, rules and structure of the National Statistical System (NSS); and
- the relevant EU legislation.

### *Institutional framework and international collaboration*

INE was the entity authorized and responsible for conducting the CA 2009, carried out in cooperation with the Ministry of Agriculture, Rural Development and Fisheries.

### *Census staff*

The organization of the CA 2009 involved more than 2 100 staff, including 1 700 interviewers and 279 staff with supervisory functions.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of interview, for inventory items, such as livestock numbers.

### *Reference periods:*

- the crop year 2008/2009 (from 1 November 2008 to 31 October 2009), for area and labour force characteristics;
- the last 12 months, for animal grazing, animal housing, manure application and storage, etc.; and
- the last three years, for irrigated area, landscape features and support for rural development.

## 4. ENUMERATION PERIOD

The census enumeration was carried out from November 2009 to October 2010.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production).

The **statistical unit** was the agricultural holding defined as a techno-economic unit where there is common use of inputs (labour, machinery, buildings, lands, etc.) and that cumulatively: (i) produces agricultural products or maintains in good agricultural and environmental conditions land which is no longer used for production purposes (as set forth in Regulation EC No. 1782/2003); (ii) reaches or exceeds a specific size (minimum limit); (iii) it is in a specific identifiable location, even when its area covers more than one commune or even more than one municipality; and (iv) is operated under single management of an agricultural holder, who assumes substantive decision-making.

## 6. GEOGRAPHIC COVERAGE

The CA 2009 covered the entire country, the Mainland and the Autonomous Regions of the Azores and Madeira.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Portugal applied the threshold of 1 ha of UAA for the Mainland; however, the holdings had to fulfil a minimum area (or production) for certain specific crops or the existence – on the day of the interviewer’s visit, or production in the reference year – of livestock above the established threshold. For the Autonomous Regions, lower thresholds were applied: the minimum UAA had to be 0.1 ha.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the CA 2009.

### *Frame*

The frame consisted of all the agricultural holdings in Portugal. The frame was a list of producers prepared by Statistics Portugal based on its extensive statistical and administrative data files and sources.

**Complete and/or sample enumeration methods**

The CA 2009 and the SAPM was an enumeration of all agricultural holdings.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

The census was conducted through face-to-face interviews, using the PAPI method. Most interviewers (86.3 percent) were also responsible for the recording of data on the laptops they were given.

**Questionnaire(s)**

Three different questionnaires were designed, one for the Mainland and one for each Autonomous Region (Azores and Madeira). The census covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

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. Online data dissemination was used to release census results.

**10. DATA PROCESSING AND ARCHIVING**

Most interviewers used laptops to enter data after collection with a paper questionnaire. The data recording process was characterized 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. Manual data entry was done for the paper questionnaires.

The data entry software programme included a series of range and consistency edits that allowed for an initial check of the data, enabling the interviewer to confirm or correct entries in the field.

**11. CENSUS DATA QUALITY**

Information was analysed through the SAGR software application, by using features specifically developed for the purpose: totalizers, selections of holdings, and comparison with external sources (micro data and aggregate data). There was also extensive use of the available administrative data for the validation of census data.

**12. DATA DISSEMINATION**

Statistics Portugal published the preliminary results in December 2010. The final results were released in May 2011. The information is available online on the Statistics Portugal website as a database or as a publication. The available information includes methodology and other metadata of value to data users.

To address the needs of the academic community, Statistics Portugal established a protocol to facilitate micro data access for research purposes.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in Portugal. In: *European Commission: Eurostat* [online] Luxembourg. [Cited 23 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Agricultural\\_census\\_in\\_Portugal&oldid=105855](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Agricultural_census_in_Portugal&oldid=105855)

**Eurostat.** 2019.b Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Instituto Nacional de Estatística/Statistics Portugal.** 2011. *2009 Agricultural Census, National Methodological Report*. Eurostat. (also available at [https://ec.europa.eu/eurostat/documents/749240/749313/PT\\_NMR\\_FSS\\_2010.pdf/a83155db-7dfd-42ae-8ebc-042456a6688b](https://ec.europa.eu/eurostat/documents/749240/749313/PT_NMR_FSS_2010.pdf/a83155db-7dfd-42ae-8ebc-042456a6688b)).

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PORTUGAL – CENSUS OF AGRICULTURE 2009 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>305 270</b>	<b>4 709 130</b>
Civil persons	297 380	3 218 330
An individual (sole holder holdings) <sup>2</sup>	297 380	3 218 330
Juridical persons (legal entities)	7 890	1 490 800

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>305 270</b>	<b>3 668 150</b>
Legal ownership and owner-like possession (owned land)	287 010	2 641 920
Rented from others (land rented)	33 950	824 850
Other form of tenure (shared farming or other modes)	23 820	201 370

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>305 270</b>	<b>3 668 150</b>
Holdings without UAA	1 400	
Holdings with UAA	303 870	3 668 150
Less than 2 ha	152 460	157 430
2–4.99 ha	77 060	239 600
5–9.99 ha	33 170	230 340
10–19.99 ha	18 980	262 130
20–29.99 ha	6 420	155 070
30–49.99 ha	5 320	202 820
50–99.99 ha	4 360	303 090
100 ha and over	6 110	2 117 670

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>305 270</b>	<b>4 709 130</b>
UAA	303 870	3 668 150
Arable land	202 370	1 173 130
Land temporarily fallow	59 160	341 530
Land under permanent crops	242 400	690 730
Permanent meadows and pastures	85 090	1 784 600
Kitchen garden	199 380	19 690
Other land	290 150	1 040 990
Wooded area	142 940	842 210
Unutilised agricultural land and other areas	286 060	198 780

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>305 270</b>	<b>3 668 150</b>
Male	215 900	3 070 260
Female	89 370	597 880

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>360 450</b>
Male	146 980
Female	213 470

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>708 080</b>
Male	386 680
Female	321 400
Family labour force	657 830
Male	351 490
Female	306 340
Regular non-family labour force	50 250
Male	35 190
Female	15 050

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>305 270</b>
Male	215 900
Female	89 370
Less than 35 years	7 850
Male	5 960
Female	1 900
35–44 years	25 080
Male	17 500
Female	7 580
45–54 years	54 440
Male	36 790
Female	17 650
55–64 years	75 960
Male	52 800
Female	23 150
65 years and over	141 940
Male	102 850
Female	39 090

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>203 780</b>	
Cattle	50 040	1 430 290
Sheep	51 790	2 219 640
Goats	32 510	420 710
Pigs/swine	50 080	1 913 160
Equines (Equidae)	27 650	56 010
Poultry (1 000 head)	n.a.	n.a.
Broilers	105 000	20 250
Laying hens	140 160	11 980
Others	36 520	3 120
Other animals	n.a.	
Rabbits (breeding females)	54 640	267 320
Other	1 420	
Insects		
Bees (hives)	8 810	195 600

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>163 060</b>	<b>540 880</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>156 270</b>	<b>466 330</b>
Surface	97 910	n.a.
Sprinkler	37 500	n.a.
Localized irrigation (drop irrigation)	21 220	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The General Agricultural Census (GAC) 2011 was the first comprehensive agricultural census carried out in the Republic of Moldova. Until 2011, only specialized agricultural censuses were conducted, such as the census of sown area in 1985, the livestock census in 1992 and the census of permanent crops in 1994.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal framework of the GAC 2011 included:

- the Law on Official Statistics No. 412-XV of 9 December 2004;
- Government Decisions on the conduct of the GAC;
- Decisions of the Republican Commission for the GAC (RCGAC); and
- Orders of the Director General of the National Bureau of Statistics (NBS).

The GAC methodology was elaborated in accordance with FAO recommendations outlined in the WCA 2010 and taking into account Regulation (EC) No. 1166/2008 of the European Parliament and of the Council.

### **Institutional framework and international collaboration**

The institution in charge of the organization and carrying out of the GAC was the NBS. To facilitate the implementation of the GAC, republican and regional committees for the GAC were established in accordance with the Government Decisions. For the implementation of the GAC, the Republic of Moldova received technical assistance from FAO and USA, and financial support from Sweden, Romania and the EU.

### **Census staff**

More than 6 000 census staff were involved in the process of data collection, from which approximately 4 500 enumerators, and 15 000 other personnel (supervisors and data processing staff (coders, IT specialists, scanning and other technical personnel)).

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 March 2011, for items related to livestock, agricultural buildings, agricultural machinery and equipment owned.

### **Reference periods:**

- the agricultural year 2010 (from 1 November 2009 to 31 October 2010), for land use and tenure, purpose of agricultural production, labour force, use of pesticides, fertilizers, irrigation, etc.; and
- the previous three years, for rural development measures.

## 4. ENUMERATION PERIOD

The census was conducted from 15 March to 15 April 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities related to the production of crop and livestock products, as well as to agricultural services provided by the holdings. Some data on aquaculture carried out in association with the agricultural activities of the agricultural holding were also collected in the census.

The main **statistical unit** covered in the GAC 2011 was the agricultural holding (AH), defined as a technical-economical unit of agricultural production (with or without juridical status) with a single management, performing agricultural activities by using agricultural land and/or raising livestock or activities to maintain the agricultural land in good agricultural and environmental conditions, whether as a principal activity or as a secondary activity.

## 6. GEOGRAPHIC COVERAGE

The AC 2011 covered both rural and urban areas, except for the territories of the Territorial administrative unit from the left part of the Nistru River and Bender municipality.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No thresholds were applied for the agricultural holdings in the non-household sector and for those in rural areas. For the agricultural holdings in the household sector in urban areas and of the members of horticultural associations (tenants of horticultural plots), the following minimum size limits were established (at least): (i) 10 ares (0.1 ha) of agricultural land; (ii) 1 are (100 m<sup>2</sup>) of land under greenhouses; (iii) one cattle, sheep, pig or goat; or (iv) 20 poultry.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The census was carried out using the classical approach (the short-long questionnaire concept).

**Frame**

The census frame was established based on a listing operation (carried out within one year before the census enumeration) and using the available statistical and administrative registers.

**Complete and/or sample enumeration methods**

The combination of complete enumeration with sample enumeration was used in the GAC 2011. The AHs were covered in the GAC using complete enumeration. The sample enumeration was applied to small-size agricultural units (SSAUs), which were subject to a short questionnaire (Form 2-GAC).

**Sample design (if sampling was used)**

For the SSAUs, a two-stage sample design was applied. At the first stage, in urban areas, the Enumeration Massifs (EMs) were sampled with a probability proportional to size in terms of area. At the second stage, the SSAUs from the sampled EMs were randomly selected.

**Data collection method(s)**

Face-to-face interviewing using a printed questionnaire (PAPI method) was applied to collect census data from the agricultural holdings in the household sector and the SSAUs. Self-interviewing using paper questionnaires was applied to collect census data from agricultural holdings in the non-household sector.

**Questionnaire(s)**

Two types of census questionnaires were applied: (i) Form 1-GAC (a long census questionnaire) was used to collect data from the AHs; (ii) Form 2-GAC (a short census questionnaire) was used for SSAUs. The 1-GAC questionnaire included all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

New technology was used for scanning the census questionnaires and for the dissemination of census results (online).

**10. DATA PROCESSING AND ARCHIVING**

GAC data were captured through scanning of questionnaires using optical mark recognition (OMR). Data entry and processing were undertaken by the NBS using the integrated data processing system (IDPS) developed via outsourcing. Logical and arithmetical coherency within and between tables were incorporated into the IDPS. GAC data were stored in the census database.

**11. CENSUS DATA QUALITY**

The pilot census was conducted one year before the census enumeration and its findings were used to finalize the census methodology and tools. A comprehensive mechanism for monitoring and supervision of fieldwork was established. It included two-level supervision of fieldwork (by supervisors and rayon/municipalities coordinators), regular reporting and analysis of response rates during data collection, field checks, etc. Soon after the census enumeration, a PES was carried out to assess the quality of census data, particularly to measure content errors.

**12. DATA DISSEMINATION**

Key preliminary census results were released soon after census enumeration (in July 2011, online) and more detailed data in January 2012 (in a printed publication and online). The final results of the GAC were disseminated in two phases: in May 2013 and September 2014 in the printed form (three printed publications and leaflets) and online, through NBS website. Analytical (thematic) reports have also been produced. Census results were presented at the country level and in the territorial profile (development regions, municipalities and districts rayons).

**13. DATA SOURCE**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020). 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 9 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

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## REPUBLIC OF MOLDOVA – AGRICULTURAL CENSUS 2011 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>		<b>2 253 371</b>
Agricultural holdings	902 214	2 243 540
Civil persons	898 768	970 874
Juridical persons	3 446	1 272 666
Small-size agricultural units (civil persons)	164 831	9 831

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>902 214</b>	<b>2 243 540</b>
Legal ownership and owner-like possession (owned land)	877 290	1 285 138
Rented from others (land rented)	2 685	571 504
Other form of tenure (shared farming or other modes)	22 239	386 899

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>902 214</b>	<b>2 243 540</b>
Less than 0.1 ha	38 177	2 566
0.1–0.2 ha	109 182	15 130
0.2–0.3 ha	79 315	19 697
0.3–0.5 ha	233 235	84 895
0.5–1 ha	180 529	123 327
1–2 ha	139 162	199 602
2–3 ha	64 482	156 172
3–4 ha	28 581	98 153
4–5 ha	11 933	52 660
5–10 ha	11 509	74 138
10–20 ha	1 868	24 980
20–30 ha	574	13 886
30–50 ha	638	24 568
50–100 ha	617	44 425
100–200 ha	621	89 860
200–500 ha	963	314 416
500–1 000 ha	550	378 419
1 000 ha and over	278	526 646

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>902 214</b>	<b>2 243 540</b>
UAA	846 981	1 940 136
Arable land	827 592	1 416 672
Land temporarily fallow	39 015	84 655
Land under permanent crops	614 522	199 161
Permanent meadows and pastures	3 902	324 302
Other land	n.a	303 404
Unutilised agricultural area	256 505	248 398
Woodland	6 309	6 116
Land under buildings, constructions, etc.	775 266	39 931
Other land	5 094	8 959

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>898 768</b>	<b>970 874</b>
Male	571 573	689 567
Female	327 195	281 307

HOLDINGS IN THE HOUSEHOLD SECTOR BY MAIN PURPOSE OF PRODUCTION	
	Holdings
<b>Total producing for:</b>	<b>902 214</b>
Home consumption only	770 656
Mainly for sale (over 50%)f	51 541
Mainly for home consumption (over 50%)	80 017

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE	
	Number
<b>Total</b>	<b>898 768</b>
Male	571 573
Female	327 195
15–24 years	13 002
Male	8 334
Female	4 668
25–34 years	79 475
Male	56 347
Female	23 128
35–44 years	162 747
Male	116 571
Female	46 176
45–54 years	226 151
Male	159 482
Female	66 669
55–64 years	211 139
Male	134 492
Female	76 647
65 years and over	206 254
Male	96 347
Female	109 907

EMPLOYEES WORKING ON THE HOLDING	
	Number
<b>Total</b>	<b>375 370</b>
Male	227 378
Female	147 992
Hired permanent workers	60 386
Male	38 693
Female	21 693
Temporarily employed	314 984
Male	188 685
Female	126 299

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>551 909</b>	
Cattle	139 594	206 095
Sheep	62 672	651 442
Goats	51 155	117 913
Pigs/swine	168 916	440 649
Horses	47 274	51 275
Poultry (1 000 head)	534 399	12 502
Chicken for meat	419 574	3 719
Hens for eggs	472 383	6 680
Geese	108 530	649
Ducks	166 727	1 172
Turkeys	53 709	248
Other	4 631	33
Other animals	n.a	
Rabbits and hares	51 838	322 683
Fur animals	1 305	10 409
Insects		
Bees (hives)	8 409	94 527

**Note:** data provided in tables 2–9 are for agricultural holdings only. Small-scale agricultural units are excluded.



## 1. HISTORICAL OUTLINE

Romania conducted the first regular agricultural census in 1941 (together with the population census), followed in 1948 by a general agricultural census.<sup>1</sup> The third General Agricultural Census (GAC) was conducted in 2002, after more than 50 years. The present metadata review refers to the fourth GAC, carried out in 2010.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The agricultural census legislation included:

- Government Decision No. 957/2005 defining the organization and functioning of the National Institute of Statistics (NIS);
- Law No. 226/2009 on the organization and functioning of official statistics in Romania, with further amendments;
- Law No. 153/2008 on carrying out the GAC in Romania;
- Government Decision No. 1370/2009 regarding the organization and carrying out of the GAC 2010 in Romania; and
- the EU legislation relevant for implementing the FSS 2010.

### **Institutional framework**

The NIS is responsible for conducting agricultural censuses every ten years. The GAC 2010 was organized, in technical and methodological terms, by the NIS and was conducted in cooperation with the Ministry of Agriculture and Rural Development and with the Ministry of Internal Affairs and Administrative Reform, under the overall coordination of the Central Commission for the General Agricultural Census (CCGAC). In addition, the Central Technical Secretariat (CTS) was established under the CCGAC. To prepare, organize and monitor the census activities at the subnational level, census commissions were set up at the level of counties, towns, cities and communes.

### **Census staff**

The staff involved in census data collection amounted to approximately 38 200 persons, of which 30 000 enumerators, 5 000 chief enumerators (supervisors) and 3 200 coordinators.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 December 2010, for stock/inventory items, such as livestock, organic farming and animal housing.

### **Reference periods:**

- the agricultural year (from 1 October 2009 to 30 September 2010), for land use, fertilizers, irrigation, animal mowing, machinery and agricultural equipment, ecologic agriculture, labour force, other gainful activities, other information on activities on the holding; and
- the previous three years, for average area actually irrigated in the last three years, landscape features, soil conservation and support for rural development measures.

## 4. ENUMERATION PERIOD

The GAC was conducted from 2 December 2010 to 31 January 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production).

The **statistical unit** was the agricultural holding, defined according to Eurostat requirements and FAO recommendations, such as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, as either its primary or secondary activity.<sup>2</sup>

## 6. GEOGRAPHIC COVERAGE

The GAC covered the entire territory of the country, both rural and urban areas.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following units were not covered in the GAC:<sup>3</sup> (i) units having only unutilized agricultural area; (ii) units with a UAA comprising only kitchen garden, with a total area of less or equal to 15 acres (0.15 ha); and (iii) units with less than ten head of poultry.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the GAC 2010.

<sup>1</sup> Between 1948 and 1989, there were regularly conducted livestock censuses: (i) yearly, between 1951–1954 and 1979–1989; and (ii) every four years (between 1954–1962 and 1973–1977). Two specialized censuses on vineyards and orchards were conducted in 1964 and 1979.

<sup>2</sup> The agricultural holdings were classified, according to their legal status, as agricultural holdings without legal personality (individual agricultural holding, authorized natural person, individual enterprises, family enterprises) or agricultural holdings with legal personality.

<sup>3</sup> These thresholds were applied at the dissemination stage. No threshold was established for census data collection.

**Frame**

The census frame was established using the Agricultural Administrative Registers (AARs), held in each commune. The AAR is the official register of information on agricultural households (natural persons) and/or legal units that own or use agricultural land and/or keep livestock.

**Complete and/or sample enumeration methods**

All holdings in scope were enumerated.

**Sample design (if sampling was used)**

Not applicable.

**Data collection methods**

The following methods were applied: (i) self-interviewing, under the guidance of a chief enumerator, for the legal units (agricultural holdings with legal personality); and (ii) face-to-face interviewing using paper questionnaires (PAPI method), for all other agricultural holdings.

**Questionnaire(s)**

A single questionnaire was used for census data collection, comprising also the characteristics on agricultural production methods. The GAC 2012 questionnaire covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

For production and dissemination of timely preliminary results, scanning technology was used to capture data from the page of the questionnaire centralizing selected items from the filled-in census questionnaire.

The census results were disseminated online through the NIS website.

**10. DATA PROCESSING AND ARCHIVING**

Data capture was done in a decentralized manner, with manual data entry, at the level of each territorial statistical office (42 offices). For this activity, 450 computer operators were temporarily hired.

After data entry and after resolving all the errors identified at the micro (record) level, the data were transferred to the Central Technical Secretariat. The Secretariat reviewed the data at the aggregate level (both at national and county level) to identify possible inconsistencies. Depending on the type of errors found, they were solved by individual correction at local level (the territorial statistical offices), and through automatic corrections, applied at the central level. Imputations to complete the missing data were also used. According to the Law of national archives No. 16/1996 and Government Decision No. 1370/2009, after validation, archiving and publication of the results, the census questionnaires were destroyed.

**11. CENSUS DATA QUALITY**

A PES was carried out in February 2011 to check the quality and coverage of information collected in the GAC 2010.

**12. DATA DISSEMINATION**

The census results were disseminated through printed publications, CD-ROMs and the NIS website. Preliminary estimates with information on 20 characteristics were released on December 2011 (in a printed publication and CD-ROM). Final results were released in July 2012 (printed publication, CD-ROM and through the NIS website).

**13. DATA SOURCES**

**Eurostat.** 2019. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**National Institute of Statistics.** 2012. *Farm Structure Survey 2009/2010 and Survey on agricultural production methods 2009/2010. National Methodological Report.* Eurostat. (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/RO\\_NMR\\_FSS\\_2010.pdf/fd24fb92-c80d-46fb-92bd-3ec98b8bb69a](http://ec.europa.eu/eurostat/documents/749240/749313/RO_NMR_FSS_2010.pdf/fd24fb92-c80d-46fb-92bd-3ec98b8bb69a)).

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ROMANIA – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>3 859 040</b>	<b>15 695 030</b>
Civil persons	3 828 350	8 307 450
An individual (sole holder holdings) <sup>2</sup>	3 828 350	8 307 450
Juridical persons (legal entities)	30 700	7 387 580

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>3 859 040</b>	<b>13 306 130</b>
Legal ownership and owner-like possession (owned land)	3 576 870	8 033 580
Rented from others (land rented)	69 380	3 642 000
Other form of tenure (shared farming or other modes)	323 640	1 630 540

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>3 859 040</b>	<b>13 306 130</b>
Holdings without UAA	134 710	
Holdings with UAA	3 724 330	13 306 130
Less than 2 ha	2 731 730	1 718 360
2–4.99 ha	727 390	2 229 930
5–9.99 ha	182 440	1 210 510
10–19.99 ha	43 610	571 390
20–29.99 ha	9 730	233 850
30–49.99 ha	8 210	315 400
50–99.99 ha	7 480	518 300
100 ha and over	13 730	6 508 390

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>3 859 040</b>	<b>15 695 030</b>
UAA	3 724 330	13 306 130
Arable land	2 756 910	8 306 420
Land temporarily fallow	444 980	952 520
Land under permanent crops	1 124 110	311 430
Permanent meadows and pastures	1 511 260	4 506 250
Kitchen garden	2 483 560	182 030
Other land	3 400 880	2 388 900
Wooded area	333 390	1 493 820
Unutilised agricultural land and other areas	3 378 480	895 080

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>3 859 040</b>	<b>13 306 130</b>
Male	2 610 460	10 890 730
Female	1 248 580	2 415 400

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>3 222 950</b>
Male	1 132 220
Female	2 090 730

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>7 156 930</b>
Male	3 798 050
Female	3 358 880
Family labour force	7 051 300
Male	3 712 240
Female	3 339 060
Regular non-family labour force	105 630
Male	85 820
Female	19 820

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>3 859 040</b>
Male	2 610 460
Female	1 248 580
Less than 35 years	280 440
Male	220 840
Female	59 600
35–44 years	609 610
Male	495 420
Female	114 190
45–54 years	636 370
Male	484 520
Female	151 850
55–64 years	868 910
Male	594 190
Female	274 720
65 years and over	1 463 720
Male	815 490
Female	648 230

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>2 836 640</b>	
Cattle	728 020	1 989 790
Sheep	272 280	8 412 170
Goats	176 270	1 240 860
Pigs/swine	1 655 580	5 345 050
Equines (Equidae)	489 500	592 520
Poultry (1 000 head)	n.a.	n.a.
Broilers	1 532 540	34 260
Laying hens	2 286 440	39 070
Others	598 150	5 860
Other animals	n.a.	
Rabbits (breeding females)	48 310	132 610
Other	710	
Insects		
Bees (hives)	42 860	1 300 540

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>36 480</b>	<b>418 720</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>17 330</b>	<b>133 460</b>
Surface	7 840	n.a.
Sprinkler	8 430	n.a.
Localized irrigation (drop irrigation)	3 660	n.a.

<sup>1</sup> Data source – Eurostat database, available at:

<https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The first All-Russian Agricultural Census was conducted by the Russian Empire in 1916, and the next in 1917. The last large-scale census was conducted in Russia in the Soviet period in 1920. The 2006 All-Russia Census of Agriculture (CA) was the first comprehensive agricultural census conducted in the country, in line with the 2010 WCA recommendations.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The census was taken within a secure legal environment, based on the Federal Law on the All-Russian Agricultural Census, No.108-FZ, dated 21 July 2005 and four Resolutions of the Government of the Russian Federation.

### **Institutional framework and international collaboration**

The main institution responsible for conducting the agricultural census in the country is the Federal State Statistics Service (Rosstat). The CA was carried out in collaboration with other organizations and ministries, which provided assistance to Rosstat in matters related to their area of competence.

### **Census staff**

In total, approximately 200 000 temporary census staff (enumerators, supervisors/instructors, coordinators, etc.) participated in data collection.

## 3. REFERENCE DATE AND PERIOD

### **Reference days:**

- 1 July 2006, for data on land use, land tenure, livestock numbers, permanent crops and the currently available labour force; and
- 1 September 2006, for livestock in the Far North and equated areas.

### **Reference periods:**

- agricultural year 2006, for sown areas of temporary crops, use of fertilizers, pesticides and soil improvement procedures;
- from 1 January to 31 December 2005, for labour force and sales of agricultural production.

## 4. ENUMERATION PERIOD

The enumeration was carried out in the country from 1 July to 25 July 2006, except for the remote and difficult access areas (Far North and equated areas), where the census data were collected from 15 September to 15 November 2006.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

**Census scope.** The census covered agricultural activities (crop and livestock production).

**Statistical unit.** The enumeration unit for the CA 2006 was defined as “a legal or natural person that owns, uses or rents land designated or used for agricultural production, or possesses livestock.”

## 6. GEOGRAPHIC COVERAGE

The census covered the entire territory of the country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

For subsidiary holdings of non-agricultural organizations, the following minimum size limits were applied: more than 1 ha of sown area of agricultural crops; not having agricultural crops, but having more than ten head of livestock, more than three head of cows, more than 20 head of pigs, more than 15 head of sheep and goats, more than 30 head of poultry, or more than three head of horses.

For the households engaged in agricultural production, a threshold of 4 ares (0.04 ha) was established.

## 8. METHODOLOGY

**Methodological modality for conducting the census.** The classical approach was applied for conducting the CA 2006.

### **Frame**

The creation of the census frame (lists of enumeration units) was a major pre-census activity. The sources of the list were: the Statistical Business Register of Rosstat, the State Land Register maintained by the Real Estate Agency of Russian Federation, the Household Books (Registers) in the village administrations, the State Register of Real Estate Rights and Transactions, records of the Technical Inventory Bureaus, records of the Federal Veterinary and Phytosanitary Surveillance Service, records from the bodies of the State Technical Supervision Service, the State Register of Urban Development and the lists of households in the urban settlements compiled for the 2002 Census of Population.

### **Complete and/or sample enumeration methods**

A combination of complete enumeration and sampling was adopted for data collection:

- complete enumeration covered agricultural enterprises, private farms, individual entrepreneurs, horticultural, kitchen-garden, livestock-growing and dacha non-profit associations, households in rural settlements, households in cities and urban settlements with less than 500 households;

- sample enumeration covered cities and urban settlements with more than 500 households, as well as operated plots of horticultural, kitchen-garden, livestock-growing or *dacha* non-profit associations.

#### **Sample design (if sampling was used)**

In urban settlements with more than 500 households, those with livestock and/or large land areas (the threshold being established individually for each urban settlement) were singled out into a separate stratum and enumerated completely. For the remaining households, a 20 percent simple random sample was used.

To obtain more detailed information for horticultural, kitchen-garden, livestock-growing or *dacha* non-profit associations, within each of them, a systematic random sample was selected from the list of operated plots, and each selected plot was enumerated using the annex of the corresponding questionnaire.<sup>1</sup>

#### **Data collection method(s)**

Representatives of agricultural enterprises were given the paper questionnaires during the instruction seminars organized for them and the completed questionnaires were sent back by post to the territorial statistical office (self-interviewing method). Face-to face interviews with paper questionnaires were conducted for the remaining census units (PAPI method).

#### **Questionnaire(s)**

Four questionnaires were used to collect information, one for each category of enumeration units.

The AC 2006 census questionnaire covered 14 of the 16 core items<sup>2</sup> recommended for the WCA 2010 round.

## **9. USE OF TECHNOLOGY**

OCR was applied for data capture. Census results were disseminated and are accessible online.

## **10. DATA PROCESSING AND ARCHIVING**

The computerized system for the processing of the CA 2006 data covered the regional and federal levels. The regional level was a network of regional information-processing centres based at Rosstat regional offices equipped with hardware and software facilities. Data capture using scanning technology, as well as checking of full coverage of census units was carried out at that level.<sup>3</sup> At the federal level, the Rosstat Computer Centre completed the data processing of census data.

## **11. CENSUS DATA QUALITY**

A great deal of emphasis was placed on data quality throughout the exercise from, planning, questionnaire design, training, supervision, data entry and editing, to validation and analysis. A comprehensive mechanism for the monitoring and supervision of fieldwork was established. It included supervision of fieldwork at the level of instruction areas and at different subnational levels, regular reporting and analysis of response rates during data collection, field checks, etc.

## **12. DATA DISSEMINATION**

The final results of the CA 2006 were printed in nine volumes, published in 2008. The volumes contain census methodology, legal framework, census instruments, instructions, data tables, diagrams and maps. The electronic versions of the publications were also issued on two CD-ROMs. The census results are available on the Rosstat website.

## **13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 9 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

**Rosstat.** 2008a. *All–Russia Census of Agriculture 2006: The programme, Methodology and Organization: Volume 8*. Moscow, the Russian Federation. (also available at <http://www.gks.ru/news/perepis2006/totals-osn.htm>).

**Rosstat.** 2008b. *Results of All Russia Census of Agriculture 2006* (on 9 volumes), Moscow, the Russian Federation. (also available at [http://www.gks.ru/news/perepis2006/T8/part1\\_t8.pdf](http://www.gks.ru/news/perepis2006/T8/part1_t8.pdf)).

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<sup>1</sup> The sampling rate depended on the total number of operated plots in the association: 100 percent for less than ten plots, 50 percent for 10 to 99 plots, 25 percent for 100 to 199 plots, 20 percent for 200 to 299 plots, 15 percent for 300 to 499 plots, and 10 percent for more than 500 plots.

<sup>2</sup> The exceptions were the following items: (i) "Household size" and (ii) "Presence of forest and other wood land on the holding".

<sup>3</sup> At the regional level the following main tasks were carried out: (i) scanning of census forms; (ii) checking full coverage of census units.

## THE RUSSIAN FEDERATION – 2006 AGRICULTURAL CENSUS – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>		<b>450 599 500</b>
Agricultural enterprises	59 208	410 263 700
Large and medium agricultural enterprises	27 787	329 666 300
Small agricultural enterprises	20 392	76 296 600
Units of non-agricultural organizations	11 029	4 300 900
Private farms	253 148	25 972 800
Individual entrepreneurs	31 993	3 398 000
Private households and other individual farm operations	22 799 400	9 713 000
Non-profit associations of citizens	80 348	1 252 100

DISTRIBUTION OF LARGE, MEDIUM AND SMALL ENTERPRISES, BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total agricultural enterprises</b>	<b>59 208</b>	<b>410 263 700</b>
Holdings without land	7 219	
Holdings with land	51 989	410 263 700
less than 4 ha	3 309	5 700
4 – 10 ha	2 232	14 800
11 – 20 ha	1 564	24 500
21 – 50 ha	2 695	94 600
51 – 100 ha	2 472	187 100
101 – 200 ha	2 719	397 800
201 – 500 ha	4 756	1 598 700
501 – 1 500 ha	7 758	7 251 700
1 501 – 3 000 ha	6 806	15 077 400
3 001 – 4 000 ha	3 508	12 237 300
4 001 – 6 000 ha	4 943	24 293 200
6 001 – 10 000 ha	4 495	34 345 000
10 001 – 40 000 ha	4 195	72 270 300
40 000 ha and over	537	242 465 600

LAND USE	
	Area (ha)
<b>Total</b>	<b>450 599 500</b>
Agricultural land	165 985 100
Arable land	102 140 000
Land under meadows	13 930 200
Land under pastures	35 200 500
Land under permanent crops	778 200
Other (lode)	13 936 100
Other land	284 614 400

EMPLOYEES WORKING IN THE AGRICULTURAL ENTERPRISES	
	Number
<b>Total</b>	<b>2 613 900</b>
Permanent workers	2 447 200
Male	1 496 700
Female	950 500
Temporary workers	166 700

HOLDINGS BY HOUSEHOLD SIZE	
	Number
<b>Total</b>	<b>21 092 400</b>
1–2 person	11 735 200
3–4 persons	7 163 600
5–6 persons	1 815 900
7 persons and over	377 700

LIVESTOCK	
	Head
Cattle	23 514 200
Sheep	19 609 000
Goats	2 851 800
Pigs/swine	17 091 800
Equines	1 357 400
Horses	1 343 900
Asses (donkeys)	13 200
Mules	300
Camel	6 200
Poultry (1 000 head)	391 160
Chickens	354 991
Geese	10 945
Turkeys	2 116
Ducks	21 715
Guinea fowl	78
Quail	1 286
Pheasants	24
Ostriches	5
Other animals	
Rabbits and hares	6 322 400
Insects	
Bees (hives)	3 727 800

MACHINERY AND EQUIPMENT USED ON THE HOLDING	
	Units
Total tractors of all kinds	1 102 700
Crop harvesting machinery/equipment	n.a
Grain harvesting	192 100
Corn pickers	3 800
Potato harvesting	6 600
Forage harvesting	33 800
Ploughs (machine-powered)	3 200
Other (machine-powered)	
Beet harvesting machine	8 200
Milking machines	60 500
Tiller	627 400
Tractor plow	351 100
Tractor mower	220 600
Seeders	309 900

IRRIGATION	
	Area irrigated (ha)
Total land area irrigated	939 200

## 1. HISTORICAL OUTLINE

The metadata review and data here presented refer to the last comprehensive Census of Agriculture (CA) in the Republic of Serbia carried out in 2012. The previous agricultural census was conducted in 1960. Between these two censuses, basic structural data on agriculture were collected within the Population Censuses.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA legislation consisted of:

- the Official Statistics Law (Official Gazette of the Republic of Serbia (RS), number 104/09)
- the Law for the Census of Agriculture 2011 (Official Gazette RS, No. 104/09 and 24/11), amended in 2012; and
- the EU legislation relevant for implementing the FSS 2010.

### **Institutional framework and international collaboration**

The Statistical Office of the Republic of Serbia (SORS) is the authority responsible for preparing, organizing and conducting the CA pursuant to the applicable legislation. The SORS led the census project, with the cooperation and assistance of the Ministry of Agriculture, Forestry and Water Management (MAFWM), Municipality Census Commissions and other institutions and organizations. Technical assistance was received during the implementation phase from the EU.

### **Census staff**

The total staff involved in fieldwork amounted to 6 138 enumerators, 962 municipal instructors, 294 republic instructors, 15 regional coordinators and 795 members of municipal census commissions.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 30 September 2012, for data on land, number of livestock, owned machinery, number and capacity of owned buildings.

### **Reference periods:**

- from 1 October 2011 to 30 September 2012 (crop year 2011/2012), for data on the use of agricultural land; use of fertilizers and pesticides; organic farming; utilized capacity of buildings, machinery and equipment; agricultural production methods; labour force; etc.; and
- the previous three years, for average irrigated area, use of government support measures, and establishment and maintenance of landscape features.

## 4. ENUMERATION PERIOD

The AC was conducted from 1 October to 15 December 2012.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding, defined as “a technical and economic independent production unit with a single management on which an enterprise, farm cooperative, institution or another legal entity, unincorporated enterprise or family agricultural holding undertakes agricultural production, as either a primary or a secondary activity”.

## 6. GEOGRAPHIC COVERAGE

The CA 2012 covered the territory of the country, without the Autonomous Provinces of Kosovo and Metohija.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds were applied for the family agricultural holdings:

- Cultivates (uses) 50 or more ares (0.5 ha) of agricultural land for agricultural production, regardless of whether such production is intended for the market;
- Cultivates (uses) less than 50 ares (0.5 ha) of agricultural land but practises intensive crop farming, fruit-growing, viticulture, growing of vegetables and flowers, production of mushrooms and livestock raising, that is, engages in other forms of agricultural production intended for the market;
- A holding which, as of 30 September 2012, raises no less than: two head of cattle; one head of cattle and two head of small animals (pig, goat, sheep) in total; five head of sheep or five head of goat; three head of pig; four head of small animals (pig, goat, sheep) in total; 50 heads of poultry; or 20 colonies of bees.

No threshold was applied for legal entities.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CA 2012.

**Frame**

Lists of households with own-account agricultural production were created based on the 2011 Census of Population, Households and Dwellings (CPHD), and updated using administrative data sources. The Register of legal entities was established for the purposes of the CA by using the available sources (Statistical Business Register, registers held by local government bodies, MAFWM, and others).

**Complete and/or sample enumeration methods**

All holdings in scope were enumerated.

**Sample design (if sampling was used)**

No sampling was used.

**Data collection method(s)**

Data collection was done by face-to-face interviewing method, using a printed questionnaire (PAPI method).

**Questionnaire(s)**

The CA 2012 used a single questionnaire, for both family holdings and legal entities. In addition, a “control list” for all agricultural households was filled in during census enumeration.

The census questionnaire covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

The EAs, drawn up by the Geodetic Office of the Republic of Serbia for the purposes of the CPHD, were used for the CA 2012. Data entry was done by scanning, using intelligent character recognition (ICR). The census results were disseminated online on the SORS website.

**10. DATA PROCESSING AND ARCHIVING**

Quality control and correction of completed questionnaires were carried out in several phases of the AC: during the fieldwork, during data entry and after data entry. The scanning with ICR facilitated further centralized data processing and archiving. For data protection, backup copies of the scanned material were made.

Data processing was done using the software platform developed at the SORS. Complete logical and computer control was initiated after the completion of data entry. Approximately 988 criteria were defined to identify errors. Corrections were automatic and manual. Imputation of data was implemented when needed. For the needs of the analysis of the CA 2012 results and validation, 115 output tables were created. In a number of tables, it was possible to directly compare the data from the CA (before and after error correction) with data from other sources (cadastre, Register of holdings of the MAFWM, regular surveys in agricultural statistics).

**11. CENSUS DATA QUALITY**

For the purpose of checking the reliability of the census results, from 14 January to 31 January 2013, a PES<sup>1</sup> was carried out. The PES served as a basis to control the quality of data collected through the CA 2012.

**12. DATA DISSEMINATION**

The first results were published in January 2013, regarding the number of agricultural holdings, UAA, the number of livestock by species and the number of owned two-axle tractors.

The final results of the CA 2012 were published in December 2013. Several thematic studies (special publications on UAA, machinery, viticulture, fruit growing, etc.), and a Vine atlas were published by the end of 2015. Final data are also available in the census database on the SORS website.<sup>2</sup>

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 9 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

**Statistical Office of the Republic of Serbia.** 2013. Census of Agriculture 2012. In: *Statistical Office of the Republic of Serbia* [online]. Belgrade, Republic of Serbia. [Cited 27 August 2019]. <http://popispoljoprivrede.stat.rs/?p=4763&lang=en>

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<sup>1</sup> Post-census survey.

<sup>2</sup> The census database is available at <http://data.stat.gov.rs/?caller=SDDB&languageCode=en-US>



## SERBIA – CENSUS OF AGRICULTURE 2012 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>631 552</b>	<b>5 346 597</b>
Civil persons	628 552	3 538 376
Juridical persons	3 000	1 808 221

UTILISED AGRICULTURAL AREA (UAA), BY LAND TENURE		
	Holdings	UAA (ha)
<b>Total holdings with UAA</b>	<b>621 445</b>	<b>3 437 423</b>
Legal ownership and owner-like possession	608 642	2 418 416
Rented from others	145 525	1 019 008

LAND FRAGMENTATION		
	Holdings	UAA (ha)
<b>Total holdings with UAA</b>	<b>621 445</b>	<b>3 437 423</b>
1 parcel	87 018	101 467
2–3 parcels	200 218	529 257
4–5 parcels	126 309	540 795
6–9 parcels	115 454	683 689
10 parcels and over	92 446	1 582 215

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>631 552</b>	<b>3 437 423</b>
Holdings without land	10 107	
Holdings with UAA	621 445	3 437 423
Less than 1 ha	174 567	91 837
1–2 ha	123 719	181 785
2–5 ha	182 489	596 052
5–10 ha	89 083	617 281
10–20 ha	32 313	435 499
20–30 ha	7 677	185 846
30–50 ha	5 352	203 666
50–100 ha	4 394	314 096
100 ha and over	1 851	811 362

LAND USE		
	Holdings	Area (ha)
<b>Total area of holdings</b>	<b>631 552</b>	<b>5 346 597</b>
Agricultural land	630 742	3 861 477
UAA	621 445	3 437 423
Arable land	519 446	2 513 154
Land temporarily fallow	17 560	22 036
Land under permanent crops	322 084	187 299
Permanent meadows and pastures	266 813	713 242
Kitchen garden	331 145	23 727
Unutilised agricultural area	153 976	424 054
Forest	337 804	1 023 036
Other land	607 670	462 084

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		
	Number	Area operated (ha)
<b>Total</b>	<b>628 552</b>	<b>2 825 068</b>
Male	518 016	2 463 235
Female	110 536	361 833

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Holdings
<b>Total engaged in agricultural activities on the holding</b>	<b>797 199</b>
Male	295 712
Female	501 487

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX AND AGE	
	Number
<b>Total</b>	<b>628 552</b>
Male	518 016
Female	110 536
Under 25 years	3 833
Male	3 388
Female	445
25–34 years	24 526
Male	22 026
Female	2 500
35–44 years	65 414
Male	57 750
Female	7 664
45–54 years	124 335
Male	107 996
Female	16 339
55–64 years	188 668
Male	158 203
Female	30 465
65 years and over	221 776
Male	168 653
Female	53 123

EMPLOYEES WORKING ON THE HOLDING	
	Number
<b>Total</b>	<b>28 064</b>
Male	21 115
Female	6 949
Civil persons	1 785
Male	1 521
Female	264
Juridical persons	26 279
Male	19 594
Female	6 685

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>497 841</b>	
Cattle	177 252	908 102
Sheep	154 972	1 736 440
Goats	62 930	231 837
Pigs/swine	355 052	3 407 318
Horses	10 095	16 910
Poultry (1 000 head)	413 792	26 711
Hens	410 330	25 794
Ducks	26 849	246
Geese	13 891	77
Turkeys	26 063	350
Other	20 011	244
Other animals	n.a.	
Rabbits and hares	9 966	47 022
Insects		
Bees (hives)	31 287	665 022

METHODS OF IRRIGATION		
	Holdings	Area irrigated (ha)
<b>Total holdings with irrigated land</b>	<b>71 947</b>	<b>99 773</b>
Surface	49 281	n.a.
Sprinkler	11 310	n.a.
Localized irrigation	20 903	n.a.

## 1. HISTORICAL OUTLINE

The first Agricultural Census<sup>1</sup> (AC) was conducted in the Slovak Republic in 2001, followed by a second one, carried out in 2010. The AC 2010, to which the metadata review and data presented here refer, was conducted in conjunction with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The agricultural census legislation included:

- Act No. 540/2001 Coll. on State Statistics, which is the basic Slovak law for the AC;
- Decree of the Statistical Office No. 416/2008 Coll. on the Program of Statistical Surveys 2009–2011, with reference to the FSS 2010; and
- the EU legislation<sup>2</sup> relevant for implementing the FSS 2010.

### **Institutional framework and international collaboration**

The Statistical Office of the Slovak Republic (SOSR) was the responsible body for the AC implementation. Project tasks were fulfilled by three working groups, the activity of which was coordinated and managed by the Department of Agricultural and Environment Statistics of the SOSR.

### **Census staff**

The total number of interviewers was 1 015. The working teams in each of the eight regional offices of the SOSR (involved also in field data collection) were led by a director and two supervisors.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 October 2010, for inventory items, such as livestock numbers.

### **Reference periods:**

- the 12 preceding months (from 1 November 2009 to 31 October 2010), for land use, labour force, other gainful activities, renewable energy, agricultural production methods, area irrigated at least once, etc.;
- the last three years (2008–2010), for rural development support and landscape features, average area irrigated.

## 4. ENUMERATION PERIOD

Data collection took place from November 2010 to February 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered the units engaged in agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding (farm), defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed in annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, as either its primary or secondary activity.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The Slovak Republic applied the following threshold for agricultural holdings: UAA of at least 1 ha; area of vineyards, orchards or nurseries of at least 0.5 ha; area of tobacco, hops, vegetables, flowers, melons, strawberries and areas under protective cover of at least 0.1 ha; number of livestock of at least one cattle, three pigs, five goats, five sheep or 100 head of poultry.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2010.

### **Frame**

The Statistical Register of the SOSR provided information on the registered units reporting agricultural activity to build the Register of Farms (RF). The RF was then reviewed, supplemented and updated with information from other available agriculture data sources, such as on orchards, vineyards, cattle, pigs, sheep, goats, organic farms, and applicants of the single area payment scheme (SAPS).

<sup>1</sup> The Farm Structure Census.

<sup>2</sup> (i) Regulation (EC) No. 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No. 571/88 and (ii) Commission Regulation (EC) No. 1200/2009 of 30 November 2009 implementing Regulation (EC) No. 1166/2008 of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods, as regards livestock unit coefficients and definitions of the characteristics.

**Complete and/or sample enumeration methods**

The AC 2010 and the SAPM were conducted using complete enumeration of the agricultural holdings.

**Sample design (if sampling was used)**

Not applicable.

**Data collection methods**

Questionnaires were sent by post to the registered agricultural holdings, well in advance of the survey date, and respondents were informed of the deadline for completing the questionnaire and returning it to the SOSR regional offices. Interviewers received questionnaires for non-registered units (households). The data collection for non-registered units was carried out by face-to-face interviews, while other holdings were enumerated using self-interviewing, by reporting to the regional SOSR through the post. Data collection methods included also telephone and e-mail. Data for both the AC and the SAPM were collected at the same time (using one questionnaire).

**Questionnaires**

One single questionnaire was used for data collection of the AC and SAPM items. The census questionnaire covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

New technology was used for the online dissemination of census results.

**10. DATA PROCESSING AND ARCHIVING**

Data entry was done by the SOSR regional offices using computer software and working in an Oracle environment. After the checking, editing and revision of data at regional offices, data files were created and saved in regional AC databases, from where they were incorporated into the databases of the SOSR. Nonresponse was followed up on by telephone. In case of item nonresponse, supplementary data from external sources or qualified estimates were used to handle missing data. Unit imputations were applied for 329 farms (1 percent of all farms). Final unit nonresponse rate was 2.1 percent. Item imputation was not performed because the missing data was re-surveyed during the data processing. Unit imputation was applied when, for the unit involved, there were relevant internal or external resources created for the reference period.

Data archiving is secured in compliance with the archiving policy of the SOSR. Data anonymization for Eurostat was secured by replacing the identification number by a randomly assigned sequence number.

**11. CENSUS DATA QUALITY**

The census data were compared with information from the FSS of previous years, and other statistical data. Close supervision, coordination and monitoring activities were undertaken during the field data collection operations by the regional SOSR offices; extensive quality checks were made once the census questionnaires were returned to those offices.

**12. DATA DISSEMINATION**

Preliminary results were published in October 2011. The final data were disseminated in April 2012 and are available on the SOSR's website. The final data contain the census results on surveyed characteristics, as well as the information on the typology of farms.

**13. DATA SOURCES**

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# SLOVAKIA – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>24 460</b>	<b>3 063 000</b>
Civil persons	22 190	379 720
An individual (sole holder holdings) <sup>2</sup>	22 190	379 720
Juridical persons (legal entities)	2 280	2 683 280

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>24 460</b>	<b>1 895 500</b>
Legal ownership and owner-like possession (owned land)	20 620	225 750
Rented from others (land rented)	6 570	1 669 750

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>24 460</b>	<b>1 895 500</b>
Holdings without UAA	740	
Holdings with UAA	23 720	1 895 500
Less than 2 ha	8 720	9 270
2–4.99 ha	6 290	19 120
5–9.99 ha	2 660	18 150
10–19.99 ha	1 630	22 860
20–29.99 ha	730	17 540
30–49.99 ha	700	26 650
50–99.99 ha	780	55 430
100 ha and over	2 210	1 726 490

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>24 460</b>	<b>3 063 000</b>
UAA	23 720	1 895 500
Arable land	19 120	1 343 510
Land temporarily fallow	1 310	31 570
Land under permanent crops	1 900	19 640
Permanent meadows and pastures	11 670	531 270
Kitchen garden	9 350	1 080
Other land	22 460	1 167 500
Wooded area	690	1 098 500
Unutilised agricultural land and other areas	22 430	69 000

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>24 460</b>	<b>1 895 500</b>
Male	20 290	1 735 260
Female	4 170	160 240

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>		Number
<b>Total engaged in agricultural activities on the holding</b>		<b>23 880</b>
Male		9 860
Female		14 010

LABOUR FORCE OF THE HOLDING		Number
<b>Total</b>		<b>90 960</b>
Male		60 830
Female		30 140
Family labour force		46 060
Male		28 160
Female		17 910
Regular non-family labour force		44 900
Male		32 670
Female		12 230

MANAGERS BY SEX AND AGE <sup>3</sup>		Number
<b>Total</b>		<b>24 460</b>
Male		20 290
Female		4 170
Less than 35 years		1 730
Male		1 450
Female		280
35–44 years		3 640
Male		3 070
Female		580
45–54 years		6 610
Male		5 580
Female		1 030
55–64 years		6 920
Male		5 730
Female		1 190
65 years and over		5 560
Male		4 470
Female		1 090

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>18 390</b>	
Cattle	9 310	464 920
Sheep	3 150	394 490
Goats	1 350	10 970
Pigs/swine	10 780	588 090
Equines (Equidae)	1 570	6 910
Poultry (1 000 head)	n.a.	n.a.
Broilers	460	6 570
Laying hens	10 180	5 850
Others	2 130	240
Other animals	n.a.	
Rabbits (breeding females)	1 040	3 900
Other	1 200	
Insects		
Bees (hives)	460	10 770

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>630</b>	<b>108 990</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>370</b>	<b>14 840</b>
Surface	170	n.a.
Sprinkler	180	n.a.
Localized irrigation (drop irrigation)	60	n.a.

<sup>1</sup> Data source – Eurostat database, available at:

<https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

Two independent censuses of agriculture were conducted by complete enumeration in Slovenia before the year 2000: the first was in 1930 and the second in 1960. In 1969, a sample agricultural census (AC) was carried out. In 1971, 1981 and 1991, censuses of agricultural holdings were conducted as a component of population censuses. The first agricultural census to be carried out in the independent Republic of Slovenia took place in 2000; the second and the most recent one, to which the metadata review and data presented here refer, was conducted in 2010.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The agricultural census legislation consisted of:

- the National Statistics Act (OJ RS No. 45/95 and No. 9/01);
- the National Programmes of Statistical Surveys (OJ RS No. 114/08, 35/09 and 51/09; No. 93/09, 19/10, 50/10 and 72/10), which addressed all statistical surveys to be conducted in 2009 and 2010; and
- Regulation (EC) No. 1166/2008.

### *Institutional framework and international collaboration*

The Statistical Office of the Republic of Slovenia (SURS) is the census-executing institution with the authority for collecting, compiling and publishing statistical information.

No special Census Committee was formed for the AC 2010; however, the Agricultural, Forestry and Fishery Statistics Advisory Committee (ASC) performed such a role (various working groups were established).

### *Census staff*

For field data collection, an external contractor was hired. It undertook the activities under methodological guidance from SURS, ensuring the required quality standards. All subsequent activities were carried out by the SURS staff.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 June 2010, for livestock, total land area, UAA, etc.

### *Reference periods:*

- the 12 months preceding the reference day (from 1 June 2009 to 31 May 2010), for labour force items, machinery used, etc.
- the period of three years preceding the reference day, for data on rural development measures.

## 4. ENUMERATION PERIOD

The enumeration was conducted from 1 June to 15 July 2010.<sup>1</sup>

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and animal production).

The **statistical unit** was the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities within the economic territory of the EU, as either its primary or secondary activity.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

In line with EU legislation, Slovenia applied the following thresholds for the AC 2010:

- at least 1 ha of UAA, or less than 1 ha of UAA, but:
- at least 0.1 ha of UAA and 0.9 ha of forest;
- at least 0.3 ha of vineyards and/or orchards;
- two or more livestock units (LSUs);
- 0.15 to 0.3 ha of vineyards/orchards and one or two LSUs;
- more than 50 beehives; or
- the holdings are market producers of vegetables, herbs, strawberries, mushrooms, flowers or ornamental plants.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the AC. Along with field data collection, administrative data were used as a source of census data.

<sup>1</sup> The fieldwork data collection finished on 15 July; however, the telephone interviewing of some agricultural holdings continued until 25 July 2010, the purpose being to check the correctness of entered data and to resolve nonresponse by agricultural enterprises.

**Frame**

The list of agricultural holdings was fully based on the Statistical Farm Register (SFR).

**Complete and/or sample enumeration methods.**

The AC 2010 was conducted on a complete enumeration basis. The SAPM, conducted together with the AC, was carried out using sample enumeration.

**Sample design (if sampling was used)**

For the SAPM, a stratified sampling with systematic random selection of units was used. The selected sample covered 10 percent of total agricultural holdings (9 863 units).

**Data collection methods**

The AC 2010 and the SAPM were conducted using the CAPI method in combination with the use of administrative data sources kept by the Ministry of Agriculture, Forestry and Food (MAFF). Also, CATI was used for some agricultural holdings used (approximately 0.6 percent of units) to perform data quality checks.

**Questionnaire(s)**

One consolidated electronic questionnaire was used to collect information for both the AC 2010 and the SAPM. The census questionnaire covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

CAPI was used for field data collection; CATI was used for data quality checks. Some census data were collected directly from administrative registers. Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

SAS was used for data editing and estimation of sampling errors. The imputations were applied using the following methods: logical correction, hot deck, structural hot deck and average values.

**11. CENSUS DATA QUALITY**

The AC 2010 results were reconciled with all the available data sources.<sup>2</sup> If data were inconsistent, they were examined and, if necessary they were revised. Records from some interviews were checked using CATI.

**12. DATA DISSEMINATION**

The census results were disseminated gradually. The first preliminary census results were released in September 2010, followed by the dissemination of census information in March and September 2011. The final AC results, including the detailed data in the web database, were disseminated in March 2012. The dissemination of the AC data was done mainly through electronic publications and the Internet portal.

In addition, researchers may have access to the AC 2010 micro data under specific conditions. Instructions concerning access to and use of statistically protected microdata are available on the SURS website.

**13. DATA SOURCES**

**Eurostat.** 2019a. *Archive: Agricultural census in Slovenia*. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 28 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Slovenia](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Slovenia)

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**Statistical Office of the Republic of Slovenia (SURS).** Environment and natural resources. In: *SURS* [online]. Ljubljana, Republic of Slovenia. [Cited 12 September 2019]. [https://pxweb.stat.si/SiStatDb/pxweb/en/30\\_Okolje/Data%20sources](https://pxweb.stat.si/SiStatDb/pxweb/en/30_Okolje/Data%20sources)

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<sup>2</sup> Administrative data, previous surveys and other surveys conducted by SURS, and other sources at micro and macro data level.

SLOVENIA – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>74 650</b>	<b>905 990</b>
Civil persons	74 430	875 950
An individual (sole holder holdings) <sup>2</sup>	74 430	875 950
Juridical persons (legal entities)	220	30 040

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>74 650</b>	<b>482 650</b>
Legal ownership and owner-like possession (owned land)	73 420	345 260
Rented from others (land rented)	21 960	129 170
Other form of tenure (shared farming or other modes)	1 640	8 220

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>74 650</b>	<b>482 650</b>
Holdings without UAA	190	
Holdings with UAA	74 460	482 650
Less than 2 ha	20 280	21 900
2–4.99 ha	24 920	82 460
5–9.99 ha	17 440	122 320
10–19.99 ha	8 350	113 120
20–29.99 ha	2 020	48 480
30–49.99 ha	970	36 150
50–99.99 ha	380	25 350
100 ha and over	100	32 880

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>74 650</b>	<b>905 990</b>
UAA	74 460	482 650
Arable land	58 660	169 080
Land temporarily fallow	350	350
Land under permanent crops	39 400	26 800
Permanent meadows and pastures	61 960	285 710
Kitchen garden	41 470	1 060
Other land	74 650	423 340
Wooded area	62 830	373 630
Unutilised agricultural land and other areas	74 650	49 710

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>74 650</b>	<b>482 650</b>
Male	54 310	386 920
Female	20 340	95 740

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>134 030</b>
Male	58 760
Female	75 270

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>208 490</b>
Male	113 020
Female	95 470
Family labour force	205 240
Male	110 910
Female	94 330
Regular non-family labour force	3 250
Male	2 120
Female	1 140

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>74 650</b>
Male	54 310
Female	20 340
Less than 35 years	3 240
Male	2 690
Female	550
35–44 years	10 440
Male	8 050
Female	2 390
45–54 years	18 710
Male	14 600
Female	4 110
55–64 years	19 560
Male	14 270
Female	5 290
65 years and over	22 700
Male	14 700
Female	8 000

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>59 220</b>	
Cattle	36 120	472 330
Sheep	6 180	137 740
Goats	4 210	34 860
Pigs/swine	26 440	382 030
Equines (Equidae)	5 950	22 670
Poultry (1 000 head)	n.a.	n.a.
Broilers	2 910	2 800
Laying hens	34 840	1 500
Others	19 290	600
Other animals	n.a.	
Rabbits (breeding females)	5 910	17 370
Other	380	
Insects		
Bees (hives)	2 390	59 860

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>1 620</b>	<b>5 210</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>820</b>	<b>1 260</b>
Surface	120	n.a.
Sprinkler	240	n.a.
Localized irrigation (drop irrigation)	390	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The first agricultural census (AC) in Spain was carried out in 1962 and, since then, ACs were conducted in 1972, 1982, 1989, 1999 and 2009. The AC 2009, to which the metadata review and data presented here refer, was conducted together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The agricultural census legislation consisted of:

- Laws No. 4/1990 and 13/1996, according to which statistics forming part of the National Statistical Plan (NSP) are mandatory;
- the NSP 2009–2012, adopted by Royal Decree (RD) 1663/2008, which includes mandatory operations of the AC 2009 and the SAPM.
- the EU legislation relevant for implementing the FSS 2010.

### **Institutional framework and international collaboration**

The AC 2009 and the SAPM were both planned, supervised and coordinated by the National Statistics Institute (INE). The INE signed a partnership agreement with the Basque Autonomous Community, whereby its statistics institute (EUSTAT) conducted the fieldwork and completed all of the questionnaires in its area. For certain tasks,<sup>1</sup> the INE received the assistance of external companies engaged officially through the relevant public competition.

### **Census staff**

An editing team was hired to edit data centrally through the INE Agricultural Unit.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 30 September 2009, for inventory items, such as livestock numbers.

### **Reference periods:**

- the agricultural year 2009 (from 1 October 2008 to 30 September 2009), for characteristics relating to land and labour force, etc.
- the past three years (from 1 January 2007 to 31 December 2009), for rural development support and landscape characteristics.

## 4. ENUMERATION PERIOD

Enumeration took place from October 2009 to April 2010 in three phases (see section 8, “Data collection methods”).

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).<sup>2</sup>

The **statistical unit** was the agricultural holding, defined both technically and economically, which has a single management and which undertakes agricultural activities listed in annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, as either its primary or secondary activity.

## 6. GEOGRAPHIC COVERAGE

The AC 2009 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following thresholds for agricultural holdings were applied in the AC 2009 (at least): (i) 1 ha of UAA; (ii) 0.2 ha of UAA used for fresh vegetables, melons and strawberries, flowers and ornamental plants (outdoors or under low protective cover), irrigated fruit and berry plantations and citrus plantations, nurseries, or under glass crops; (iii) 0.1 ha of UAA used for under-glass fresh vegetables, melons and strawberries, under-glass flowers and ornamental plants; (iv) 0.5 ha of UAA used for tobacco, hops or cotton; or (v) one LSU and a total SO equal to or above 0.75 economic size of holdings (ES).

## 8. METHODOLOGY

### **Methodological modality for conducting the census.**

The classical approach was used. Some census data were collected directly from administrative registers.

<sup>1</sup> Specifically, the following activities were outsourced: agricultural census advertising campaign; help in preparing training tools (manuals, educational video for interviewers and other training elements); publishing and posting of questionnaires and reminder letters to farm holders for phase 1; tasks relating to the collection, technological and telephone support for phases 1 and 2; processes of scanning and recording the questionnaires; support for transporting census equipment; designing an application to centralize data editing of the census; designing a data warehouse system to disseminate the AC results.

<sup>2</sup> Purely forestry enterprises were excluded from the census, if they did not meet the above conditions.



**Frame**

The frame was obtained from the INE List Register or Census Directory. The Register lists all the reporting units considered to be potential agricultural holdings, including their relevant contact information. The Register was based on the use and integration of data from three key sources: (i) the Integrated Administrative Control System Register; the (ii) Spanish Agency for Tax Administration (AEAT); and (iii) other INE statistical sources.

**Complete and/or sample enumeration methods**

The AC 2009 was conducted using the complete enumeration. The SAPM was carried out as a sample survey.

**Sample design (if sampling was used)**

The SAPM 2009 was carried out using stratified random sampling.

**Data collection methods.** Data from the AC 2009 were collected and entered in three specific phases over a seven-month period:

- Postal phase – from October to December 2009. Questionnaires were mailed for self-completion to all farm holders.
- CATI phase – from January to March 2010. Data collection was done through telephone calls (CATI) to holders who had yet to send the completed questionnaire as required in phase 1; And
- PAPI phase – from January to April 2010, to follow up with holders that had not yet responded and to collect data for the SAPM.

**Questionnaire(s)**

Three questionnaires were used for data collection: (i) for the AC (CA-09); (ii) for the SAPM and OGA (MP-09); and (iii) for supplementary information on farm labour (MO-09). The AC 2010 covered 15 out of 16 items recommended in the WCA 2010.<sup>3</sup>

**9. USE OF TECHNOLOGY**

New technology was used in the AC 2009 for the following purposes: (i) to collect some census data directly from administrative registers, to reduce the response burden; (ii) for data capture using CAWI and CATI; and (iii) for the online dissemination of census results.

**10. DATA PROCESSING AND ARCHIVING**

The census data collected using the PAPI method and new technology (CATI and CASI/CAWI) were consolidated into a combined database. Following the manual correction of errors and prior to obtaining the data sets with the final data, all questionnaires underwent a process of automatic data imputation (AIP). The AIP consists of edits to identify the characteristics failing an edit and requiring imputation, as well as the imputations themselves.

**11. CENSUS DATA QUALITY**

More than 170 controls were incorporated into the data entry and processing applications. The microdata and macrodata were analysed thoroughly, and compared to the available agricultural statistics.

**12. DATA DISSEMINATION**

The first final AC results were published on the INE website in July 2011. In October 2011, the AC Data Warehouse system became available. The system provides information processing power, greater flexibility and faster access to information (including custom queries). The SAPM data were published on the INE website in January 2012.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in Spain. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 28 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Spain](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Spain)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

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Website: [www.ine.es/welcoing.htm](http://www.ine.es/welcoing.htm)

<sup>3</sup> Data on "Main purpose of production of the holding" (item 06) were not collected in the AC 2009.

SPAIN – AGRICULTURAL CENSUS 2009 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>989 800</b>	<b>30 614 170</b>
Civil persons	929 690	19 511 240
An individual (sole holder holdings) <sup>2</sup>	929 690	19 511 240
Juridical persons (legal entities)	60 100	11 102 930

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>989 800</b>	<b>23 752 690</b>
Legal ownership and owner-like possession (owned land)	855 890	14 486 910
Rented from others (land rented)	210 110	7 545 110
Other form of tenure (shared farming or other modes)	92 540	1 720 670

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>989 800</b>	<b>23 752 690</b>
Holdings without UAA	22 500	
Holdings with UAA	967 290	23 752 690
Less than 2 ha	270 280	297 220
2–4.99 ha	232 800	736 800
5–9.99 ha	141 850	995 440
10–19.99 ha	110 960	1 558 920
20–29.99 ha	53 010	1 289 320
30–49.99 ha	54 730	2 101 770
50–99.99 ha	52 470	3 683 770
100 ha and over	51 190	13 089 450

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>989 800</b>	<b>30 614 170</b>
UAA	967 290	23 752 690
Arable land	463 420	11 286 010
Land temporarily fallow	203 610	2 663 960
Land under permanent crops	620 200	4 086 240
Permanent meadows and pastures	264 180	8 377 390
Kitchen garden	138 580	3 050
Other land	315 310	6 861 480
Wooded area	181 280	4 643 410
Unutilised agricultural land and other areas	202 650	2 218 070

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>989 800</b>	<b>23 752 690</b>
Male	775 420	20 330 510
Female	214 380	3 422 180

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>1 089 900</b>
Male	615 180
Female	474 720

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>2 227 020</b>
Male	1 464 040
Female	762 980
Family labour force	1 951 760
Male	1 236 630
Female	715 130
Regular non-family labour force	275 260
Male	227 410
Female	47 850

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>989 800</b>
Male	775 420
Female	214 380
Less than 35 years	52 790
Male	43 170
Female	9 620
35–44 years	152 440
Male	121 920
Female	30 520
45–54 years	237 040
Male	186 280
Female	50 760
55–64 years	253 180
Male	197 800
Female	55 380
65 years and over	294 350
Male	226 250
Female	68 100

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>245 160</b>	
Cattle	111 840	5 840 800
Sheep	68 980	16 574 220
Goats	29 860	2 363 520
Pigs/swine	69 770	24 712 060
Equines (Equidae)	51 030	317 870
Poultry (1 000 head)	n.a.	n.a.
Broilers	36 570	118 850
Laying hens	90 880	59 480
Others	10 040	22 580
Other animals	n.a.	
Rabbits (breeding females)	24 950	1 088 720
Other	2 930	
Insects		
Bees (hives)	8 100	631 480

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>414 850</b>	<b>3 587 770</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>386 440</b>	<b>3 044 710</b>
Surface	161 890	n.a.
Sprinkler	64 320	n.a.
Localized irrigation (drop irrigation)	800	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

The Swedish accession to the EU in 1995 created the need to adapt national agricultural statistics to the EU legislation. Until 2001, Sweden compiled FSSs annually, switching every year between EU and national legislation. The present metadata review and data refer to the 2010 Agricultural Census (AC), conducted together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis of the AC 2010 includes:

- the Official Statistics Act (SFS 2001:99), and the Official Statistics Ordinance (SFS 2001:100) of 15 March 2001, with reference to agricultural statistics in Sweden, which appoints the Swedish Board of Agriculture (SBA) as the sole responsible authority for all national agricultural statistics.
- Provision SJVFS 2010:16 of the SBA, which took effect on 1 May 2010, stipulating that the SBA is responsible for organizing the AC 2010;
- Act 24, 8 § of the Swedish confidentiality law on statistics (SFS 2009:400); or
- the EU legislation relevant for implementing the FSS 2010.

### **Institutional framework and international collaboration**

Starting in March 2001, the SBA became the sole authority responsible for organizing and producing all agricultural statistics in Sweden. The AC project team was located in the SBA.

### **Census staff**

In total, 27 persons were involved in the survey team. No field personnel were involved in census data collection.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 10 June 2010, for livestock, buildings, machinery and other inventory items.

### **Reference periods:**

- the 12 preceding months (from 1 June 2009 to 31 May 2010), for land and crops, farm labour force, production methods, irrigation, etc.; and
- the last 3 years (2008–2010), for rural development support.

## 4. ENUMERATION PERIOD

Enumeration was carried out from June to October 2010 (see section 8, "Data collection methods").

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock products).

The **statistical unit** was the farm/agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes the agricultural activities listed in annex I to the European Parliament and Council Regulation (EC) No. 1166/2008 within the economic territory of the EU, as either its primary or secondary activity.

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The census covered all agricultural holdings in Sweden that on 10 June 2010 met one or more of the following criteria: (i) more than 2 ha of arable land; (ii) more than 5 ha of agricultural land; (iii) at least 200 m<sup>2</sup> are under glass; (iv) at least 2 500 m<sup>2</sup> of outdoor horticultural cultivation; (v) at least 10 head of cattle, ten sows, 50 pigs, 20 ewes or 1 000 head of poultry.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The AC 2010 data were collected using traditional field data collection (classical approach), along with an extensive use of administrative registers as a source of census data.

### **Frame**

The frame for the AC 2010 was the LBR. The frame consisted of holdings from the FSS 2007, updated with information from the Livestock Survey for 2008 and 2009, the Holdings Applying for Subsidies 2008, and the 2009 IACS.<sup>1</sup>

<sup>1</sup> The frame was also updated with information from the Poultry, Sheep, and Pig Registers. In addition, a special Register Survey was sent out to 6 000 holdings that were found in the 2007 FSS population but that could not be found in the IACS system in 2009.

**Complete and/or sample enumeration methods**

The AC 2010 was carried out as a complete enumeration of all agricultural holdings in the “frame”. Sampling was used for the OGA section, in accordance with the EU Regulation (EC) No. 1166/2008. The SAPM was also conducted using sampling.

**Sample design**

The SAPM and OGA used the same sample, based on a stratified random sample. The sampling frame was divided into 66 strata. The variables for stratification were divided into: (i) NUTS II regions; (ii) area of agricultural land; (iii) number of animals of different kinds; and (iv) new holdings.

**Data collection methods**

Different data collection channels were used during the AC: self-interviewing using printed questionnaires (mail-out/mail-back) and web questionnaires (CAWI), telephone interviewing (CATI)<sup>2</sup> and administrative registers. In addition, modelling was used to estimate the volume of water used for irrigation. Five administrative data sources were used for the AC, as sources of census data and for validation purposes: the IACS, the Bovine Register, the Organic Farming Register, the Register on Genetically Modified Crops, and Register of Support for Rural Development.

**Questionnaire(s)**

In total, four questionnaires were designed to collect the data requested; three questionnaires covering the AC variables and one covering the SAPM variables (SP). Two of the AC questionnaires were adopted for natural persons (one including OGA variables (SFK) and the other without OGA (SFE)), while the third one was designed for legal persons (SJ).

The questionnaires covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Extensive use of administrative registers, of CAWI and CATI for census data collection, of optical scanning for data capture of printed questionnaires, as well as of online dissemination, were applied in the AC 2010.

**10. DATA PROCESSING AND ARCHIVING**

Optical scanning was used for data entry. An IT system was designed for the identification of all errors occurring when a questionnaire contained information that did not fulfil the validation criteria. Various methods were used to solve problems associated with missing data. The instructions, that were in force for the entire survey process, generally permitted the data to be corrected or completed by the staff directly on personal computers. The software used in this part of the process was SAS and Microsoft Excel.

**11. CENSUS DATA QUALITY**

The calculated national statistical results for 2010 were compared with corresponding results from the ACs/FSSs of earlier years at the macro level. Some micro level results were also compared with data from earlier years.

**12. DATA DISSEMINATION**

The first AC 2010 results were published in October 2010 and the final results in June 2011. The census results were disseminated in a series of statistical reports on the SBA website, and on the Statistics Sweden website. The data from the AC 2010 were also published through the online Statistical Database of the SBA.

**13. DATA SOURCES**

**Eurostat.** 2019a. Archive: Agricultural census in Sweden. In: *European Commission: Eurostat* [online] Luxembourg. [Cited 28 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_Sweden](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_Sweden)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Statistics Sweden.** 2011. *Farm Structure Survey 2009/2010 and Survey on agricultural production methods 2009/2010*. National Methodological Report (also available at [http://ec.europa.eu/eurostat/documents/749240/749313/SE\\_NMR\\_FSS\\_2010.pdf/79abcd91-5757-4a72-8aea-5d0f8aae11cb](http://ec.europa.eu/eurostat/documents/749240/749313/SE_NMR_FSS_2010.pdf/79abcd91-5757-4a72-8aea-5d0f8aae11cb)).

**14. CONTACT**

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Website: Statistics Sweden – [www.scb.se](http://www.scb.se)

Website: Swedish Board of Agriculture – [www.jordbruksverket.se](http://www.jordbruksverket.se)

<sup>2</sup> Telephone interviews were used in two different cases: to complete partly answered questionnaires and to reduce the nonresponse. The highest nonresponse rate was on the SP questionnaire, which included all the SAPM variables.

SWEDEN – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>71 090</b>	<b>6 759 760</b>
Civil persons	65 850	5 535 920
An individual (sole holder holdings) <sup>2</sup>	65 850	5 535 920
Juridical persons (legal entities)	5 240	1 223 850

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>71 090</b>	<b>3 066 320</b>
Legal ownership and owner-like possession (owned land)	64 300	1 748 840
Rented from others (land rented)	32 970	1 317 480

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>71 090</b>	<b>3 066 320</b>
Holdings without UAA	740	
Holdings with UAA	70 360	3 066 320
Less than 2 ha	560	340
2–4.99 ha	7 630	29 310
5–9.99 ha	15 820	112 930
10–19.99 ha	14 180	202 680
20–29.99 ha	7 140	175 130
30–49.99 ha	8 030	313 200
50–99.99 ha	9 070	643 730
100 ha and over	7 930	1 589 000

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>71 090</b>	<b>6 759 760</b>
UAA	70 360	3 066 320
Arable land	68 440	2 611 470
Land temporarily fallow	20 320	180 630
Land under permanent crops	780	2 940
Permanent meadows and pastures	37 950	451 910
Wooded area	47 160	3 687 550

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>71 090</b>	<b>3 066 320</b>
Male	60 140	2 832 750
Female	10 950	233 560

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>		Number
<b>Total engaged in agricultural activities on the holding</b>		<b>53 980</b>
Male		20 610
Female		33 370

LABOUR FORCE OF THE HOLDING		Number
<b>Total</b>		<b>141 530</b>
Male		92 000
Female		49 530
Family labour force		119 830
Male		76 330
Female		43 510
Regular non-family labour force		21 700
Male		15 670
Female		6 030

MANAGERS BY SEX AND AGE <sup>3</sup>		Number
<b>Total</b>		<b>71 090</b>
Male		60 140
Female		10 950
Less than 35 years		3 380
Male		2 690
Female		690
35–44 years		10 530
Male		8 590
Female		1 940
45–54 years		18 610
Male		15 440
Female		3 160
55–64 years		20 390
Male		17 760
Female		2 630
65 years and over		18 190
Male		15 650
Female		2 530

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>40 360</b>	
Cattle	21 590	1 536 660
Sheep	8 660	564 920
Pigs/swine	1 700	1 519 870
Equines (Equidae)	17 510	117 030
Poultry (1 000 head)	n.a.	n.a.
Broilers	180	6 450
Laying hens	3 770	7 710
Others	100	130

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>3 450</b>	<b>164 230</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>1 970</b>	<b>63 250</b>
Surface	210	n.a.
Sprinkler	3 230	n.a.
Localized irrigation (drop irrigation)	320	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.

## 1. HISTORICAL OUTLINE

Switzerland has a long tradition of conducting censuses in the area of agriculture. From 1955, the agricultural census, conducted every five years, was the main source of information. A turning point came in 1966, with the introduction of farm surveys based on administrative sources. Switzerland has a yearly census for the main agricultural topics like farmland, livestock and labour force. The main data source is the declaration for direct payments for farmers. The 2010 Agricultural Census (AC) was carried out together with a thematic survey (on holdings' OGA, the structure of the labour force and characteristics related to agricultural production methods) and the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The legal basis of the AC 2010 includes the following:

- the Federal Statistics Act (FStatA) of 9 October 1992 with Regulations;
- Federal Law of 29 April 1998 on Agriculture (Agriculture Act, AgricA);
- the Federal Act on Data Protection (FADP) of 19 June 1992;
- the Ordinance on the Evaluation and Sustainability of Agriculture of 7 December 1998;
- the Ordinance on Agricultural Terminology and Recognition of Types of Farming;
- the Ordinance on Information Systems in the Field of Agriculture of 23 October 2013; and
- the EU legislation relevant for implementing the FSS 2010

### *Institutional framework and international collaboration*

The census is a joint effort of the Federal Office for Agriculture (FOAG) and the Federal Statistical Office (FSO). The FSO and the cantonal offices for agriculture made a key contribution by making their administrative data sources available for census purposes. Throughout the survey, the FSO received assistance from the federal Statistical Support Group for the agricultural and food sectors, which is composed of representatives from: (i) research stakeholders; (ii) cantonal coordinators; (iii) the Federal Office for Agriculture; (iv) the Federal Office for the Environment; and (v) the Federal Food Safety and Veterinary Office.

### *Census staff*

For the logistics involved in the thematic survey conducted along with the AC, a production team was established (ten employees for six months) to provide information, process and check the data and carry out reminders by telephone.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 4 May 2010, for land, livestock, labour force, etc.

### *Reference periods:*

- the calendar year 2010, for management of the holding, structure of labour force, other gainful activities, renewable energies, irrigation, farm manure, pasture grazing, housing systems, etc.;
- winter 2009/2010, for items related to agricultural production methods.

## 4. ENUMERATION PERIOD

For the AC 2010, data on the farmer's declarations for direct payments were due in May 2010. The questionnaires for farmers that did not receive direct payments were sent out by post by the end of April 2010. The deadline for responding was the end of May 2010. Additional questionnaires for the sample survey on the SAPM, OGA and detailed information on the labour force were sent in October 2010. The information was due by the end of November 2010.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding, defined as "an enterprise that: (i) is dedicated to growing crops or keeping livestock, or both; (ii) consists of one or several production units; (iii) is legally, economically, organizationally and financially independent; (iv) is independent of other holdings; (v) has its own operating income; and (vi) is operated all year round". It should also reach or exceed at least a certain size, according to the thresholds defined in section 7 below.

## 6. GEOGRAPHIC COVERAGE

The entire country was covered.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The AC 2010 covered the agricultural holdings that reached at least one of the following thresholds:

- 1 ha of UAA;
- 0.3 ha of permanent crops;
- 0.1 ha of greenhouses;
- eight breeding sows or 80 fattening pigs, or 300 head of poultry of any type.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The AC 2010 consisted of:

- i. data collection based on administrative registers, for the agricultural holdings registered in the Agricultural Policy Information System (SIPA); and
- ii. traditional field data collection using census questionnaires, for holdings not registered in the SIPA.

A thematic survey (on the holdings' OGA, the structure of the labour force and the characteristics related to agricultural production methods) were conducted along with the AC.

### **Frame**

The population of the AC 2010 essentially comprised the holdings receiving subsidies (direct payments), which were approximately 58 000 holdings, and an additional 1 000 holdings that did not receive subsidies or that were not registered in the SIPA (mainly horticultural holdings).

### **Complete and/or sample enumeration methods**

The AC 2010 was based on complete enumeration of holdings. The thematic survey was based on sample data collection.

**Sample design (if sampling was used).** The thematic survey used a stratified random sampling.

### **Data collection methods**

The AC 2010 data were collected using administrative registers as a source of census data and the field data collection through: (i) paper questionnaires sent by post (mail-out/mail-back) and (ii) Internet-based questionnaires (CAWI).

### **Questionnaire(s)**

Different questionnaires/administrative forms were used for different groups of farms. Questionnaires were sent to the holdings not receiving direct payments. A questionnaire for the thematic survey (on OGA, labour force and agricultural production methods) was used for the holdings in the sample.

The AC covered all 16 core items recommended in the WCA 2010.

## 9. USE OF TECHNOLOGY

The new technology was used in the AC 2010 for: (i) field data collection (using CAWI); (ii) use of administrative registers as a source of census data; (iii) optical scanning of paper questionnaires; and (iv) online dissemination to provide access to census results.

## 10. DATA PROCESSING AND ARCHIVING

The paper census questionnaires were scanned using ICR. In addition, farmers were also offered an electronic application (eSurvey), allowing them to complete the questionnaire online.<sup>1</sup> All data collected were imported into a database to which the project production team had access, so that they could view the content of each questionnaire and contact the holdings concerned to request additional information if necessary in the event of inconsistency, error or missing information.

## 11. CENSUS DATA QUALITY

Paper questionnaires were checked visually<sup>2</sup> before scanning in order to correct the text and illegible figures. The online questionnaire incorporated checks on, for example, maximum values and other elements of control. For quality control, priority was given to direct contact with the holdings.

## 12. DATA DISSEMINATION

Data were published on the website of the Swiss Federal Statistical Office in June, 2012.

## 13. DATA SOURCES

**Eurostat.** 2019. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**Swiss Federal Statistical Office (FSO).** 2012. *Farm Structure Survey 2010, Survey on agricultural production methods 2010 National Methodological Report*. Zurich, Switzerland. (also available at [https://ec.europa.eu/eurostat/documents/749240/749313/CH\\_NMR\\_FSS\\_2010.pdf/61e88ad7-311c-4191-95c0-2b7ce8461f01](https://ec.europa.eu/eurostat/documents/749240/749313/CH_NMR_FSS_2010.pdf/61e88ad7-311c-4191-95c0-2b7ce8461f01)).

## 14. CONTACT

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<sup>1</sup> With 18 percent of respondents completing the questionnaire electronically, this initial experience was considered a resounding success.

<sup>2</sup> The characteristics collected as primary statistics during the AC 2010 were subjected to plausibility check at the micro record level.

SWITZERLAND – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>59 070</b>	<b>1 163 190</b>
Civil persons	52 990	1 037 390
An individual (sole holder holdings) <sup>2</sup>	52 190	990 170
Two or more individuals (group holdings)	800	47 220
Juridical persons (legal entities)	6 070	127 290

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>59 070</b>	<b>1 047 800</b>
Legal ownership and owner-like possession (owned land)	52 260	537 160
Rented from others (land rented)	47 810	494 380
Other form of tenure (shared farming or other modes)	3 700	16 330

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>59 070</b>	<b>1 047 800</b>
Holdings without UAA	1 340	
Holdings with UAA	57 730	1 047 800
Less than 2 ha	3 840	3 980
2–4.99 ha	4 880	17 230
5–9.99 ha	9 330	70 570
10–19.99 ha	19 350	286 320
20–29.99 ha	11 400	278 000
30–49.99 ha	6 980	259 710
50–99.99 ha	1 830	115 320
100 ha and over	120	16 670

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>59 070</b>	<b>1 163 190</b>
UAA	57 720	1 047 800
Arable land	31 800	405 340
Land temporarily fallow	2 460	2 390
Land under permanent crops	9 740	22 630
Permanent meadows and pastures	54 890	619 650
Kitchen garden	3 890	180
Other land	39 480	115 390
Wooded area	39 210	114 820
Unutilised agricultural land and other areas	960	570

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>59 070</b>	<b>1 047 800</b>
Male	55 250	1 011 710
Female	3 820	36 160

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>69 350</b>
Male	24 570
Female	44 780

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>166 370</b>
Male	103 450
Female	62 930
Family labour force	121 900
Male	73 320
Female	48 580
Regular non-family labour force	44 470
Male	30 130
Female	14 350

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>59 070</b>
Male	55 250
Female	3 820
Less than 35 years	4 650
Male	4 380
Female	280
35–44 years	14 260
Male	13 430
Female	830
45–54 years	20 440
Male	19 290
Female	1 160
55–64 years	16 230
Male	15 010
Female	1 210
65 years and over	3 490
Male	3 150
Female	340

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>50 990</b>	
Cattle	41 100	1 591 750
Sheep	9 780	434 080
Goats	6 980	86 990
Pigs/swine	8 850	1 589 000
Equines (Equidae)	12 230	82 520
Poultry (1 000 head)	n.a.	n.a.
Broilers	960	5 580
Laying hens	12 750	3 360
Other	1 790	90
Other animals	n.a.	
Rabbits (breeding females)	3 280	100 110
Other	1 110	
Insects		
Bees (hives)	1 160	16 940

METHODS OF IRRIGATION		
	Holdings	Irrigable area (ha)
<b>Total holdings with irrigable area</b>	<b>8 030</b>	<b>34 520</b>
<b>Holdings with irrigated area<sup>5</sup></b>	<b>8 030</b>	<b>34 520</b>
Surface	770	n.a.
Sprinkler	8 020	n.a.
Localized irrigation (drop irrigation)	1 600	n.a.

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.



## 1. HISTORICAL OUTLINE

A census of agriculture (CA) is conducted in the United Kingdom of Great Britain and Northern Ireland (UK) since 1866. The UK has participated in the ten-yearly rounds of the WCA Programme since 1930, with a selected year. A CA is carried out once every ten years, 2010 being the most recent. The metadata review and data presented here refer to the CA 2010, carried out together with the SAPM.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

- In England, the legal basis for the collection of agricultural statistical data is the Agricultural Statistics Act 1979 (as amended by the Agriculture (Amendment) Act 1984);<sup>1</sup>
- in Scotland, the Agricultural Act 1947 (“the 1947 Act”) authorizes the Scottish Government to collect statistics on Scottish agriculture from agricultural holdings;<sup>2</sup>
- in Wales, the legal basis for the collection of agricultural statistics data is the Agricultural Statistics Act 1979, as amended by the Agriculture (Amendment) Act 1984;<sup>3</sup>
- In Northern Ireland, the Agricultural Statistics Order 2004 authorizes the Department of Agriculture and Rural Development (DARD) to demand response to a specific list of questions that encompasses those asked in the Census;<sup>4</sup> and
- the related EU legislation for implementing the CA 2010, or FSS.

### *Institutional framework and international collaboration*

In the UK, collection of statistics is a decentralized activity. Each Devolved Administration within the UK (England, Wales, Scotland and Northern Ireland) carries out their own programme of data collection. The Department for Environment, Food and Rural Affairs (DEFRA) in England is responsible for collating data from each of the four countries of the UK (England, Scotland, Wales and Northern Ireland),<sup>5</sup> and for transmitting the final data sets to Eurostat.<sup>6</sup> DEFRA is also responsible for the collection of agricultural statistics in England. The equivalent departments in the Devolved Administrations are the Welsh Government, the Scottish Government and the Department for Agriculture, Environment and Rural Affairs in Northern Ireland (DAERA, formerly DARDNI).

DEFRA set up a Steering Group to oversee the progress of the Census 2010 Programme. This included regular Working Group meetings to ensure coordination and consistency across the Devolved Administrations.

### *Census staff*

Teams of permanent staff carry out the CA in each country of the UK. In most cases, additional temporary workers are also brought in to deal with the increased workload involved in running a census. The numbers of census staff involved in the CA 2010 for each country of the UK were:

- England – 16 permanent staff and 24 temporary staff members;
- Scotland – 16 permanent staff and 1 temporary staff members;
- Wales – 10 permanent staff and 4 temporary staff members; and
- Northern Ireland – 11 permanent staff.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 1 June 2010, for land tenure, utilized agricultural area, livestock, etc.

### **Reference periods:**

- the 12 preceding months (from July 2009 to June 2010), for labour, agricultural production methods, etc.; and
- the last three years (2008–2010), for renewable energy, rural development support, etc.

## 4. ENUMERATION PERIOD

The enumeration period for the CA 2010 was May–December 2010, while for the SAPM, data collection started in March (September, in Wales) and ended by the end of April 2010 (October, in Wales).

<sup>1</sup> This legislation does not need to be updated or amended to allow for new surveys or for additional questions. In principle, it is a statutory requirement for all “occupiers of agricultural land” to complete and return their questionnaires, although in practice only the most important surveys, such as the June Census/Survey, are marked as compulsory.

<sup>2</sup> The 1947 Act requires “occupiers of agricultural land” or the owners of livestock to provide statistics on agriculture to the Scottish Government at any time or times in any year, in relation to a list of topics such as crops, labour and livestock numbers. The 1947 Act is not specifically tied to any one survey.

<sup>3</sup> The powers enshrined in this Act were devolved to the National Assembly for Wales following the Government of Wales Act 2006. There is also a requirement to minimize the burden on respondents wherever possible. All data on cattle were been sourced from the Cattle Tracing System.

<sup>4</sup> The Order requires “occupiers of agricultural land” or the owners of livestock to provide to DARD, at any time or times in any year, such returns as may be prescribed in relation to a list of topics, such as crop areas and livestock numbers.

<sup>5</sup> The CA 2010 in Northern Ireland was conducted under the management of a Principal Agricultural Economist with one Deputy Principal Statistician and six administrative staff who organized and carried out all the work, with the exception of printing and posting forms, and data entry for the June questionnaire. The work of the team was monitored by the Farm Census Development Group, which considered and recommended any changes from earlier surveys. This group comprised a number of key users of the data.

<sup>6</sup> Domestic arrangements in the UK mean that agricultural policy, data collection methods and data availability can vary slightly between the four countries. As the data supplier to the EU, DEFRA tries to harmonize the data collection methodologies where possible but ultimately, as long as the data meet the requirements specified in Regulation (EC) No. 1166/2008, DEFRA has limited powers to influence the individual methodologies chosen.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the agricultural holding, defined as “a single unit, both technically and economically, which has a single management and which produces agricultural products”.

## 6. GEOGRAPHIC COVERAGE

The CA 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The initial target population was all holdings live on the register in spring 2010 that exceeded EU thresholds for inclusion. Minimum size limits were applied for the target population, as follows: 5 ha of UAA; 1 ha orchards/permanent crops; 0.5 ha vegetables grown in the open; 0.1 ha glasshouse for flowers, vegetables or fruit; ten head of cattle, 50 pigs or ten breeding sows; 20 sheep; 20 goats; 1 000 head of poultry; mushrooms.<sup>7</sup>

For Northern Ireland, the threshold was applied so that the population surveyed included all active farm businesses having one hectare or more of farmed land, whether owned, leased or taken in conacre,<sup>8</sup> and those with under 1 ha having any cattle, sheep or pigs or with “significant poultry or horticultural activity”.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The AC 2010 data were collected using the traditional (classical) approach, along with the use of administrative registers as a source of census data. In general terms, organic production data, cattle information, rural development payments and common land data are all collected from administrative systems.

### *Frame*

The frame of the CA 2010 was the population of holdings recorded as “live” on the UK Farm Register in spring 2010, which met the minimum thresholds criteria. Holdings with temporarily reduced levels of activity (such as seasonally let out land, temporarily empty pig or poultry sheds) were also included in the census frame.

### *Complete and/or sample enumeration methods*

The CA was an enumeration of all holdings above predefined thresholds.

### *Sample design (if sampling was used)*

The SAPM was a three-stage stratified random sample of 31 000 holdings with responses received from approximately 18 500 holdings.

### *Data collection methods*

Data collection varied slightly between each of the four countries in accordance with the administrative systems that could be accessed. For all other items on the main CA 2010 and all SAPM items, most data were collected with the self-interviewing (mail-out/mail-back) method.<sup>9</sup> Any records that were flagged with issues (or were partially complete) were contacted via telephone using CATI, where appropriate.

In England, farmers were offered the option to complete the CA on the Internet (using CAWI). Farmers who did not wish to complete an online return could request a paper form.

### *Questionnaire(s)*

Ten questionnaires were used for the CA 2010 and SAPM in the UK. England had three questionnaires (SAPM 2010 form, Irrigation 2010 form, Census 2010 form). Scotland had three questionnaires (Main Census 2010 form, Special Census 2010 form, SAPM 2010 form). Wales and Northern Ireland had two questionnaires each (Census 2010 form, SAPM 2010 form).

The questionnaires covered all 16 core items recommended in the WCA 2010.

## 9. USE OF TECHNOLOGY

Extensive use of administrative registers was made throughout the UK (for information on organic characteristics, cattle, rural development payments and common land). CATI was used to check and complete primary census data. In England, farmers were offered the option to complete the CA on the Internet. Census results were disseminated and are accessible online.

<sup>7</sup> The UK added further criteria to the EU thresholds to ensure better coverage for pigs and poultry. The nature of these holdings means that they have a rapid turnover of animals and if the latest data was captured at a point when their stock levels were unusually low, they risked being wrongly excluded from the target population. The application of thresholds had a minimal impact on the estimates of land and livestock (estimated total contribution of less than 1 percent to the overall agricultural production of the country); however, it considerably reduced the number of holdings subject to the CA.

<sup>8</sup> Conacre is the system of annual lets that involves 30 percent of agricultural land in Northern Ireland.

<sup>9</sup> The CA 2010 questionnaires were posted in late May 2010, and targeted final reminders in early August 2010, which included a duplicate survey form. Data collection for the census ceased at the end of December 2010, and in early January 2011, the call centre staff stopped data cleaning and respondent follow-ups. The SAPM questionnaires were sent out on 1 March 2010 (September 2010 in Wales). With the exception of Wales, the SAPM data collection ended at the end of April 2010.

## 10. DATA PROCESSING AND ARCHIVING

Most of the data were collected using printed survey forms. All of the forms were returned to a professional data capture company that either keyed or scanned the questionnaires. Once the data were captured, they were returned to the institutions and a number of validation checks were carried out. Survey support teams worked to correct issues with the data by contacting farmers and/or using additional data about the farm collected from other sources. Despite the efforts made, there was some nonresponse, such that a degree of imputation was required for the core CA 2010 items. Labour and diversification items were mainly imputed using donor imputation, whereas the land and livestock items were imputed using a ratio-raising process.

## 11. CENSUS DATA QUALITY

Comparisons of the CA 2010 with other data sources for the reference year were not possible. The items collected on the CA 2010 survey forms were not collected elsewhere with sufficient coverage or a sufficiently enough sample to permit comparisons. Generally, however, the data were judged to be comparable with information from earlier years and no significant issues were noted.

## 12. DATA DISSEMINATION

A number of publications are produced by each of the four UK administrations that relate to the situation in their own country. Provisional results for the UK were issued in September 2010. Final results were released in December 2010 according to the arrangements approved by the UK Statistics Authority. Final census results for UK were published in December 2010. Detailed labour results were published in October 2011.

## 13. DATA SOURCES

**Department for Environment Food and Rural Affairs (DEFRA).** 2010a. *Diversification and Renewable Energy production on farms in England in 2010*. (also available at <https://www.gov.uk/government/statistics/diversification-and-renewable-energy-production-on-farms-in-england-in-2010>).

**Department for Environment Food and Rural Affairs (DEFRA).** 2010b. *Farm practices survey 2010*. England. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Reports\\_2/UK\\_ENG\\_REPc\\_2010.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Reports_2/UK_ENG_REPc_2010.pdf))

**Department of Agriculture and Rural Development.** 2011. *EU Farm Structure Survey 2010*. Northern Ireland. (also available at <https://www.daera-ni.gov.uk/sites/default/files/publications/dard/european-structure-survey-2010.pdf>).

**Eurostat.** 2019a. Archive: Agricultural census in the United Kingdom. In: *European Commission: Eurostat [online]*. Luxembourg [Cited 23 August 2019]. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural\\_census\\_in\\_the\\_United\\_Kingdom](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Agricultural_census_in_the_United_Kingdom)

**Eurostat.** 2019b. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat [online]*. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

## 14. CONTACT

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- Department for Agriculture, Environment and Rural Affairs (DAERA), Northern Ireland: [Des.Muldoon@daera-ni.gov.uk](mailto:Des.Muldoon@daera-ni.gov.uk)

Websites:

- Statistics: <https://www.gov.uk/government/statistics>
- Department for Environment Food and Rural Affairs, England: [www.defra.gov.uk/statistics/foodfarm](http://www.defra.gov.uk/statistics/foodfarm)
- Statistics Scotland: <https://www.gov.scot/>
- Statistics Wales: [www.wales.gov.uk/statistics](http://www.wales.gov.uk/statistics)
- Department of Agriculture and Rural Development, Northern Ireland: <https://www.daera-ni.gov.uk/>

UNITED KINGDOM – CENSUS OF AGRICULTURE 2010 – MAIN RESULTS<sup>1</sup>

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>185 200</b>	<b>18 009 980</b>
Civil persons	177 840	14 716 860
An individual (sole holder holdings) <sup>2</sup>	177 840	14 716 860
Juridical persons (legal entities)	7 370	3 293 110

LAND TENURE		
	Holdings	UAA (ha)
<b>Total</b>	<b>185 200</b>	<b>16 881 690</b>
Legal ownership and owner-like possession (owned land)	158 530	10 881 940
Rented from others (land rented)	63 370	4 804 500
Other form of tenure (shared farming or other modes)	110	1 195 250

DISTRIBUTION OF UAA, BY LAND SIZE CLASSES		
	Holdings	UAA (ha)
<b>Total</b>	<b>185 200</b>	<b>16 881 690</b>
Holdings without UAA	2 540	
Holdings with UAA	182 670	16 881 690
Less than 2 ha	4 500	4 630
2–4.99 ha	8 020	27 430
5–9.99 ha	26 850	194 550
10–19.99 ha	28 690	412 790
20–29.99 ha	17 890	439 950
30–49.99 ha	24 490	960 850
50–99.99 ha	32 990	2 360 080
100 ha and over	39 240	12 481 400

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>185 200</b>	<b>18 009 980</b>
UAA	182 670	16 881 690
Arable land	90 980	5 945 510
Land temporarily fallow	20 610	157 310
Permanent meadows and pastures	166 110	10 899 970
Permanent crops	5 880	36 200
Other land	81 750	1 128 290
Woodland	49 910	691 180
Unutilised agricultural land and other areas	64 780	437 110

MANAGERS BY SEX <sup>3</sup>		
	Number	UAA operated (ha)
<b>Total</b>	<b>185 200</b>	<b>16 881 690</b>
Male	161 010	15 816 290
Female	24 190	1 065 390

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>142 310</b>
Male	67 990
Female	74 320

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>416 660</b>
Male	298 200
Female	118 460
Family labour force	317 390
Male	220 110
Female	97 280
Regular non family labour force	99 270
Male	78 090
Female	21 180

MANAGERS BY SEX AND AGE <sup>3</sup>	
	Number
<b>Total</b>	<b>185 200</b>
Male	161 010
Female	24 190
Less than 35 years	7 540
Male	6 670
Female	870
35–44 years	24 780
Male	21 740
Female	3 040
45–54 years	49 130
Male	42 860
Female	6 270
55–64 years	51 190
Male	44 600
Female	6 590
65 years and over	52 560
Male	45 140
Female	7 420

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>139 000</b>	
Cattle	85 760	10 063 570
Sheep	70 120	31 027 810
Goats	4 280	89 810
Pigs/swine	9 990	4 443 190
Equines (Equidae)	38 850	294 900
Poultry (1 000 head) <sup>5</sup>	28 906	162 560
Broilers	1 740	104 180
Layers	24 880	46 950
Other poultry	11 800	11 430
Other animals	2 100	

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Additional data are provided by the DEFRA.

**OCEANIA**

American Samoa is one of the territories collectively referred to as the “U.S. Outlying Areas”. For statistical purposes, it is recorded as a separate entity in the World Census of Agriculture Database (in the Oceania Region). Consequently, results related to the United States of America bear only upon the continental territory of the country.

## 1. HISTORICAL OUTLINE

The U.S. Bureau of the Census conducted the first Census of Agriculture (CA) in American Samoa in 1920, as part of the decennial Population and Housing Census (PHC). Subsequent agricultural censuses were carried out every ten years.<sup>1</sup> Since 1998, American Samoa was included in the Five-Year Agriculture Census Program. The next census was carried out in 2003. The 2008 CA is the eleventh agricultural census to be conducted in American Samoa, and the third to be conducted strictly as an independent CA since the one undertaken in 1998.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA is required by law under the Census of Agriculture Act of 2002, Public Law 105-113 (Title 7, United States Code, Section 2204g). The law directs the Secretary of Agriculture to conduct a census of agriculture every five years, covering the previous year. The 2008 American Samoa CA was conducted in accordance with a Memorandum of Agreement approved by the Administrator of the National Agricultural Statistics Service (NASS) of the U.S. Department of Agriculture (USDA), the Department of Interior’s Office of Insular Affairs, and the American Samoa Department of Commerce (DC).

### **Institutional framework and international collaboration**

The USDA/NASS was responsible for conducting the CA 2008. The CA 2008 was conducted with the cooperation and assistance of the American Samoa Department of Agriculture (DA) and the American Samoa Community College – Land Grant. The NASS provided technical assistance at various levels, while the American Samoa DA was responsible for recruiting and training local officers and field staff, and for supervising local administrative matters. The census was funded by the United States federal budget.

### **Census staff**

One NASS staff was assigned to the American Samoa CA. The project manager, crew leaders and enumerators employed for the census in the American Samoa received special training, in accordance with instructions prepared by NASS and the American Samoa DC.<sup>2</sup>

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of enumeration, for inventory items such as livestock, machinery, equipment.

**Reference period:** the calendar year (from 1 January to 31 December 2008), for crop production, crop and livestock sales, expense data, etc.

## 4. ENUMERATION PERIOD

Data collection was conducted from January to July 2009.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). Information on capture fisheries and aquaculture activities carried out by the agricultural holdings was also collected.

The **statistical unit** was the farm, defined as any place that raised or produced any agricultural products for sale or consumption by family members. Farms were classified as: (a) commercial farms, defined as those with sales of USD 100 or more; or (b) non-commercial farms, which are those with less than USD 100 in sales.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire territory of American Samoa.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No threshold was applied.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CA 2008.

### **Frame**

The universe was the totality of households engaged in agricultural activities. A sampled area frame component covered the household sector. All commercial farms were enumerated on the basis of the list prepared by the American Samoa DA. A list frame

<sup>1</sup> The first nine agriculture censuses in American Samoa were taken in conjunction with the decennial PHC. Agriculture information was collected only for those households that answered affirmatively to questions about agricultural activities asked in the decennial questionnaire.

<sup>2</sup> The training included practice in interviewing and filling out the report form, in addition to detailed discussion of the enumerator’s instructions.

including farms with juridical status was used for the commercial farm sector. The DA made available detailed maps of all the islands in the territory, which enabled up-to-date map-spotting (location on a map) of all households in the territory.

#### **Complete and/or sample enumeration methods**

The CA 2008 combined complete and sample enumeration methods. All commercial farms were completely enumerated. The remaining households were enumerated on the basis of an area sample survey. The commercial farms were excluded from the universe used to select the area sample selected for surveying the non-commercial farms.

#### **Sample design (if sampling was used)**

Area frame sampling was used to collect data from non-commercial farms. A serpentine selection methodology with systematic random sampling was used to select the area sample. The sampling rate was 20 percent.

#### **Data collection method(s)**

Data collection was done by means of traditional face-to-face interviews and the information was collected in paper forms (Paper and Pen Interviewing, or PAPI, method).

#### **Questionnaire(s)**

Only one questionnaire was used for data collection. The questionnaire covered 14 of the 16 items recommended by FAO for the WCA 2010 core module.<sup>3</sup>

### **9. USE OF TECHNOLOGY**

Detailed maps of all islands in the territory and up-to-date map-spotting (location on a map) of all households in the territory were used for frame building, and to support field data collection. The maps were supplied by the American Samoa DC. Census results were disseminated and are accessible online.

### **10. DATA PROCESSING AND ARCHIVING**

The processing of the CA 2008 was done by both the American Samoa DC and the NASS in Washington, D.C. Each report form was reviewed and coded prior to data keying. Report forms not meeting the census definition of “farm” were voided. After review and coding of all report forms, the data were keyed. These functions were performed in American Samoa. After the review and keying operations were completed, the electronic files and the report forms were sent to Washington, D.C., where the data were subjected to a thorough computer edit. The corrected data were then tabulated by the computer and reviewed by analysts.

### **11. CENSUS DATA QUALITY**

Quality checks included strict field supervision, clerical screening for farm activity, follow-up of non-respondents, keying and transmittal of completed report forms, computerized editing of inconsistent and missing data, review and correction of individual records referred from the computer edit, review and correction of tabulated data, and electronic data processing.

### **12. DATA DISSEMINATION**

The final results of the CA 2008 were released in April 2011. The census report published statistics for the territory, districts and counties. It included methodological notes and a questionnaire. The census report and other materials are available on the NASS website.<sup>4</sup>

### **13. DATA SOURCES**

**United States Department of Agriculture, National Agricultural Statistics Service.** 2008. *2007 Census of Agriculture: American Samoa (2008). Territory, District, and County Data. Volume 1, Geographic Area Series, Part 55.* (also available at [https://www.nass.usda.gov/Publications/AgCensus/2007/Full\\_Report/Outlying\\_Areas/AmericanSamoa.pdf](https://www.nass.usda.gov/Publications/AgCensus/2007/Full_Report/Outlying_Areas/AmericanSamoa.pdf)).

### **14. CONTACTS**

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E-mail: [nass@nass.usda.gov](mailto:nass@nass.usda.gov)  
Website: <https://www.nass.usda.gov>

<sup>3</sup> Two items were not included in the questionnaire: (i) “Presence of irrigation on the holding”; and (ii) “Other economic production activities of the holding’s enterprise”.

<sup>4</sup> The census results are available at [https://www.nass.usda.gov/Publications/AgCensus/2007/Guide\\_to\\_Census\\_Products/](https://www.nass.usda.gov/Publications/AgCensus/2007/Guide_to_Census_Products/)

# AMERICAN SAMOA – CENSUS OF AGRICULTURE 2008 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>5 840</b>	<b>7 690</b>
Commercial farms	1 968	4 291
Non-commercial farms	3 872	3 399

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>5 840</b>	<b>7 690</b>
Full owner	5 650	7 548
Part owner	16	32
Tenant	174	111

LAND FRAGMENTATION		
	Holdings	Area (ha)
<b>Total</b>	<b>5 840</b>	<b>7 690</b>
1 parcel	4 637	n.a.
2 parcels	873	n.a.
3 parcels	330	n.a.

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>5 840</b>	<b>7 691</b>
Less than 0.40 ha	1 283	190
0.40–0.81 ha	2 589	1 637
0.81–1.62 ha	858	1 176
1.62–2.83 ha	699	1 571
2.83–3.64 ha	103	335
3.64–7.69 ha	241	1 096
7.69–15.78 ha	52	531
15.78 ha and over	15	1 155

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>5 840</b>	<b>7 690</b>
Cropland	5 650	5 378
Land under crops	5 816	4 825
Cropland used for other purpose	665	553
Permanent meadows and pastures	137	28
Woodland, except woodland pastured	588	1 321
Other land	3 023	964

DISTRIBUTION OF HOLDERS, BY SEX AND AGE		Number
<b>Total</b>		<b>5 840</b>
Male		4 707
Female		1 133
Under 35 years		457
35–44 years		1 186
45–54 years		1 729
55–64 years		1 302
65 years and over		1 166

EMPLOYEES WORKING ON THE HOLDING		Number
<b>Total employees</b>		<b>1 063</b>

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Pigs	1 547	16 904
Chickens (1 000 head)	732	36
Other animals	3	

HOLDINGS, BY MAIN PURPOSE OF PRODUCTION		Holdings
<b>Total producing mainly for</b>		<b>5 840</b>
Home consumption		5 827
Sale		1 999

MACHINERY AND EQUIPMENT USED ON THE HOLDING		Units
Total tractors of all kind		16
Other (machine-powered)		
Motortrucks		1 209
Automobiles		2 294
Tillers of all kinds		129
Chain saws		1 993
Weed eaters		3 795
Mist blowers		624

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	n.a.	n.a.
Maize	86	12
Vegetables and melons	n.a.	n.a.
Cabbages	184	36
Cucumbers	334	61
Eggplants	257	27
Green beans	256	37
Green onions	43	8
Melons	53	9
Tomatoes	214	24
Root/tuber crops	n.a.	n.a.
Cassava	670	126
Yams	1 677	284
Taro	4 228	1 638
Giant taro	2 770	571
Sugar crops	n.a.	n.a.
Sugar cane	550	66
Other temporary crops	294	65



## 1. HISTORICAL OUTLINE

Agricultural commodity data have been collected in Australia since the 1860s. The Agricultural Census (AC) was usually conducted annually at the end of March, until 1996–1997, when the Australian Bureau of Statistics (ABS), to ensure better alignment with other ABS surveys, changed the collection period to 30 June. The current strategy envisages a five-year-interval census with sample surveys in inter-censal years. Subsequent ACs have been conducted on a quinquennial basis since 2000/2001. The metadata review and data presented here refer to the AC 2010/2011.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The AC 2010/2011 was undertaken under the following:

- Census and Statistics Act 1905, with further amendments (Act No. 10 of 2006);
- Australian Bureau of Statistics Act 1975, with further amendments (Act No. 46 of 2011), setting up the establishment and functions of the Bureau of Statistics, the appointment and attributions of the Australian Statistician and the statistical information to be collected.

### *Institutional framework and international collaboration*

The ABS is the office responsible for the collection, compilation and publication of official statistics, including the organization and implementation of the AC.

The AC is funded predominantly via appropriation (that is, funding from the Australian Government); however, certain content is funded by external users, such as government agencies or industry bodies.

### *Census staff*

The AC 2010/2011 was conducted using either a mail-out/mail-back paper survey form or an online electronic form (e-form); therefore, enumerators and field staff were not required. The ABS distributed statistical production activities across a number of specialist processing and support areas located in a number of Australian state offices of the ABS.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 30 June 2011, for inventory items such as the total area of holdings owned or operated and the number of livestock on the holding.

**Reference periods:** agricultural year (1 July 2010 to 30 June 2011), for crop production, land management practices and water use, etc.

## 4. ENUMERATION PERIOD

The field data collection for the AC 2010/2011 was carried out from July to November 2011.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (agricultural and livestock production).

The **statistical unit**, for the purposes of the AC 2010/2011, was a “business”, identified by its Australian Business Number (ABN); a geographic split was applied for ABNs operating over multiple locations. Units were identified as undertaking agricultural activity if any of the primary or secondary productive activities of those businesses fall within the Agriculture Subdivision (Subdivision 01), as defined by the 2006 edition of the Australian and New Zealand Standard Industrial Classification (ANZSIC).

## 6. GEOGRAPHIC COVERAGE

The AC 2010/2011 covered the entire territory of Australia.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The scope of the AC 2010/2011 included all businesses undertaking agricultural activity recorded on the ABS Business Register above a minimum size cut-off of AUD<sup>1</sup> 5 000. The measure of size was based on the ABS Estimated Value of Agricultural Operations (EVAO). For businesses with no previously reported agricultural activity (that is, new businesses), a derived value of operations is based on the turnover reported in its Businesses Activity Statement, sourced from the Australian Taxation Office.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the AC 2010/2011.

### *Frame*

The frame used for the AC 2010/2011 was drawn from the ABS Business Register (ABSBR). The ABSBR has been used for ABS agricultural collections since 2005–2006.<sup>2</sup>

<sup>1</sup> Australian dollar.

<sup>2</sup> The ABSBR has a high level of coverage of agricultural businesses in Australia, as most businesses and organizations in the country must obtain an ABN from the Australian Business Register for their business operations, and the ABR is updated regularly to reflect changes in business populations.

### **Complete and/or sample enumeration methods**

The AC 2010/2011 was designed as a complete enumeration (census) of agricultural businesses listed on the ABSBR that met the scope requirements.

### **Sample design (if sampling was used)**

No sampling was used in the AC 2010/2011. The frame (drawn from the ABSBR) used for the census was stratified into businesses by size (EVAO), type of agricultural activity (ANZSIC 2006) and location. The stratification allowed for weighting of strata to compensate for non-response.

### **Data collection method(s)**

Paper survey forms were despatched to all in-scope agricultural businesses. Forms were returned to the ABS using reply-paid (postage-paid) envelopes. Included with the form was a cover letter outlining the AC 2010/2011, as well as details that enabled an alternate mode of response to be provided – specifically, via an electronic form (using Computer-assisted Web Interviewing, or CAWI).<sup>3</sup>

### **Questionnaire(s)**

One questionnaire type was used for the AC 2010/2011 data collection. Of the 16 core items recommended by FAO to be collected in the 2010 WCA round, 10 were covered by the census questionnaire.<sup>4</sup>

## **9. USE OF TECHNOLOGY**

Optical character recognition (OCR) continued to be the main method for scanning and extracting data from paper questionnaires. The CAWI method was also used for data collection, by approximately 11 percent of respondents. Census results were disseminated and are accessible online.

## **10. DATA PROCESSING AND ARCHIVING**

OCR was used for scanning and extracting data from paper forms. The CAWI e-forms infrastructure was developed by IBM. Manual data entry is restricted to data taken over the phone and when correcting OCR scanning issues (error repair). A range of SAS-based tools (programmes, projects and code) was used to interrogate estimates and identify anomalies, either at the unit (micro) or estimate (macro) level. Editing of unit-level data was undertaken via the Blaise/Editors Tool Kit (ETK). Estimation processes used SAS-based projects (software) with ABS-developed interfaces allowing for setup and operations. Imputation also heavily relies on SAS; however, the ABS has developed an interface to allow for setup (parameters, etc.) in the IBM Lotus Notes environment.

## **11. CENSUS DATA QUALITY**

The overall response rate achieved for the AC 2010/2011 was 88 percent. Intensive follow-up of significant (important) units was undertaken to minimize the impact of non-response bias and to maximise the accuracy of small area estimates. The main measure of accuracy of estimates from the AC 2010/2011 was indicated by calculating relative standard errors, which were assigned to each estimate produced and released.

## **12. DATA DISSEMINATION**

Preliminary census results were available in November 2011 and the final results were released in June 2012. The final AC 2010/2011 results were published on the ABS website in three publications.

## **13. DATA SOURCES**

**Australian Bureau of Statistics (ABS).** ABS [online]. Canberra. [Cited 19 September 2019]. <http://www.abs.gov.au/>

## **14. CONTACT**

Australian Bureau of Statistics (ABS)  
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Website: <http://www.abs.gov.au/contact>

<sup>3</sup> The AC forms were dispatched in late May 2011. Approximately 77 percent of businesses responded via the mail-out/mail-back paper form. Data collection by means of the e-form (CAWI) achieved a take-up rate of 11 percent. For approximately 1 percent of businesses (around 1 500) of non-responding significant businesses, or when requested specifically by businesses, data were collected over the phone (using the PAPI method).

<sup>4</sup> The items that were not covered by the AC 2010/2011 were: (i) "Sex of agricultural holder"; (ii) "Age of agricultural holder"; (iii) "Household size"; (iv) "Presence of aquaculture on the holding"; (v) "Presence of forests and other woodland on the holding with the exception of forestry for plantation use"; and (vi) "Other economic production activities of the holding's enterprise".

<sup>5</sup> This workgroup addresses all international data and information requests.

## AUSTRALIA – AGRICULTURAL CENSUS 2010/2011 – MAIN RESULTS

NUMBER OF HOLDING AND AREA		
	Holdings	Area (ha) <sup>1</sup>
<b>Total</b>	<b>135 654</b>	<b>409 672 625</b>

LAND TENURE		
	Holdings	Area (ha) <sup>1</sup>
<b>Total</b>	<b>135 654</b>	<b>409 672 625</b>
Land owned	130 409	264 578 978
Crown land, leased	17 077	119 453 204
Other land, leased or rented	24 217	23 033 008
Other	4 149	2 607 435

LAND USE <sup>2</sup>		
	Holdings	Area (ha) <sup>2</sup>
<b>Total</b>	<b>135 654</b>	<b>409 672 625</b>
Agricultural land	n.a.	n.a.
Cropland	66 043	32 078 329
Land under temporary meadows	103 372	364 042 516
Land mainly for other agricultural purposes	11 416	109 692
Forest and other wooded land	4 612	448 322
Other land	86 745	15 827 769

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	79 322	28 506 169
Buffaloes	1 153	4 414
Sheep	43 828	73 098 761
Goats	3 318	546 613
Pigs	2 310	2 285 214
Equines	n.a.	259 467
Stud horses	6 982	89 351
Other horses	27 756	170 116
Poultry (1 000 head)	3 004	98 767
Chickens	706	77 633
Layers	2 092	13 111
Ducks	354	1 000
Turkeys	257	1 203
Other	488	5 820
Other animals	34 147	1 216 727

<sup>1</sup> Total area of holdings as at 30 June 2011.

<sup>2</sup> The breakdown of "total area of holding" according to main land use type is for the period 1 July 2010 to 30 June 2011.

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	32 589	19 320 645
Wheat	24 732	13 501 780
Oats	10 762	826 031
Barley	16 949	3 680 994
Sorghum	2 489	633 071
Maize	749	62 196
Rice	809	75 783
Triticale	2 115	187 201
Other cereals	1 867	353 590
All other cereals for other purpose	7 701	637 908
Vegetables and melons	5 753	124 615
Tomatoes	888	8 244
Pumpkins	1 058	6 986
Onions	425	6 139
Melons	441	7 609
Lettuce	557	9 071
Cauliflower	372	3 118
Carrots	259	4 636
Capsicum	497	2 372
Broccoli	487	7 090
Mushrooms	99	160
Asparagus	94	2 072
Oilseed crops	n.a.	n.a.
Peanut	137	7 282
Safflower	118	10 404
Sesame	3	402
Soya beans	435	17 361
Sunflower	230	37 177
Root/tuber crops	n.a.	n.a.
Potatoes	1 124	32 153
Leguminous crops	n.a.	n.a.
Beans	405	6 504
Field beans	2 262	261 349
Faba beans	1 556	162 629
Mung beans	603	86 354
Other field beans	147	12 366
Chickpeas	2 105	653 142
Green peas	156	3 332
Lupins	4 089	755 848
Lentils	1 118	218 763
Sugar crops	3 765	308 104
Other temporary crops	n.a.	n.a.
Cotton	1 000	588 294
Other crops	4 158	81 001

## 1. HISTORICAL OUTLINE

The first Census of Agriculture in the Cook Islands was conducted in 1988 and the second in 2000. The 2011 Census of Agriculture and Fisheries (CAF 2011) is the third agricultural census to be conducted in the country.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Statistics Act 1966, stipulates that a Census of Population and Dwellings (CPD) is to be conducted every five years in the Cook Islands. Traditionally, the CPD included questions on agricultural activity at the household level, types of crops grown, livestock numbers, farm machinery and involvement in fishing and pearl farming activities.

The need to integrate the CA and the CPD was recognized and a decision was taken to conduct the two censuses in 2011. The approach adopted for data collection was to have two separate teams of supervisors and enumerators, one for the CPD and another for the CAF.

### **Institutional framework and international collaboration**

The agencies responsible for conducting the CAF 2011 were the Ministry of Agriculture (MoA) and the Statistics Office (CISO),<sup>1</sup> which jointly undertook the agricultural census activities. The MoA was responsible for the CAF team, while the CISO was responsible for the CPD team.

Technical assistance for the CAF was provided by FAO.

### **Census staff**

Fieldwork was carried out by 19 supervisors and 83 enumerators. Most of the field staff were recruited from government ministries and were required to conduct the census after regular hours.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of enumeration, for inventory items, such as household composition and livestock numbers.

### **Reference periods:**

- the last 12 months, for data on vegetable and root crops planted and harvested, engagement in fishing and pearl farming activities, boats and other equipment used, etc.;
- the last month (the month prior to enumeration), for data on labour inputs.

## 4. ENUMERATION PERIOD

The enumeration period for the CAF 2011 was from 1 December 2011 to January 2012.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production), capture fisheries and pearl farming activities.

In the CAF 2011, four categories of agricultural activity were defined: *non-agricultural*, *minor agricultural*, *subsistence* and *commercial*. The *non-agricultural* category was determined in terms of crops only. *Minor agricultural* was a category of households growing very small quantities of crops, defined as less than 64 m<sup>2</sup> of garden crops and/or less than 20 fruit trees. *Subsistence* households were those growing more than the minimum quantities grown by minor agricultural households but that did not sell any produce. *Commercial* households were the households growing more than the minimum quantities and that sold their agricultural produce. The **statistical unit**, the holding, was defined as recommended in the WCA 2010.

An “agriculturally active household” was defined as a household with a level of agricultural activity that was neither subsistence only, subsistence with cash cropping nor commercial-producer. Along with the holdings in the household sector, commercial agricultural enterprises were also covered in the CAF.

## 6. GEOGRAPHIC COVERAGE

The CAF 2011 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

No exclusions were applied.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used for the CAF 2011.

Agriculture-related data were collected through both the CAF and the CPD 2011. There were two separate teams of supervisors and enumerators, one for the CPD and another for the CAF. In each Enumeration Area (EA), the CPD was first conducted and the households engaged in agriculture and fishing activities were identified. The list of households engaged in agriculture and fishing, identified during the CPD, was passed to the CAF team, which then visited these households to complete the CAF.

<sup>1</sup> Cook Islands Statistics Office.

The northern group of islands presented a particular challenge for data collection, because they are sparsely populated and are only accessible by boat. For this reason, the CAF enumeration was conducted simultaneously with the CPD, with the two censuses sharing transport costs.

#### **Frame**

The CPD and the CAF used the EAs for the allocation of households and work areas. The list of households engaged in agriculture and fishing activities identified during the CPD served as a frame for the CAF 2011.

#### **Complete and/or sample enumeration methods**

The complete enumeration method was used to conduct the CAF 2011.

#### **Sample design (if sampling was used)**

No sampling was employed.

#### **Data collection method(s)**

PAPI was used to collect the census data.

#### **Questionnaire(s)**

Five questionnaires were used in the CAF 2011 to capture the information pertaining to agricultural, fishing, and pearl farming activities of the household: (i) a household form; (ii) a parcel form (for agriculturally active households with a holding area of at least 64 m<sup>2</sup>); (iii) a livestock form; (iv) a fishing form; and (v) a pearl farming form.

The questionnaires covered 14 of the 16 core items<sup>2</sup> recommended by FAO.

## **9. USE OF TECHNOLOGY**

Scanning technology for data capture was used. Census results were disseminated through the website.

## **10. DATA PROCESSING AND ARCHIVING**

Following the data collection exercise, the census questionnaires were checked, edited, coded and prepared for scanning. Scanning technology for data capture was used in the CISO for the first time for the CPD 2011 and the CAF 2011. The tabulation was done using Microsoft Excel and Access.

## **11. CENSUS DATA QUALITY**

A Post-enumeration Survey (PES) was carried out in selected EAs on Rarotonga and Aitutaki to evaluate some of the key data items. Data from the PES were compared with the data from the CAF and CPD. However, the results of the CAF 2011 and the CPD 2011, insofar as they relate to agricultural activity, are not comparable due to definitional differences.

## **12. DATA DISSEMINATION**

The census reports were made available to the public through the websites of the MoA and the CISO.

## **13. DATA SOURCES**

**FAO.** Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 6-10 November 2017, Nadi, Fiji. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 16 September 2019]. <http://www.fao.org/index.php?id=85857>

**Ministry of Agriculture.** 2014. *Cook Islands 2011 Census of Agriculture and Fisheries*. Rarotonga. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Reports\\_5/COK\\_EN\\_REP\\_2011.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Reports_5/COK_EN_REP_2011.pdf)).

## **14. CONTACTS**

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Website: [www.mfem.gov.ck](http://www.mfem.gov.ck)

<sup>2</sup> The following core items were not covered by the CA: (i) "Legal status of the holding"; (ii) "Presence of forest and other wood land on the holding".

## COOK ISLANDS – CENSUS OF AGRICULTURE AND FISHERIES 2011 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>1 275</b>	<b>602</b>

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>1 275</b>	<b>602</b>
Legal ownership and owner-like possession	n.a.	321
Rented from others	n.a.	120
Other form of tenure	n.a.	160

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>1 275</b>	<b>602</b>
Holdings without land	6	
Holdings with land	1 269	602
Less than 1 ha	792	117
1–1.99 ha	257	133
2–4.99 ha	180	166
5.00 ha and over	40	187

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>1 275</b>	<b>602</b>
Agricultural land	n.a.	417
Arable land	n.a.	301
Land temporary follow	n.a.	38
Land under permanent crops	n.a.	76
Permanent meadows and pastures	n.a.	2
Other land	n.a.	178
Not stated	n.a.	7

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX	
	Number
<b>Total</b>	<b>1 030</b>
Male	954
Female	76

LABOUR FORCE OF THE HOLDING	
	Number
<b>Total</b>	<b>1 691</b>
Male	1 310
Female	381
Members of holder's household engaged in agricultural activities	1 578
Male	1 213
Female	365
Hired managers working on the holdings	30
Male	25
Female	5
Employees working on the holdings	83
Male	72
Female	11

LIVESTOCK		
	Holdings	Heads
<b>Holdings with livestock</b>	<b>1 595</b>	
Cattle	118	370
Goats	1 028	6 174
Pigs/swine	2 513	16 835
Horses	10	19
Poultry (1 000 head)	n.a.	n.a.
Chickens	1 159	34
Ducks	16	0.3
Bees (hives)	4	n.a.

HOLDINGS BY MAIN PURPOSE OF PRODUCTION	
	Holdings reporting
<b>Total producing mainly for</b>	<b>1 269</b>
Home consumption	856
Sale	413

MACHINERY AND EQUIPMENT OWNED BY THE HOUSEHOLD	
	Units
Total tractors of all kind	224
Ploughs (machine-powered)	126
Other (machine-powered)	
Rotary hoe	212
Mist blower	167
Grass cutter	2 852
Motor mower	2 365
Disc harrow	92
Rotovator	32
Slasher	151
Tyne	32
Ripper	68
Chain saw	1 559
Knapsack	1 379
Water pump	762

## 1. HISTORICAL OUTLINE

The 2009 National Agricultural Census (NAC) in Fiji, to which the metadata review and data presented here refer, is the fourth to be conducted by the country after 18 years. Before then, Fiji had undertaken three NACs: in 1968, 1978 and 1991.<sup>1</sup>

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The NAC 2009 was carried out according to the Statistical Ordinances No. 29 of 1961 and No. 8 of 1964, enabling the collection, compilation, analysis and publication of certain statistical information, including agriculture-related data.

### **Institutional framework and international collaboration**

The NAC 2009 was under the responsibility of the Ministry of Primary Industry (MPI), through its Department of Agriculture, Economic Planning and Statistics Division.

FAO provided technical assistance for the NAC 2009.

### **Census staff**

Overall, 129 enumerators and 26 supervisors were engaged in the field operation.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for general characteristics of the farm, information on farm household members, presence of crops, livestock, pastures, machinery and equipment.

### **Reference periods:**

- the last cropping and harvesting season, for participation in agricultural activities;
- October 2008–September 2009, for area sown, harvested and production of crops;
- the week before the census enumeration, for milk production and employment; and
- the last ten years, for selected agricultural practices.

## 4. ENUMERATION PERIOD

Data collection was conducted from 6 October 2009 to December 2009.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production).

The **statistical unit** was the farm (agricultural holding), defined as an “economic unit” of agricultural production under single management comprising all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form, or size. Single management could be exercised by an individual or household, jointly by two or more individuals or households, by a clan or a village, or by a juridical person such as a corporation, cooperative or government agency.<sup>2</sup>

## 6. GEOGRAPHIC COVERAGE

The NAC 2009 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following areas were excluded: area covered with planted forest, non-agricultural land, urban and peri-urban areas.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the NAC 2009.

### **Frame**

The NAC 2009 was conducted using a Multiple Sampling Frame (MSF) that included the list and the area components (see “Sample design” subsection below for further details). A comprehensive List Sampling Frame (LSF) with complete enumeration was established to provide better estimates with fewer area segments. The EAs used for the Population Census 2007 formed the basis for land use stratification; the areas were adjusted depending on the uniformity of the land use.

<sup>1</sup> For the 1991 census, an Area Sampling Frame (ASF) methodology was used for the first time. The basic structure of this methodology is still used by the Department of Agriculture (DOA).

<sup>2</sup> The farm's land may consist of one or more tracts, located inside or outside the segment, in one or more separate areas or *tinikas*; however, they must be located in the same province and share the same “production means” utilized by the farm, such as labour, farm buildings and machinery or draught animals.

**Complete and/or sample enumeration methods**

A combination of complete enumeration (of the units included in the LSF) and sample enumeration (for the area component) were applied in the NAC.

**Sample design (if sampling was used)**

The MSF included two components:

- an LSF elaborated by the staff of the Animal Health and Production Division and Extension Division staff, of the DOA; and
- an Area Sampling Frame (ASF).

The segment size was targeted at 1 km<sup>2</sup> (100 ha) for all strata. Because some of the smaller districts consisted of only a limited number of segments, it was decided to conduct a complete enumeration of all households in these districts. These districts became part of the Small Island Strategy (SIS).

A three-part methodology was adopted. The LSF and SIS farms were “censed” with a sampling rate of 100 percent. These areas were removed from the “national land areas” and the remainder of the area was stratified according to estimated agricultural intensity in the Fiji Islands Bureau of Statistics (FIBOS) EAs as used in the Population Census of 2007. An overall rate of 10 percent was used in the area component of the sample.

**Data collection method(s)**

The interviews were conducted face-to-face; the information was collected in paper forms (using the PAPI method).

**Questionnaire(s)**

Three census questionnaires were used:

- NAC 1 and NAC 3 – to record information on the segments from the sample. The NAC 1 questionnaire itemized all tracts within the segment and all associated farm tracts outside the segment. The NAC 3 questionnaire documented the nonfarm tracts within the segment.
- NAC 2 – to collect census data from list frame farms.

The census covered 11<sup>3</sup> of the 16 core items recommended to be collected in the WCA 2010.

**9. USE OF TECHNOLOGY**

The census results were disseminated online.

**10. DATA PROCESSING AND ARCHIVING**

No information related to data processing and archiving was provided in the census reports available.

**11. CENSUS DATA QUALITY**

Intensive quality control was undertaken, especially during the first three weeks of the census data collection in the four divisions of the country.

**12. DATA DISSEMINATION**

The census results were disseminated through a printed census report (including methodological notes and questionnaires) and online.

**13. DATA SOURCES**

**FAO.** Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 6-10 November 2017, Nadi, Fiji. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 16 September 2019]. <http://www.fao.org/index.php?id=85857>

**Ministry of Agriculture, Economic Planning and Statistics Division.** 2014. National Agricultural Census 2009. In: *IHSN platform* [online]. Suva. [Cited 14 August 2019]. <http://catalog.ihsn.org/index.php/catalog/4370>

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<sup>3</sup> Items not covered in the NAC are: (i) “Main purpose of production of the holding”; (ii) “Land tenure types on the holding”; (iii) “Presence of irrigation on the holding”; (iv) “Presence of forests and other woodland on the holding”; and (v) “Other economic production activities of the holding’s enterprise”.



# FIJI – AGRICULTURAL CENSUS 2009 – MAIN RESULTS

HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>65 037</b>	<b>251 859</b>
Individual	48 376	n.a.
Household	15 780	n.a.
Corporation	510	n.a.
Cooperative	371	n.a.

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>65 037</b>	<b>251 859</b>
Less than 1 ha	28 564	11 820
1–3 ha	17 203	29 495
3–5 ha	7 912	31 104
5–10 ha	6 917	46 866
10–20 ha	3 041	41 491
20–50 ha	990	29 118
50–100 ha	285	21 397
100 ha and over	126	40 567

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>65 037</b>	<b>251 859</b>
Agricultural land	n.a.	191 130
Arable land	n.a.	59 441
Land under temporary crops	n.a.	25 238
Land temporarily fallow	n.a.	34 203
Land under permanent crops	n.a.	85 196
Permanent meadows and pastures	n.a.	46 493
Forest	n.a.	44 645
Non agricultural land	n.a.	16 083

HOLDERS, BY SEX AND AGE		Number
<b>Total</b>		<b>63 622</b>
Male		61 309
Female		2 313
10–19 years		620
Male		592
Female		28
20–39 years		20 852
Male		20 534
Female		318
40–59 years		31 128
Male		29 966
Female		1 162
60 years and over		11 022
Male		10 217
Female		805

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total members</b>		<b>278 060</b>
Male		149 711
Female		128 349

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	22 155	134 411
Sheep	818	14 068
Goats	9 408	101 196
Pigs/swine	12 981	73 698
Horses	11 394	27 124
Poultry (1 000 head)	23 416	3 735
Chickens	19 751	3 668
Ducks	3 664	67

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Hand tractor	478	687
Wheel tractor	6 384	10 529
Other (machine-powered)	n.a.	
Machine pulled plow	2 079	3 421
Motorized water pump	411	433
Motorized chemical pump	72	120
Chaff cutters	84	99
Chainsaw	2 412	2 689
Rice/corn husker	61	63

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Cereals	n.a.	n.a.
Maize	1 155	172
Rice	2 821	3 624
Vegetables and melons	n.a.	n.a.
Carrots	187	17
Chinese cabbages	2 123	389
Cow peas	2 885	598
Eggplants	3 424	571
Tomatoes	3 045	622
Watermelons	2 715	842
Pumpkin	1 424	303
Oilseed crops	n.a.	n.a.
Peanuts	344	108
Sugar cane	19 611	57 177
Root and tuber crops	n.a.	n.a.
Cassava	38 757	15 447
Sweet potatoes	3 747	558
Yams	6 565	851
Other temporary crops	n.a.	n.a.
Tobacco	324	109

*Guam is one of the territories collectively referred to as the “U.S. Outlying Areas”. For statistical purposes, it is recorded as a separate entity in the World Census of Agriculture Database (in the Oceania Region). Consequently, results related to the United States of America bear only upon the continental territory of the country.*

## 1. HISTORICAL OUTLINE

The U.S. Bureau of the Census conducted the first Census of Agriculture (CA) in Guam in 1920, as part of the decennial Population and Housing Census (PHC) of that year. From 1930 through 1960, CAs continued to be carried out in conjunction with the decennial PHC program. Beginning in 1964, censuses on Guam were conducted as part of the quinquennial censuses of agriculture, and have been conducted on a five-year cycle for years ending in 2 and 7. The 2007 census is the fourteenth CA to be conducted for Guam.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA is required by law under the Census of Agriculture Act of 1997, Public Law 105-113 (Title 7, United States Code, Section 2204g). The law directs the Secretary of Agriculture to conduct a census of agriculture every five years, covering the previous year. The CA 2007 was conducted in accordance with a Memorandum of Understanding approved by the Administrator of the National Agricultural Statistics Service (NASS) of the U.S. Department of Agriculture (USDA), and by the Commissioner of Agriculture of Guam.

### **Institutional framework and international collaboration**

The USDA/NASS is responsible for conducting the CA 2007. The CA 2007 was conducted with the cooperation and assistance of the Guam Department of Agriculture (DA). The NASS provided technical assistance at various levels, while the Guam DA was responsible for recruiting and training local officers and field staff and supervising local administrative matters. The census was funded by the United States federal budget.

### **Census staff**

The project manager, crew leaders and enumerators employed for the census in Guam received special training in accordance with instructions prepared by NASS and the Guam DA. One NASS staff was assigned to the CA in Guam. The training included practice in interviewing and filling out the report form, in addition to detailed discussion of the enumerator’s instructions.

## 3. REFERENCE DATE AND PERIOD

**Reference date:** the day of enumeration, for inventory items such as livestock, machinery and equipment.

**Reference period:** the calendar year, from 1 January to 31 December 2007, for crop production, crop and livestock sales, expense data, etc.

## 4. ENUMERATION PERIOD:

The enumeration was conducted from January to July 2008.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). Information on capture fisheries and aquaculture activities carried out by the agricultural holdings was also collected.

The **statistical unit** was the farm (agricultural holding), defined as any place from which USD 1 000 or more of agricultural products produced and sold, or normally would have been sold, during the calendar year 2007. According to the census definition, a farm is essentially an operating unit, not an ownership tract. All land operated or managed by one person or partnership represents one farm. In the case of tenants, the land assigned to each tenant is considered a separate farm, even though the landlord may consider the entire landholding to be one unit rather than several separate units.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire territory of Guam.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The 2007 CA in Guam covered “all places” from which USD 1 000 or more of agricultural products were produced and sold, or normally would have been sold, during the 12-month period between 1 January and 31 December 2007.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the 2007 CA.

### **Frame**

The census frame consisted of a list of farm operators compiled by the Guam DA.

**Complete and/or sample enumeration methods**

The census was a complete enumeration of all farms from the frame, according to census scope.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

Face-to-face interviews were held and the information was collected in paper forms (PAPI method).

**Questionnaire(s)**

One questionnaire (report form) was used for the 2007 CA; it was prepared by the NASS, in cooperation with the Guam DA. The questionnaire covered 14 of the 16 core items recommended by FAO for the WCA 2010.<sup>1</sup>

**9. USE OF TECHNOLOGY**

Optical Mark Recognition (OMR) was used to capture data from the questionnaires. The census results were disseminated online, through the USDA website.

**10. DATA PROCESSING AND ARCHIVING**

The processing of the CA 2007 for Guam was done by the NASS. Each report form was reviewed and coded prior to data keying. Report forms that did not meet the census farm definition were voided. Missing information was derived using reported data for similar farms (in terms of type and size) in nearby areas. After all the report forms had been reviewed and coded, the data were keyed and subjected to a thorough computer edit. The corrected data were then tabulated by the computer and reviewed by analysts. Prior to publication, tabulated totals were reviewed by analysts to identify inconsistencies and potential coverage problems. Comparisons were made with previous census data, as well as other available data. The computer system provided the capability to review up-to-date tallies of all selected data items for various sets of criteria, which included, but were not limited to, geographic levels, farm types and sales levels. Data were examined for each set of criteria and a write-up (criticism) was produced for data that were inconsistent. When necessary, data inconsistencies were resolved by carrying out corrections to data records.

**11. CENSUS DATA QUALITY**

Quality checks included strict field supervision, clerical screening for farm activity, follow-up of non-respondents, keying and transmittal of completed report forms, computerized editing of inconsistent and missing data, review and correction of individual records referred from the computer edit, review and correction of tabulated data, and electronic data processing.

**12. DATA DISSEMINATION**

The final results of the 2007 CA were released in February 2009. The census report included methodological notes and the census questionnaire. The census report and thematic (“special”) studies are available on the NASS website.<sup>2</sup>

**13. DATA SOURCES**

**United States Department of Agriculture, National Agricultural Statistics Service.** 2009. *2007 Census of agriculture, Guam Island Data*, Volume 1, Geographic Area Series, Part 53. Washington, D.C., United States of America. (also available at [https://www.nass.usda.gov/Publications/AgCensus/2007/Full\\_Report/Outlying\\_Areas/guam.pdf](https://www.nass.usda.gov/Publications/AgCensus/2007/Full_Report/Outlying_Areas/guam.pdf)).

**14. CONTACT**

Guam Department of Agriculture  
 Address: 163 Dairy Road, Mangilao, GU 96913; Guam, United States of America  
 Telephone: (+671) 7343942  
 Website: <https://www.nasda.org/organizations/guam-department-of-agriculture>

United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS)  
 Address: 1400 Independence Ave., SW Washington, D.C. 20250  
 Telephone: (+1) (800) 7279540; (+1) 202 7203878  
 E-mail: [nass@nass.usda.gov](mailto:nass@nass.usda.gov)  
 Website: <https://www.nass.usda.gov>

<sup>1</sup> Two items were not included in the questionnaire: (i) “Presence of irrigation on the holding”; (ii) “Other economic production activities of the holding’s enterprise”.

<sup>2</sup> These census publications are available at [https://www.nass.usda.gov/Publications/AgCensus/2007/Guide\\_to\\_Census\\_Products/](https://www.nass.usda.gov/Publications/AgCensus/2007/Guide_to_Census_Products/)

# GUAM – CENSUS OF AGRICULTURE 2007 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>104</b>	<b>405</b>
Individuals	87	n.a.
Partnership	10	n.a.
Corporation	7	n.a.

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>104</b>	<b>405</b>
Land owned	83	320
Land rented	25	85

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>104</b>	<b>405</b>
Less than 0.40 ha	13	2
0.40–0.81 ha	27	18
0.81–1.62 ha	13	18
1.62–2.83 ha	15	33
2.83–3.64 ha	4	13
3.64–7.69 ha	15	84
7.69 ha and over	17	236

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>104</b>	<b>405</b>
Cropland	97	336
Permanent meadows and pastures	10	23
Woodland	5	21
Other land	50	24

HOLDERS, BY SEX AND AGE		Number
<b>Total</b>		<b>104</b>
Male		91
Female		13
Under 35 years		3
35–44 years		15
45–54 years		19
55–64 years		32
65 years and over		35

EMPLOYEES WORKING ON THE HOLDING		Number
<b>Total</b>		<b>368</b>
Paid labour force		232
Unpaid labour force		136

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	13	112
Goats	10	124
Pigs/swine	22	635
Equines	2	n.a.
Poultry (1 000 head)	n.a.	n.a.
Chickens	n.a.	0.5
Roosters and pullets	2	0.1

SOURCES OF IRRIGATION WATER		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>96</b>	<b>229</b>
River or stream	4	n.a.
Lake or private pond	1	n.a.
Public utility	89	n.a.
Other	2	n.a.

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Total tractors of all kind	44	84
Other (machine-powered)	n.a.	
Motortrucks	96	143
Automobiles	48	61
Tillers (all kinds)	58	97

TEMPORARY CROPS HARVESTED		
	Holdings	Area (ha)
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Vegetables and melons	n.a.	n.a.
Bittermelons	17	11
Cantaloupes	5	5
Tomatoes	27	7
Watermelons	7	36
Other vegetables and melons	n.a.	85
Root/tuber crops	n.a.	n.a.
Cassava	7	2
Sweet potatoes	8	4
Taro	10	2
Yams	9	3

PERMANENT CROPS		Holdings
<b>Total</b>		<b>n.a.</b>
Tropical and subtropical fruits		n.a.
Avocados		16
Bananas		31
Breadfruits		14
Mangoes		15
Papayas		25
Pineapples		4
Guavas		7
Citrus fruits		n.a.
Grapefruits		4
Limon and limes		21
Oranges		4
Tangerines		12
Oilseed crops		n.a.
Coconuts		17
Other fruits, nuts, and tree crops		4
Nursery crops (including ornamental plants)		22

## 1. HISTORICAL OUTLINE

New Zealand has participated in the World Census of Agriculture Programme since the 1950 round. From 1955–1956 until 1987, a full postal agricultural census was conducted annually. Four other censuses were conducted, in 1990, 1994, 2002 and 2012. The metadata and data presented here refer to the latter census, the Agricultural Production Census (APC) 2012.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

Statistics in New Zealand (NZ) are regulated by the Statistics Act of 24 April 1975. Article 3 of the Act (Part 1) authorizes the Statistics Office to coordinate all official statistics. Conduct of the census was approved by the Minister of Statistics.

### *Institutional framework and international collaboration*

The APC 2012 was undertaken by Statistics NZ (Stats NZ) in consultation with the Ministry for Primary Industries (MPI). The Agricultural Production Census 2012 was funded by the national budget.

### *Census staff*

The 2012 APC was processed, analysed and disseminated by a team of 12 full-time-equivalent staff. No field staff were involved in data collection, as mail-out/mail-back data collection was used, although Statistics NZ Contact Centre staff engaged in telephone reminders and follow-up to ensure that the response rate target was met.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 30 June 2012, for total area of the farm by land use categories, for livestock, etc.

Reference periods:

- From 1 July 2011 to 30 June 2012, for changes in land ownership and new land acquisitions, cropped area, and number of offspring born alive, such as calves, lambs and fawns;
- From 1 April 2011 to 31 March 2012, for forestry items.

## 4. ENUMERATION PERIOD

The fieldwork was carried out in July 2012. All questionnaires were posted out by the end of the same month.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered all economically significant businesses engaged in “livestock, cropping, horticulture and forestry” production activities, or that owned land intended for those activities during the year ending 30 June 2012.

The following units were defined for the APC 2012 data collection:

- **Statistical unit:** the Kind of Activity Unit (KAU).
- **Selection unit:** enterprise unit.
- **Collection unit:** the unit regarding which data were collected (the “unit of interest”). It comprises “one or more blocks of land, managed as a single operation, which is engaged in agricultural or forestry production as a primary or secondary activity”. For approximately 99 percent of the population, the unit of interest equates to the statistical unit (the KAU). The remainder – enterprises owning and/or managing more than one “unit of interest” – were identified prior to posting the questionnaires. The former enterprises were contacted to determine the best way for them to provide Statistics NZ with the survey information required that could both minimize respondent burden and avoid duplication.

## 6. GEOGRAPHIC COVERAGE

The APC 2012 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The Statistics NZ Business Frame (which provides the census frame, see section 8 below) includes the following units engaged in “livestock, cropping, horticulture and forestry”:

- units registered for the Goods and Services Tax (GST) and filing a non-zero GST return that have indicated involvement in agricultural activity; and
- businesses with more than NZD 200 000 of GST sales or purchases, or that are an employer having a main activity other than agriculture but that has indicated some secondary agricultural activity.

The compulsory registration level for GST is NZD 60 000. Therefore, there is a partial and unquantifiable coverage of units below this level.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the APC 2012.

**Frame**

The frame included all units that were identified, through the Statistics NZ Business Frame or the Inland Revenue Department (IRD) Client Register, as being engaged in “livestock, cropping, horticulture and forestry” (in-scope “agricultural activity”). The Business Frame is a list of businesses in New Zealand based on firms registered for GST with the IRD, while the Client Register consists of all businesses registered with that department. The population included the “lifestylers” who were identifiable on the IRD’s Client Register or the Statistics NZ Business Frame as being engaged in in-scope agricultural activity.

**Complete and/or sample enumeration methods**

The APC 2012 was based on a complete enumeration of the agricultural businesses registered for GST.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

The APC was a postal survey (mail-out/mail-back). The selected farmers and growers were asked to complete and return questionnaires within 14 days of receipt. A complete return was requested for anyone carrying out farming, horticultural or forestry activities.

**Questionnaire(s)**

One questionnaire was used for data collection. The questionnaire covered 11 of the 16 core items recommended in the WCA 2010.<sup>1</sup>

**9. USE OF TECHNOLOGY**

Optical scanning was used for data capture. The census results were disseminated online.

**10. DATA PROCESSING AND ARCHIVING**

Data collection was done with forms suitable for the optical scanning used for data entry relating to the APC 2012 questionnaires. The method of imputation for missing data was random “hot deck” imputation. Data with high imputation levels were suppressed and were indicated by “S” in the tables.

**11. CENSUS DATA QUALITY**

As published information must maintain the confidentiality of individual respondents, the figures in the tables affected by these provisions are denoted by “C”. The proportion of eligible businesses that responded to the APC 2012 for the final release was 85 percent. These businesses represented 88 percent of the total estimated value of agricultural operations.

**12. DATA DISSEMINATION**

Provisional census results were disseminated in December 2012 and final results were published in May 2013. Products published included a media release, industry commentary, key facts, Microsoft Excel tables and other data tables in Statistics NZ’s data dissemination tools, Infoshare and NZ.Stat.

Census information is available on the Statistics NZ’s website. Agricultural data can also be found in the Statistics NZ Yearbooks.

**13. DATA SOURCES**

**Statistics New Zealand.** 2012a. Agricultural Production Census: June 2012 (Final). In: *Statistics New Zealand* [online]. Tauranga Aotearoa. [Cited 30 July 2019]. [http://datainfolplus.stats.govt.nz/Item/nz.govt.stats/6362a469-f374-412e-ac25-d76fd0962003?\\_ga=2.174570658.1677434909.1542154303-1815097426.1540410958#/nz.govt.stats/db8e2f80-cfa0-4d25-8634-6bd37a2c7a6d/27](http://datainfolplus.stats.govt.nz/Item/nz.govt.stats/6362a469-f374-412e-ac25-d76fd0962003?_ga=2.174570658.1677434909.1542154303-1815097426.1540410958#/nz.govt.stats/db8e2f80-cfa0-4d25-8634-6bd37a2c7a6d/27)

**Statistics New Zealand.** 2012b. Agriculture Production Surveys Censuses. In: *Statistics New Zealand* [online]. Tauranga Aotearoa. [Cited 30 July 2019]. [http://datainfolplus.stats.govt.nz/Item/nz.govt.stats/6362a469-f374-412e-ac25-d76fd0962003?\\_ga=2.174570658.1677434909.1542154303-1815097426.1540410958#/nz.govt.stats/db8e2f80-cfa0-4d25-8634-6bd37a2c7a6d/27](http://datainfolplus.stats.govt.nz/Item/nz.govt.stats/6362a469-f374-412e-ac25-d76fd0962003?_ga=2.174570658.1677434909.1542154303-1815097426.1540410958#/nz.govt.stats/db8e2f80-cfa0-4d25-8634-6bd37a2c7a6d/27)

**14. CONTACT**

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<sup>1</sup> The following items were not covered: (i) “Sex of agricultural holder”; (ii) “Age of agricultural holder”; (iii) “Household size”; (iv) “Presence of aquaculture on the holding”; and (v) “Other economic production activities of the holding’s enterprise”.

# NEW ZEALAND – AGRICULTURAL PRODUCTION CENSUS 2012 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>58 071</b>	<b>14 393 802</b>

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES <sup>1</sup>	
	Holdings
<b>Total holdings with land</b>	<b>58 071</b>
Less than 5 ha	9 006
5–9 ha	5 760
10–19 ha	5 958
20–39 ha	5 814
40–59 ha	3 480
60–79 ha	2 649
88–99 ha	2 640
100–199 ha	8 304
200–399 ha	7 401
400–599 ha	2 739
600–799 ha	1 299
800–999 ha	750
1 000–1 999 ha	1 320
2 000–3 999 ha	540
4 000 ha and over	408

LAND USE	
	Area (ha)
<b>Total area of holdings</b>	<b>14 393 802</b>
Agricultural land	11 225 086
Arable land	524 367
Permanent crops	71 486
Permanent meadows and pastures	10 629 233
Forest and other wooded land	2 758 757
Other land	409 958

LIVESTOCK	
	Head
Cattle	10 180 093
Dairy cattle	6 445 681
Beef cattle	3 734 412
Sheep	31 262 715
Goats	90 096
Pigs/swine	313 703
Horses	56 878
Alpacas and llamas	14 168
Other animals	
Ostriches and emus	1 177
Deer	1 060 094

<sup>1</sup> Farmcounts are rounded to a basis of three; the sum of components may be slightly different from the total.

TEMPORARY CROPS HARVESTED	
	Area (ha)
<b>Total</b>	<b>n.a.</b>
Grain and seed crops harvested	n.a.
Wheat	54 751
Maize	19 442
Barley	65 703
Oats	3 885
Other cereals grains	2 063
Vegetable seeds	8 292
Herbage seeds	29 856
Field/seed peas	6 399
Other pulses	1 167
All other grain and seed crops	4 805
Vegetables	n.a.
Asparagus	820
Broccoli	1 977
Peas	6 672
Pumpkin	1 048
Squash	6 837
Tomatoes	118
Other vegetables and herbs grown	14 010
Potatoes	11 578

PERMANENT CROPS	
	Area (ha)
<b>Total</b>	<b>n.a.</b>
Tropical and subtropical fruits	n.a.
Avocados	4 149
Persimmons	154
Citrus fruits	n.a.
Oranges	696
Grapefruit/goldfruit	32
Lemons	371
Mandarins	691
Tangelos	67
Berries	n.a.
Blackcurrants	1 408
Blueberries	579
Raspberries	132
Pome fruits and stone fruits	n.a.
Apples	8 845
Pears	617
Nashi pears	76
Peaches	452
Apricots	434
Nectarines	409
Cherries	619
Plums	362
Nuts	n.a.
Chestnuts	142
Hazelnuts	433
Macadamia	195
Walnut	574
Oilseed crops	<b>n.a.</b>
Olives	1 657
Other	396
Grapes	34 605

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) in Niue was conducted in 1989. The second one, to which the metadata review and data presented here refer, was carried out after 20 years, in 2009.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legislative acts for carrying out the AC 2009 in Niue include:

- Niue Statistics Act 2009
- Niue Census Act 1971
- 1989 – Niue Assembly Census Ordinance 1971, No. 68 and the Amendment Act 1976

### **Institutional framework and international collaboration**

Statistics Niue (SN), in close collaboration with the Department of Agriculture, Forestry and Fisheries (DAFF) of the Ministry of Natural Resources, had the responsibility for the census operations. As Census Officer, the Niue Government Statistician assumed responsibility for the day-to-day activities of the census, including the supervision of the fieldwork and the checking, editing and coding of the completed questionnaires. The DAFF Secretary assumed the related responsibilities as Census Co-ordinator.

FAO, the Samoa Bureau of Statistics and the National Statistics Office of the Philippines provided technical assistance for the census.

### **Census staff**

The fieldwork involved 20 enumerators and 4 field supervisors.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 21 November 2009, for household characteristics, land use, land tenure, existence of equipment owned, etc.

### **Reference periods:**

- from 1 January 2009 to the day of the interview, for identification of holdings operated by the household, use of fertilizers and agricultural pesticides, crops sown and harvested, and plot details;
- the month prior to interview, for consumption of crops;
- the last five years, for receipt of credit.

## 4. ENUMERATION PERIOD

The enumeration was conducted from 9 to 22 November 2009.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). Detailed information on the capture fisheries activities of household members was also collected.

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production under single management, comprising all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form or size. According to legal status, the holdings were classified as: (i) individual household on own account; (ii) in partnership; (iii) a village association; or (iv) institution.

## 6. GEOGRAPHIC COVERAGE

The AC 2009 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

If the agricultural activity of the household was below the following limits, only the household form was applied: (i) one eighth of an acre (0.05 ha) of any crop; or (ii) 20 coconuts or banana trees.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2009. A mini-census of the population was conducted jointly with the AC.

### **Frame**

The 2006 Population Census (PC) served as a census frame for the AC 2009.

### **Complete and/or sample enumeration methods**

The census was conducted using complete enumeration.

### **Sample design (if sampling was used)**

Not applicable.



### **Data collection method(s)**

The interviews were conducted face-to-face and the information was collected through paper forms (that is, using the PAPI method).

### **Questionnaire(s)**

Data were collected by means of three questionnaires: (i) the household form (comprising indicators on household composition), which applied to all households; (ii) the holding form; and (iii) the parcel form. The latter two forms were applied to holdings above the established threshold.

Of the 16 core items recommended for collection by FAO in the WCA 2010, 14 were covered in the AC.<sup>1</sup>

## **9. USE OF TECHNOLOGY**

The AC data were disseminated online.

## **10. DATA PROCESSING AND ARCHIVING**

Once the questionnaires had been thoroughly checked and edited, they were coded in preparation for data processing. The data were entered manually, using two office computers of Statistics Niue. The data entry application was designed using CSPro software, with the assistance of the National Statistics Office of the Philippines.

## **11. CENSUS DATA QUALITY**

Overall, the standard of enumeration was high.<sup>2</sup> A PES was conducted to evaluate the accuracy of the data. The PES used objective measurement techniques (compass and tape measure) to measure the physical area of the selected parcels of land.

The results of the survey revealed differences between the areas recorded in the census interview and the physical area as measured.<sup>3</sup>

## **12. DATA DISSEMINATION**

The census results were disseminated through a printed final report and the website of Statistics Niue.

## **13. DATA SOURCES**

**FAO.** Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 6-10 November 2017, Nadi, Fiji. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 16 September 2019] <http://www.fao.org/index.php?id=85857>

**Statistics Niue.** *Agricultural Census of Niue, 2009, Final Report*. Alofi. (also available at [http://www.fao.org/fileadmin/templates/ess/ess\\_test\\_folder/World\\_Census\\_Agriculture/Country\\_info\\_2010/Reports/Reports\\_4/NIU\\_ENG\\_REP\\_2009.pdf](http://www.fao.org/fileadmin/templates/ess/ess_test_folder/World_Census_Agriculture/Country_info_2010/Reports/Reports_4/NIU_ENG_REP_2009.pdf)).

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<sup>1</sup> The items that were not covered were: (i) "Presence of aquaculture on the holding"; (ii) "Presence of irrigation on the holding".

<sup>2</sup> The tasks of the enumerators were undoubtedly facilitated by the fact that they were selected from the EAs they were familiar with; in addition, with less than 500 households in Niue, most individuals knew each other and their respective activities. The field supervisors were tasked with regularly checking the enumerators' progress and with reporting to the census manager (a Government Statistician) on a daily basis.

<sup>3</sup> This was evident in the areas that were slashed and burned, and in the areas where there were bush or wild fires. The areas cleared by a bulldozer were fairly accurate.

## NIUE – AGRICULTURAL CENSUS 2009 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>429</b>	<b>762</b>

LAND FRAGMENTATION		
	Holdings	Number of parcels
<b>Total</b>	<b>429</b>	<b>1 267</b>
1 parcel	112	n.a.
2–3 parcels	175	n.a.
4–5 parcels	98	n.a.
6–9 parcels	44	n.a.

DISTRIBUTION OF PARCELS BY LAND SIZE CLASSES		
	Number of parcels	Area (ha)
<b>Total</b>	<b>1 267</b>	<b>762</b>
Less than 0.4 ha	373	68
0.4–0.8 ha	542	243
0.8–1.2 ha	183	153
1.2–2.0 ha	131	182
2.0–4.0 ha	32	81
4.0 ha and over	6	34

HOLDERS, BY SEX AND AGE		
	Number	
<b>Total</b>	<b>488</b>	
Male	375	
Female	113	
10–19 years	5	
Male	5	
Female	--	
20–39 years	109	
Male	91	
Female	18	
40–59 years	224	
Male	180	
Female	44	
60 years and over	150	
Male	99	
Female	51	

LABOUR FORCE OF THE HOLDING, BY SEX		
	Number	
<b>Total</b>	<b>1 291</b>	
Family members engaged in agricultural activities on the holding	1 273	
Non-household members	18	
Paid labour force	10	
Unpaid labour force	8	

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>336</b>	
Cattle	7	7
Pigs/swine	237	1 743
Chickens (1 000 head)	288	12

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Bulldozer	271	n.a.
Knapsack	n.a.	414
Chainsaw	n.a.	284
Brush cutter	n.a.	546
Rotary hoe	n.a.	28

TEMPORARY CROPS HARVESTED	
	Holdings
<b>Total</b>	<b>n.a.</b>
Cereals	n.a.
Corn	263
Vegetables and melons	n.a.
Cucumbers	249
Eggplants	138
Lettuce	138
Pumpkin	173
Spring onions	332
Tomatoes	286
Watermelons	249
Root/tuber crops	n.a.
Cassava	332
Yams	312
Taro	353
Leguminous crops	n.a.
Beans	140
Sugar crops	n.a.
Sugar cane	36

PERMANENT CROPS	
	Holdings
<b>Total</b>	<b>n.a.</b>
Tropical and subtropical fruits	n.a.
Pineapples	152
Avocados	224
Breadfruits	332
Mango	274
Papayas	357
Citrus fruits	n.a.
Grapefruit	134
Lemons	144
Limes	234
Oranges	135
Nuts	n.a.
Chestnuts	80
Oilseed crops	n.a.
Coconuts	396
Beverage crops and spice crops	n.a.
Coffee	15
Kava	120

The Northern Mariana Islands is one of the areas collectively referred to as “U.S. Outlying Areas”. For statistical purposes, it is recorded as a separate entity in the World Census of Agriculture Database (in the Oceania Region). Consequently, results related to the United States of America bear only upon the continental territory of the country.

## 1. HISTORICAL OUTLINE

The first agricultural census in the Commonwealth of Northern Mariana Islands (CNMI) was conducted in 1970, in conjunction with the decennial population census. This practice was continued in 1980 and 1990. However, in 1998, the CNMI carried out the first agriculture census separately from the population census. The self-standing agriculture census was conducted by NASS. The 2002 Census of Agriculture (CA) in the CNMI, the fifth in the series, was synchronized with the quinquennial programme of agricultural censuses followed in the mainland United States of America. The CA 2007 in the CNMI continues the programme on the same five-year cycle used for the main agriculture census of the United States of America.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The CA is required by law under the Census of Agriculture Act of 1997, Public Law 105-113 (Title 7, United States Code, Section 2204g). The law directs the Secretary of Agriculture to conduct a CA every five years, covering the prior year.

The 2007 CA was conducted in accordance with a Memorandum of Understanding approved by the Administrator of the National Agricultural Statistics Service (NASS) of the U.S. Department of Agriculture (USDA), and the Department of Commerce (DC) of the CNMI.

### **Institutional framework and international collaboration**

The USDA/NASS is responsible for conducting the CA 2007, with cooperation and assistance from the DC of the CNMI. The NASS provided technical assistance at various levels, while the DC of the CNMI was responsible for recruiting and training local officers and field staff and supervising local administrative matters. The 2007 CA was funded by the U.S. federal budget.

### **Census staff**

The project manager, crew leaders and enumerators employed for the census in the CNMI received special training in accordance with instructions prepared by the NASS and the DC of the CNMI. The training included practice in interviewing and filling out the report form, in addition to detailed discussion of the enumerator’s instructions. One NASS staff was assigned to the CA in the CNMI.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of enumeration, for inventory items such as number of livestock, machinery and equipment.

**Reference period:** the calendar year, from 1 January to 31 December 2007, for other items, such as crop production, crop and livestock sales, expense data and aquaculture.

## 4. ENUMERATION PERIOD

Data collection was conducted from January to July 2008.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **scope of the census** covered only agricultural activities (crop and livestock production).

The **statistical unit** was the farm, defined as any place from which USD 1 000 or more of agricultural products were produced and sold, or normally would have been sold, during the calendar year 2007. According to the census definition, a farm is essentially an operating unit, not an ownership tract. All land operated or managed by one person or partnership represents one farm. In the case of tenants, the land assigned to each tenant is considered a separate farm, even though the landlord may consider the entire landholding to be one unit rather than several separate units.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire territory of the CNMI.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The CA 2007 covered “all places from which USD 1 000 or more of agricultural products were produced and sold, or normally would have been sold, during the 12-month period between January 1 and December 31, 2007”.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the CA 2007.

**Frame**

The census frame was a list<sup>1</sup> of farm operators compiled by the DC of the CNMI. In addition, the local department of agriculture provided a list of known farmers.

**Complete and/or sample enumeration methods**

The census was a complete enumeration of all farm operators identified in the frame.

**Sample design (if sampling was used)**

Not applicable.

**Data collection method(s)**

Data collection was done by traditional face-to-face interviews using the PAPI method.

Each enumerator was an employee of the DC of the CNMI and had been assigned to a specified names on the list of farm operators.<sup>2</sup>

**Questionnaire(s)**

One questionnaire (report form) was used for the CA 2007; it was prepared by the NASS, in cooperation with the DC of the CNMI.<sup>3</sup> The questionnaire covered 15 of the 16 core items recommended in the WCA 2010.<sup>4</sup>

**9. USE OF TECHNOLOGY**

All questionnaires were scanned using OMR. The census results were disseminated online, through the NASS website.

**10. DATA PROCESSING AND ARCHIVING**

The processing of the CA 2007 was done by the DC of the CNMI. Each report form was reviewed and coded prior to data entry. Reports for individuals or establishments not meeting the census farm definition were excluded. The remaining report forms were examined for accuracy, consistency and completeness. After all report forms had been reviewed and coded, the data were keyed and subjected to a thorough computer edit. The corrected data were then tabulated by the computer and reviewed by analysts.

Prior to publication, tabulated totals were reviewed by analysts in Saipan, with assistance from NASS personnel, to identify inconsistencies and potential coverage problems. Comparisons were made with previous census data, as well as with other available data.

**11. CENSUS DATA QUALITY**

Quality checks included strict field supervision, clerical screening for farm activity, follow-up on non-respondents, keying and transmission of completed report forms, computerized editing of inconsistent and missing data, review and correction of individual records referred from the computer edit, review and correction of tabulated data, and electronic data processing.

**12. DATA DISSEMINATION**

The final results of the CA 2007 were released in February 2009. The census report included methodological notes and a questionnaire. The census report and thematic (“special”) studies are available on the NASS website.

**13. DATA SOURCES**

**United States Department of Agriculture, National Agricultural Statistics Service.** 2009. *2007 Census of Agriculture: Northern Mariana Islands Commonwealth and Island Data. Volume 1, Geographic Area Series, Part 56.* (also available at [https://www.nass.usda.gov/Publications/AgCensus/2007/Full\\_Report/Outlying\\_Areas/cnmi.pdf](https://www.nass.usda.gov/Publications/AgCensus/2007/Full_Report/Outlying_Areas/cnmi.pdf)).

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Website: <https://www.nass.usda.gov>

<sup>1</sup> The core of this list was a compilation of all persons having a business license to sell agricultural products.

<sup>2</sup> If a person on the list did not operate a farm, the enumerator recorded whether the land had been sold or rented to another person and was still being used for agriculture. If so, the enumerator obtained the name of that person and followed up to ensure that he or she was included in the census.

<sup>3</sup> The questionnaire allows for collecting specific information on the value and volume of sales, other economic activities of holding and sources of income.

<sup>4</sup> The exception is the item “Other economic production activities of the holding’s enterprise”.

# NORTHERN MARIANA ISLANDS – CENSUS OF AGRICULTURE 2007 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>256</b>	<b>1 624</b>
Family and individuals	232	n.a.
Partnership	10	n.a.
Cooperation	13	n.a.
Other	1	n.a.

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>256</b>	<b>1 624</b>
Owned	146	465
Rented from others	115	1 159

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>256</b>	<b>1 624</b>
Less than 0.4 ha	23	5
0.40–0.80 ha	51	30
0.80–1.60 ha	58	66
1.60–3.20 ha	40	90
3.20–4.00 ha	9	29
4.00–8.00 ha	38	198
8.00–16.00 ha	13	153
16.00–20.00 ha	4	77
20.00 ha and over	20	975

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>256</b>	<b>1 624</b>
Agricultural land	n.a.	1 509
Cropland	213	313
Harvested cropland	208	218
Other cropland	91	95
Permanent meadows and pastures	75	1 196
Wooded land	30	78
Other land	127	38

HOLDERS, BY SEX AND AGE		Number
<b>Total</b>		<b>256</b>
Male		226
Female		30
Under 35 years		14
35–44 years		53
45–54 years		79
55–64 years		75
65 years and over		35

LABOUR FORCE OF THE HOLDING		Number
<b>Total</b>		<b>676</b>
Unpaid labour force		344
Paid labour force		332

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	63	1 395
Goats	19	276
Pigs/swine	62	1 483
Poultry (1 000 head)	n.a.	n.a.
Chickens	n.a.	10
Roosters and pullets	41	1
Fighting roosters	26	1
Ducks	10	0.4
Pigeons	9	0.3

SOURCE OF IRRIGATION WATER		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>165</b>	<b>138</b>
Well or cistern	27	n.a.
River and stream	8	n.a.
Public utility	126	n.a.
Other	4	n.a.

MACHINERY AND EQUIPMENT USED ON THE HOLDING		
	Holdings	Units
Total tractors of all kind	88	99
Other (machine-powered)	n.a.	
Motortrucks	88	99
Automobiles	166	201
Tillers	96	110

## 1. HISTORICAL OUTLINE

The 2015 Census of Population, Housing and Agriculture (CPHA) is the first census in Palau in which items on agricultural activities of households were included in a census.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Statistics Act of 2011 gives the Office of Planning and Statistics (OPS) of the Ministry of Finance the authority to collect, compile and disseminate Palau's statistical data.<sup>1</sup>

### **Institutional framework and international collaboration**

The CPHA 2015 was undertaken by the Office of Planning and Statistics (OPS), with funding support from the United States Department of the Interior, Office of Insular Affairs and with technical support from the Statistics for Development Division (SDD) of the Secretariat of the Pacific Community (SPC), which provided assistance for development, implementation and processing for the census.

With the support of the Office of Palau Automated Land and Resources Information System (PALARIS), the census enumeration was conducted using updated maps. PALARIS staff provided assistance on a daily basis for the census enumeration.

The Ministry of Finance's Bureau of the National Treasury and the Bureau of Public Services System provided significant support towards assisting OPS in streamlining processes related to the hiring of census staff and the processing of payments.

### **Census staff**

No information was provided in the census report available.

## 3. REFERENCE DATE AND PERIOD

### **Reference day:**

- 6 April 2015, for demographic characteristics of the households;
- the day of enumeration, for other inventory items, such as livestock numbers.

**Reference period:** the last 12 months, for items such as fishing and main use of the production.

## 4. ENUMERATION PERIOD

The CPHA enumeration was conducted in April 2015.<sup>2</sup>

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered only agricultural activities (crop and livestock production). Information on the fishery activities of households was also collected.

The **statistical unit** in the CPHA 2015 was the household.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire territory of the country, including both rural and urban areas

## 7. CUT-OFF THRESHOLDS AND OTHER EXCLUSIONS

The non-household sector was not covered in the census.

## 8. METHODOLOGY

### **Methodological modality for conducting the agricultural census**

Agriculture-related data were collected based on the "Core agriculture and fishing" module of the CPHA 2015 questionnaire.

### **Frame**

The EAs were the smallest geographical units into which the country was divided for census data collection. In most cases, one enumerator was responsible for data collection in a single EA.

### **Complete and/or sample enumeration methods**

The CPHA was based on the complete enumeration of all agricultural households identified during the 2015 census enumeration.

### **Sample design**

No sampling was used.

<sup>1</sup> See **Palau National Government Services**, 2019 <https://www.palau.gov.pw/executive-branch/ministries/finance/budgetandplanning/general-data-dissemination-system-gdds-metadata/>

<sup>2</sup> The CPHA started in "early April 2015". The exact enumeration period was not specified in the census report available (see section 13).

**Data collection method(s)**

The CPHA 2015 of Palau was conducted using conventional door-to-door enumeration (PAPI).

**Questionnaire(s)**

Agriculture-related data were collected through the Core agriculture and fishing module of the CPHA 2015 questionnaire.

Overall, 12 of the 16 core items recommended in the WCA 2010 were included in the CPHA.<sup>3</sup>

**9. USE OF TECHNOLOGY**

The census results were disseminated online.

**10. DATA PROCESSING AND ARCHIVING**

Data entry, edits and tabulations programs were provided by the SPC (SDD). Census data were manually captured. The keyed data were then processed (editing and cleaning) using the Consistency and Correction (CONCOR) package. The Census Tabulation System (CENTS) was used for tabulation.

**11. CENSUS DATA QUALITY**

Quality assurance methods were used throughout the data collection and processing phases of the census to improve the quality of the data. The enumerators conducted an initial check of the questionnaires for completeness and consistency. The census office staff performed additional coverage and edit checks. Those households for which questionnaires did not meet specific quality standards because of incomplete information were contacted through personal visits, to obtain the missing information.

**12. DATA DISSEMINATION**

The final census results were disseminated through the CPHA 2015 report and institutional websites.

**13. DATA SOURCES**

**Office of Planning and Statistics, Bureau of Budget and Planning.** 2019. *2015 Census of Population Housing and Agriculture for the Republic of Palau, Volume 1, Basic Tables*. Koror, Palau. (also available at <https://www.palau.gov.pw/wp-content/uploads/2017/02/2015-Census-of-Population-Housing-Agriculture-.pdf>).

**Palau National Government Services (PalauGov Services).** 2019. General Data Dissemination System (GDDS) Metadata. In: *PalauGov Services* [online]. Koror [Cited 07 September 2019]. <https://www.palau.gov.pw/executive-branch/ministries/finance/budgetandplanning/general-data-dissemination-system-gdds-metadata/>

**14. CONTACT**

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<sup>3</sup> The following core items were not covered by the CPHA: (i) "Area of the holding according to land use types"; (ii) "Land tenure types on the holding"; (iii) "Types of temporary crops on the holding"; (iv) "Type of permanent crops on the holding".

LAND FRAGMENTATION		
	Holdings	Area
<b>Holdings with agricultural land</b>	<b>1 179</b>	<b>n.a.</b>
1 parcel	585	n.a.
2–3 parcels	325	n.a.
4–5 parcels	126	n.a.
6–8 parcels	50	n.a.
9 parcels and over	93	n.a.

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES	
	Holdings
<b>Holdings with agricultural land</b>	<b>1 179</b>
Less than 0.01 ha	305
0.01–0.02 ha	148
0.02–0.04 ha	176
0.04–0.06 ha	96
0.06–0.08 ha	59
0.08–0.1 ha	52
0.1–0.5 ha	231
0.5 ha and over	112

LAND USE	
	Holdings
<b>Agricultural land</b>	<b>1 179</b>
Arable land	n.a.
Land under temporary meadows	92
Land temporarily fallow	196
Kitchen garden	593
Permanent meadows and pastures	141
Forest and other wooded land	598

LIVESTOCK	
	Holdings
<b>Holdings with livestock</b>	<b>n.a.</b>
Cattle	7
Goats	7
Pigs/swine	115
Poultry	116

IRRIGATION	
	Holdings
<b>Total holdings with irrigated land</b>	<b>91</b>



## 1. HISTORICAL OUTLINE

Samoa conducted its first Agricultural Census (AC) in 1989. The second census was carried out in 1999 and the third one, to which the metadata review and data presented here refer, was undertaken in 2009.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The Authority for the AC rested with the Government Statistician under the Statistics Act 1971 (updated as the Statistics Act 2015).

### **Institutional framework and international collaboration**

The AC 2009 was organized and conducted by the Samoa Bureau of Statistics (SBS), as a joint exercise with the Ministry of Agriculture and Fisheries (MAF).

A Census Advisory Committee was established for the AC. It was chaired by the Government Statistician and comprised the following institutions: the Ministry of Foreign Affairs, the Ministry of Agriculture, the Ministry of Internal Affairs, the Ministry of Finance, the Ministry of Women Affairs, and farmers' associations.

The AC 2009 was jointly funded by the Government of Samoa and the Government of Australia, through AusAid. The Secretariat of the Pacific Community provided technical assistance.

### **Census staff**

Approximately 300 field staff were involved in data collection.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of enumeration, for inventory items, such as area of holding and livestock numbers.

### **Reference periods:**

- from 1 January 2009 to the day of the interview, for crops grown, agricultural income, use of fertilizers and pesticides, fishing, forestry;
- the week prior to the day of enumeration, for labour inputs.

## 4. ENUMERATION PERIOD

The enumeration period was from 31 October to 30 November 2009.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production), as well as fisheries activities. Some items related to forestry activity were also collected.

The **statistical unit** for the AC data collection was the agricultural holding, defined as an economic unit of agricultural production, under single management, comprising of all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form or size. Single management may be exercised by an individual or household, jointly by two or more individuals or households, by a clan or tribe, or by a juridical person such as a corporation, cooperative or government agency.

Holdings were classified as one of the following main legal status types: (i) individual household; (ii) in partnership; (iii) village association; and (iv) institution.

## 6. GEOGRAPHIC COVERAGE

The census covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following minimum size limits were used for households engaged in agricultural activity: (i) one eighth of an acre (0.05 ha) of any crop; (ii) 20 coconuts or banana trees; (iii) or 20 other trees.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2009. The data collection comprised two phases:

- During the first phase, all households were screened by means of the household form. If any agricultural activity was detected, then a holding form was filled out.
- In the second phase, a "parcel form" was applied to 25 percent of the agricultural holdings, as identified in the first phase.

### **Frame**

The census frame for the holdings in the household sector was the 2006 Population Census.

**Complete and/or sample enumeration method(s)**

The AC 2009 was conducted using a combination of complete enumeration and sample enumeration.

**Sample design (if sampling was used)**

A systematic sampling selection was performed in the second phase of the AC, for holdings in the household sector. The sampling fraction constituted 25 percent of the holdings detected in the first census phase.

**Data collection method(s)**

Data were collected through face-to-face interviews with paper forms (using the PAPI method).

**Questionnaire(s)**

Three census forms were used in the AC 2009:

- the Household form, which was applied to all households to identify the agricultural holdings;
- the Holding form, applied to the agricultural holdings; and
- the Parcel form, filled in by the holdings selected in the sample.

The AC 2009 questionnaires covered 12 items of the 16 core items<sup>1</sup> recommended for the WCA 2010 round.

**9. USE OF TECHNOLOGY**

The census results were disseminated through the website of the SBS.

**10. DATA PROCESSING AND ARCHIVING**

Manual edits were first done by the supervisors in the field and, later, in the main office, by a team of eight staff for three months. CSPRO software was used for data processing. The Secretariat of the Pacific Community provided technical assistance for all activities from data processing to data tabulation.

**11. CENSUS DATA QUALITY**

Although the census forms were completed to high standards in terms of completeness and consistency, the information on parcels required special attention, particularly in terms of plot area.<sup>2</sup>

**12. DATA DISSEMINATION**

The AC 2014 results were released through printed reports, the SBS website and dissemination events. Two census publications (titled, respectively, *Tabulation Report* and *Analytical Report*) were produced to disseminate the final census results, in November 2011.

**13. DATA SOURCES**

**Economics Statistics Division, Samoa Bureau of Statistics.** 2012. *Agricultural Census 2009, Analytical Report*. Apia, Samoa. (also available at <https://pafpnet.spc.int/attachments/article/553/2009%20Agriculture%20Census%20Analytical%20report.pdf>).

**FAO.** Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 6-10 November 2017, Nadi, Fiji. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 16 September 2019]. <http://www.fao.org/index.php?id=85857>

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Website: [www.sbs.gov.ws](http://www.sbs.gov.ws)

<sup>1</sup> The following four items were not covered: (i) "Presence of irrigation on the holding"; (ii) "Presence of aquaculture on the holding"; (iii) "Presence of forests and other woodland on the holding"; and (iv) "Other economic production activities of the holding's enterprise".

<sup>2</sup> For example, the respondent was required to provide the area or the number of plants, if the plot was planted as a single crop. However, in some cases, both were provided. In this case, the number of plants took priority. In the case of mixed crops, the proportion of mixed crops was to be given for up to four crops. If the proportion of mixed crops was not given, then each crop of the mix was assumed to be in equal proportion.

# SAMOA – AGRICULTURAL CENSUS 2009 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>15 793</b>	<b>37 357</b>
Individuals	15 692	37 140
Partnership	74	164
Village association	8	30
Institution	15	15
Not stated	4	8

LAND TENURE		
	Holdings	Area (ha)
<b>Total</b>	<b>15 793</b>	<b>37 357</b>
Land under customary ownership	n.a.	32 017
Land under owned freehold land	n.a.	3 229
Rented from others	n.a.	1 717
Land customary leased	n.a.	306
Leased government land	n.a.	1 086
Land under leased freehold land	n.a.	325
Other form of tenure	n.a.	180
Not stated	n.a.	214

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total</b>	<b>15 793</b>	<b>37 357</b>
Less than 0.4 ha	1 306	21
0.4–0.8 ha	3 022	298
0.8–2 ha	6 213	1 039
2.0–4.0 ha	3 178	4 433
4.0–8.0 ha	1 374	12 786
8.0–20 ha	544	6 327
20–40 ha	108	4 272
40 ha and over	48	8 180

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>15 793</b>	<b>37 357</b>
Agricultural land	n.a.	34 706
Crop land	n.a.	29 642
Land under other crops	n.a.	4 403
Land under permanent crops	n.a.	3 658
Tree crops and others	n.a.	20 416
Land temporarily fallow	n.a.	1 166
Permanent pasture and meadows	n.a.	5 064
Other land	n.a.	2 650
Land under non-agricultural use	n.a.	2 417
Not stated	n.a.	233

HOLDERS, BY SEX AND AGE		Number
<b>Total</b>		<b>24 640</b>
Male		19 009
Female		5 631
15–59 years		19 382
Male		15 415
Female		3 967
60 years and over		5 159
Male		3 516
Female		1 643
Not stated		99
Male		78
Female		21

EMPLOYEES WORKING ON THE HOLDING, BY SEX		Number
<b>Total</b>		<b>3 045</b>
Male		2 869
Female		148

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	4 238	38 954
Sheep	26	249
Goats	7	128
Pigs/swine	12 026	152 145
Horses	821	1 259
Poultry (1 000 head)	n.a.	n.a.
Chickens	13 354	307
Ducks	57	0.3

HOLDINGS BY MAIN PURPOSE OF PRODUCTION		Holdings reporting
<b>Total producing mainly for</b>		<b>15 791</b>
Home consumption/subsistence		15 063
Sale		728

MACHINERY AND EQUIPMENT BELONGING TO THE HOLDING		
	Holdings	Units
Total tractors of all kind	37	63
Other (machine-powered)	n.a.	
Rototiller	39	55
Copra drier	372	383
Banana injector	564	653
Knapsack sprayer	7 149	8 396
Mist blower	342	410
Power slasher	5 463	8 069
Chainsaw	3 598	4 603
Irrigation water pump	135	219
Electric generator	294	386
Pickup or truck	3 080	4 824
Motorized boat	132	183

## 1. HISTORICAL OUTLINE

The first Agricultural Census (AC) in Tonga was conducted in 1985.<sup>1</sup> The second one was carried out in 2001, and the third AC,<sup>2</sup> to which the metadata review and data presented here refer, was undertaken after 14 years, in 2015.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal basis for the AC 2015 was provided by Tonga Statistics Act No. 31 (1978).

### **Institutional framework and international collaboration**

The AC 2015 was jointly implemented by the Ministry of Agriculture, Food, Forestry and Fisheries (MAFFF) and the Tonga Statistics Department (TSD), because the authority for implementation of the census rest with the Government Statistician, who has the legal power to collect such information under the Statistics Act 1978. The Chief of the Policy and Planning Section of the Corporate Services Division of MAFFF was appointed as the National Project Coordinator, who, with the assistance of the Principal Statistician of the TSD, is responsible for guiding and supervising the entire census exercise. A National Agriculture Census Committee was constituted. FAO provided technical assistance.

### **Census staff**

The fieldwork involved 94 enumerators and 19 field supervisors.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** the day of the interview, for household characteristics, land use, land tenure, stock owned machinery and equipment.

**Reference period:** the last twelve months, for identification of holdings operated by the household, labour force, income and loans, plot details, etc.

## 4. ENUMERATION PERIOD

The enumeration was conducted from 7 April to 30 June 2015.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). Detailed information on the capture fisheries activities of household members was also collected.

The **statistical unit** was the farm. The following categories of farms were identified for the AC 2015:

- commercial enterprises and households producing crops mainly for sale or export;
- households producing crops mainly for their own consumption but selling any surplus;
- households producing crops solely for their own consumption;
- households with little or no agricultural activity.

## 6. GEOGRAPHIC COVERAGE

The AC 2015 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

Not applied.

## 8. METHODOLOGY

### **Methodological modality for conducting the census**

The classical approach was used in the AC 2015.

### **Frame**

The 2011 Population Census served as a frame for the holdings in the household sector.

### **Complete and/or sample enumeration methods**

The AC 2015 was conducted using complete enumeration.

### **Sample design (if sampling was used)**

Not applicable.

<sup>1</sup> Before and after this census, a number of important surveys were undertaken in the agricultural sector, covering subjects such as Consumption and Production of Crops, Livestock and Fish (1970 and 1980), Coconut Palms (1979), Coconut Age Distribution and Productivity (1980), Agricultural Inputs (1982/83), Land Utilization (1982), Animal Health Survey (1994), Annual Crop Survey (1991/92), Land Use and Crop Survey (1993), and Inventory of Coconut Palm Resources (1996).

<sup>2</sup> The Tonga National Agricultural Census.

**Data collection method(s)**

The interviews were conducted on a face-to-face basis and the information was collected in paper forms (that is, using the PAPI method).

**Questionnaire(s)**

One census questionnaire was used in the AC 2015. The AC 2015 covered 14 of the 16 core items recommended by FAO for the WCA 2010.<sup>3</sup>

**9. USE OF TECHNOLOGY**

Census results were disseminated online.

**10. DATA PROCESSING AND ARCHIVING**

No information related to data processing and archiving was provided in the census reports available.

**11. CENSUS DATA QUALITY**

No information related to census data quality was provided in the census reports available.

**12. DATA DISSEMINATION**

Census data were disseminated through the website of the Tonga Statistics Department.

**13. DATA SOURCES**

**FAO.** Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 6-10 November 2017, Nadi, Fiji. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 16 September 2019]. <http://www.fao.org/index.php?id=85857>

**Ministry of Agriculture, Food, Forests and Fisheries.** 2015. *Tonga National Agricultural Census – Main Report*. Nuku'alofa, Tonga. (also available at <https://tonga.prism.spc.int/tdos-documents-library?view=download&fileId=2002>).

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Website: <https://tonga.prism.spc.int>

<sup>3</sup> With the exception of the items: (i) "Presence of irrigation on the holding"; and (ii) "Presence of aquaculture on the holding".

# TONGA – AGRICULTURAL CENSUS 2015 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>13 944</b>	<b>26 874</b>
Civil persons	13 936	n.a.
Juridical persons (organization)	8	n.a.

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>13 944</b>	<b>26 874</b>
Agricultural land	n.a.	23 314
Land under annual crops	n.a.	9 712
Land temporary fallow (<5 years)	n.a.	10 297
Land under permanent crops	n.a.	1 298
Kitchen garden	n.a.	41
Permanent meadows and pastures	n.a.	1 966
Other land	n.a.	3 560
Unutilized agricultural land (fallow land >5 years)	n.a.	3 348
Land used for animal building	n.a.	170
All other non-agricultural land	n.a.	42

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		Number
<b>Total</b>		<b>13 936</b>
Male		11 290
Female		2 646

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total</b>		<b>82 353</b>
Male		41 016
Female		41 337
Engaged in agricultural activities on the holding		53 279
Male		25 898
Female		27 381

EMPLOYEES WORKING ON THE HOLDING, BY SEX		Number
<b>Total</b>		<b>11 114</b>
Male		9 780
Female		1 334

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>12 859</b>	
Cattle	3 310	18 762
Sheep	161	1 240
Goats	405	1 744
Pigs/swine	10 038	110 310
Horses	865	1 942
Poultry (1 000 head)	n.a.	n.a.
Chickens	4 797	92
Ducks	322	2

IRRIGATION		Holdings
<b>Holdings with irrigated land</b>		<b>453</b>

TEMPORARY CROPS HARVESTED		Area (ha)
<b>Total</b>		<b>n.a.</b>
Cereals		n.a.
Maize		15
Vegetables and melons		n.a.
Tomatoes		45
Cabbages		16
Watermelons		168
Pumpkin		13
Carrots		7
Cucumbers		5
Squash		34
Oilseed crops		n.a.
Peanuts		105
Root/tuber crops		n.a.
Cassava		10 207
Yams		2 151
Sweet potatoes		769
Swam taro		658
Giant taro		253
Other temporary crops		n.a.
Tobacco		15

PERMANENT CROPS		Area (ha)
<b>Total</b>		<b>n.a.</b>
Tropical and subtropical fruits		n.a.
Pineapples		184
Plantains		203
Bananas		164
Breadfruit		2
Papayas		11
Beverage crops and spice crops		n.a.
Coffee		7
Vanilla		256
Kava		509
Other permanent crops		16

## 1. HISTORICAL OUTLINE

The first census of agriculture (CA) in Vanuatu was conducted in 1983, and the second in 1993. The third CA, to which the metadata review and data presented here refer, was undertaken in 2007.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The Statistics Act of 1983 governs the Vanuatu National Statistics Office (VNSO), a Government department and Vanuatu's official statistical agency.

### *Institutional framework and international collaboration.*

The VNSO is responsible for census operations. An eight-member national agriculture census Steering Committee was formed, headed by the Director General of the Ministry of Agriculture, Quarantine, Forestry and Fisheries (MAQFF).<sup>1</sup>

The census was funded by New Zealand Aid Agency, the European Union, the Australian Aid Agency, and the national budget. Technical assistance was provided by the Statistics and Demography Programme of the South Pacific Community and FAO.

### *Census staff*

In Phase 1 of the census, 650 enumerators were involved, while in the Phase 2, 2 007 enumerators participated.

## 3. REFERENCE DATE AND PERIOD

### *Reference days:*

- the day of the interview, for number of trees, livestock, etc.;
- the day of the last sale, for value of crops, fisheries species and forest products sold.

### *Reference periods:*

- from 1 June 2006 to 31 May 2007, for crop gardens and cash crops such as coconut, cocoa, coffee, kava, vanilla and pepper;
- the crop year (1 August 2006 to 31 July 2007), for arable land, permanent crops, organic land and vines, mushrooms, animal housing and labour force.

## 4. ENUMERATION PERIOD

The enumeration was conducted in two phases:

- Phase 1 was undertaken in May–June 2006.
- Phase 2 took place from 21 August to 21 September 2007. A further one-month period, from 21 September to 21 October 2007, was allocated for the enumeration of especially difficult areas in the country.<sup>2</sup>

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). It also included the fishing and forestry activities performed by the households.

The **statistical unit** was the agricultural holding (farm), defined as any economic unit of agricultural production (such as a garden or temporary and/or permanent crops or cattle raising, cocoa/coffee/kava/vanilla/pepper area/plantation) under single management, comprising all livestock kept and all land wholly or partly used for agricultural production purposes, without regard to title, legal form or size. Information on agricultural holdings was collected according to their legal status.

## 6. GEOGRAPHICAL COVERAGE

The census covered rural areas in the 18 major islands of the country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The CA did not cover the urban areas of the country. No thresholds were applied for the CA.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The CA 2007 was a sample-based classical census (see the "Data collection method(s)" subsection below).

<sup>1</sup> The Steering Committee also included representatives of the Departments of Economic and Sector Planning, Finance and Economic Management, Provincial Affairs, Trade and Industries, the Reserve Bank of Vanuatu and the Chamber of Commerce and Industry.

<sup>2</sup> Phase II was planned to be a series of sample surveys of the following selected crops and livestock: coconut, cocoa, coffee, kava, vanilla, pepper and cattle. Owing to limited resources, the collection of information on these crops and cattle was conducted simultaneously with household characteristics and crop gardens. There were separate questionnaires for each agricultural activity (see also section 8).

**Frame**

The Population Census (PC) 1999 and the listing of households done in May 2006 (during Phase 1) served as the census frames.

**Complete and/or sample enumeration methods**

All holdings in the household sector were enumerated in Phase 1. The frame data collected in Phase 1 were used to select the sample of EAs for Phase 2. Commercial farms or holdings were covered during data collection in Phase 2.

**Sample design (if sampling was used)**

The 18 major islands of the country were classified in three groups, according to the number of households engaged in agriculture: (i) small – less than 500 households; (ii) medium – 500 to 1 999 households; and (iii) large – more than 2 000 households.<sup>3</sup>

**Data collection method(s)**

Data were collected through face-to-face interviews by means of the PAPI method.

During Phase 1 (May–June 2006), the enumerators listed every household in Vanuatu and recorded all agricultural activities undertaken by the sampled households. In Phase 2 (August–September 2007), enumerators were hired again and trained to collect census data from households. Regular staff and census supervisors collected information for the commercial farms and holdings.

**Questionnaire(s)**

Two types of questionnaires were used: one for listing the households (Phase 1) and one for data collection (Phase 2). Separate questionnaires were provided for different agricultural activities (nine questionnaires in total).<sup>4</sup>

Only one of the 16 core items recommended by FAO for the WCA 2010 was not covered by the CA 2007.<sup>5</sup>

**9. USE OF TECHNOLOGY**

The census results were disseminated online.

**10. DATA PROCESSING AND ARCHIVING**

Data processing was conducted in the Vanuatu National Statistics Office.<sup>6</sup>

**11. CENSUS DATA QUALITY**

In order to ensure the collection of accurate data, officers and staff members of the VNSO worked as trainers during Phase I while the main census project staff (both VNSO and the MAQFF) were responsible for supervising data collection during Phase II. Under their guidance and supervision six census coordinators performed duties as provincial coordinators in both phases.

**12. DATA DISSEMINATION**

The CA 2007 data were disseminated through a printed publication, which included the final census results. The results were also published on institution's website.

**13. DATA SOURCE**

**FAO.** Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 6-10 November 2017, Nadi, Fiji. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 16 September 2019]. <http://www.fao.org/index.php?id=85857>

**Vanuatu National Statistics Office.** 2008. *Census of Agriculture 2007*. Port Vila, Vanuatu. (also available at <https://vnso.gov.vu/index.php/document-library?view=download&fileId=3074>).

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<sup>3</sup> For group 1, a complete enumeration exercise was performed. For group 2, one third of the EAs were sampled and all households engaged in agricultural activities were interviewed. For group 3, one-third of the EAs was sampled; from the households in the sampled EAs that had a crop garden, coconuts or kava sub-holdings, one-third were selected to be further interviewed. In addition, all households listed and involved in raising cattle and growing cash crops such as cocoa, coffee, vanilla and pepper (ten or more plants) were also enumerated.

<sup>4</sup> The following questionnaires were used: the commercial farm questionnaire, household questionnaires (demographic and agricultural activities), and specific questionnaires related to parcels and crops and livestock (kava plant, coconut, cocoa, coffee, vanilla, pepper plants, cattle).

<sup>5</sup> The following item was not covered in the CA: "Other economic production activities of the holding's enterprise".

<sup>6</sup> Assistance was received from FAO data processing consultant, FAO census & survey consultant, data analysis consultant from Nirmana Pty Ltd, Canberra, Australia, who assisted with data analysis



# VANUATU – CENSUS OF AGRICULTURE 2007 – MAIN RESULTS

NUMBER OF HOLDINGS AND AREA		
	Holdings	Area (ha)
<b>Total</b>	<b>38 909</b>	<b>n.a.</b>
Subsistence farms (Household sector)	38 879	7 511
Commercial farms (Non-household sector)	30	n.a.

LAND TENURE		
	Holdings	Area (ha)
<b>Total subsistence farms</b>	<b>38 879</b>	<b>7 511</b>
Legal ownership	n.a.	5 789
Non-legal owner-like possession	n.a.	1 277
Rented from others	n.a.	59
Other	n.a.	384

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total subsistence farms</b>	<b>38 879</b>	<b>7 511</b>
Less than 1 ha	n.a.	6 668
1–2.9 ha	n.a.	545
3–4.9 ha	n.a.	109
5–9.9 ha	n.a.	188

HOLDERS IN THE HOUSEHOLD SECTOR, BY SEX		Number
<b>Total</b>		<b>38 879</b>
Male		31 215
Female		7 664

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX		Number
<b>Total</b>		<b>175 051</b>
Male		90 398
Female		84 653
Engaged in agricultural activities on the holding		111 117
Male		57 427
Female		53 690

EMPLOYEES WORKING ON THE HOLDING		Number
<b>Total</b>		<b>96 949</b>
Full-time		6 883
Part-time		11 151
Occasional		78 914

LIVESTOCK		
	Holdings	Head
<b>Holdings with livestock</b>	<b>n.a.</b>	
Cattle	n.a.	211 167
Sheep	37	258
Goats	2 099	8 792
Pigs/swine	17 981	86 698
Poultry (1 000 head)	n.a.	n.a.
Chickens	23 381	368
Other poultry	153	2

PERMANENT CROPS		
	Holdings	Number of trees/plants
<b>Total</b>	<b>n.a.</b>	<b>n.a.</b>
Tropical and subtropical fruits	n.a.	n.a.
Avocados	n.a.	100 682
Bananas	n.a.	1 579 476
Plantains	n.a.	1 358 384
Papayas	n.a.	559 166
Breadfruit	n.a.	218 957
Mangoes	n.a.	169 074
Citrus fruits	n.a.	60 639
Mandarins	n.a.	163 335
Limes	n.a.	n.a.
Oranges	n.a.	172 198
Pomplemousse	n.a.	129 555
Nuts	n.a.	n.a.
Chestnuts	n.a.	228 281
Oilseed crops	n.a.	n.a.
Coconuts	23 660	9 957 488
Beverage crops and spice crops	n.a.	n.a.
Coffee	1 456	600 330
Cocoa	8 484	996 820
Vanilla	9 492	823 167
Other permanent crops	n.a.	114 144

# **GLOSSARY OF TERMS**

## GLOSSARY OF TERMS

**Agricultural census:** statistical operation for collecting, processing and disseminating data on the structure of agriculture, covering the whole or a significant part of a country.

**Agricultural holder:** civil person, group of civil persons or juridical person who makes the major decisions regarding resource use and exercises management control over the agricultural holding operation.

**Agricultural holding (or holding):** economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form or size.

**Archiving:** a means of ensuring long-term preservation of data including ensuring its understandability by users.

**Area frame:** a set of land elements, which may be either points, transects (lines of a certain length) or segments of land.

**Agricultural land:** total of cropland and permanent meadows and pastures.

**Aquaculture:** farming of aquatic organisms such as fish, crustaceans, molluscs and plants, as opposed to other forms of aquatic exploitation such as capture fisheries.

**Aquacultural holding:** economic unit of aquacultural production under single management comprising all aquaculture facilities, without regard to title, legal form or size.

**Area measurement:** operation of measuring the size of fields (i) on the ground, using measuring tapes and other instruments such as a compass, GPS, etc. or (ii) using remote sensing (aerial or satellite) images.

**Central census office (CCO):** office with primary and chief responsibility for planning, organizing, conducting and supervising the agricultural census operations, including developing the methodology and all technical documentation, data collection, data processing, analysis, archiving and dissemination of census results.

**Census:** statistical collection involving the enumeration of all units belonging to a given population or universe (large sample-based collections are sometimes also referred to as censuses).

**Census classical approach:** a census conducted as a single one-off operation in which all the census information is recorded.

**Census core module:** the primary agricultural census collection in the modular approach, carried out on a complete enumeration basis to provide key structural data.

**Census geographic coverage:** geographical regions of the country covered by census activities. Sometimes, countries omit certain areas of the country – such as urban areas, remote areas or areas with security problems – for operational reasons.

**Census modular approach:** approach to census data collection that consists of a clearly distinguishable core module and supplementary sample-based module(s), which use information collected in the core module as the frame for the supplementary module(s).

**Census of agriculture and aquaculture:** an agricultural census and an aquacultural census conducted as a combined field enumeration system.

**Census of agriculture:** see *agricultural census*.

**Census reference date (day):** point in time to which the data collected refer. A point of time may be either a specific date or day of enumeration. It is used for data collection on livestock numbers and other inventory items.

**Census reference period:** a period of time to which the data collected refer. A period is used, for instance, to report activities, such as employment or production. It usually refers to an agricultural year or calendar year.

**Census reference year:** period of twelve months, either a calendar year or an agricultural year, generally encompassing the various time reference dates or periods of data collection for individual census items.

**Census technical steering committee:** an inter-agency committee consisting of representatives of major stakeholders from all important national government agencies directly or indirectly concerned with census taking and users of census results, as well as nongovernmental organizations interested in the census. The committee is a review body providing advice to the central census office, especially on strategic directions and issues, as well as a coordinating and supporting body that contributes to a more efficient interagency cooperation.

**Census scope:** types of agricultural production activities included in the agricultural census. The scope of the agricultural production industry could be interpreted very broadly to cover not only crop and livestock production activities but also forestry and fisheries production activities, as well as other food and agriculture-related activities.

**Census supplementary module:** sample-based module undertaken in the modular approach, in association with the core census module, to provide more in-depth data.

**Classification variables:** characteristics used for the classification of data for tabulation purposes.

**Community-level data:** data collected at community level, such as community infrastructure and services, communal grazing land, area of communal forest, area equipped for irrigation, etc.

**Compact plantation:** plants, trees and shrubs planted in a regular and systematic manner, such as in an orchard.

**Complete enumeration:** collection of data from all units, rather than from just a sample of units.

**Computer-assisted Personal Interviewing (CAPI):** interviewing method whereby the enumerator records responses using an electronic questionnaire on mobile devices such as personal digital assistants (PDAs), tablets, laptops or smartphones.

**Computer-assisted Self-interviewing (CASI):** collects data using questionnaires placed on the Internet using secure methods and completed by a knowledgeable respondent.

**Computer-assisted Telephone Interviewing (CATI):** collects data from the holdings by telephone, with the operator located at central level reading and completing the questionnaire on the computer.

**Confidentiality:** legislative measures or other formal provisions that prevent unauthorized disclosure of census data that identify a household/holding either directly or indirectly. It also refers to the procedures in place to prevent disclosure of confidential data, including rules applying to census staff, aggregation rules when disseminating census data, provision of unit records, etc.

**Core items:** items recommended for inclusion by all countries in the core census module. The core items are deemed necessary for the establishment of frames for supplementary census modules or follow-up surveys.

**Supplementary items:** items to be considered by countries for inclusion in the census supplementary modules.

**Cropland:** total of arable land and land under permanent crops.

**Cross-tabulations:** tables showing statistical data classified by two different items simultaneously.

**Current agricultural statistics:** ongoing agricultural statistics on such things as production and prices, as opposed to structural data collected in the agricultural census.

**Cut-off threshold:** a minimum size limit for inclusion of units in the census.

**Data coding:** operation where original information from questionnaires, as recorded by enumerators, is replaced by a numerical code required for processing.

**Data editing:** process involving the review and adjustment of collected census data.

**Drop-off/mail-back (DO-MB):** self-enumeration procedure in which questionnaires are delivered to respondents by the enumerators and then mailed back once completed.

**Drop-off/pick-up by enumerators (DO-PKE):** self-enumeration procedure similar to DO-MB, except that the enumerators pick up the completed questionnaires.

**Enterprise:** economic unit of production, under single management, that independently directs and manages all the functions needed to carry out production activities.

**Enumeration area (EA):** small geographical unit defined for census enumeration purposes. Usually, the EAs are created considering the size of the territory and the density of the population.

**Field:** piece of land in a parcel separated from the rest of the parcel by easily recognizable demarcation lines, such as paths, cadastral boundaries, fences, waterways or hedges.

**Frame:** the basis used for identifying all the statistical units to be enumerated in a statistical collection.

**Geographic coverage:** see *census geographic coverage*.

**Global Positioning System (GPS):** system that enables finding the geographic position of a point on the Earth's surface by longitude and latitude. GPS allows for georeferencing holdings, households and land to the appropriate administrative areas. GPS devices enable much more rapid measurement of areas than traditional objective methods.

**Hardware (in respect to computers):** machinery such as central processing units, disk storage, printers, etc., as opposed to the programmes (software) that are written for its use.

**Hired manager:** person who manages an agricultural holding on behalf of the agricultural holder.

**Holder:** see *agricultural holder*.

**Holding:** see *agricultural holding*.

**Holdings in the household sector:** holdings that are operated by household members.

**Holdings in the non-household sector:** holdings that are in sectors other than the household sector, such as corporations and cooperatives.

**Household:** arrangements made by persons, individually or in groups, for providing themselves with food or other essentials for living.

**Imputation:** process of addressing missing, invalid or inconsistent responses identified during editing.

**Intelligent character recognition (ICR):** technology that interprets responses defined in specific locations on the forms, and transforms the written responses into output data.

**Land use classification:** classification of land according to the activity undertaken on the land.

**Land used for agriculture:** total of “agricultural land” and “land under farm buildings and farmyards”.

**Legal status of the holder:** juridical aspects under which an agricultural holding is operated.

**List frame:** lists of names of holders or households and their addresses, names of holdings and their addresses or location; the lists can be obtained from agricultural or population censuses and/or statistical farm registers, as well as administrative sources.

**Livestock:** all animals, birds and insects kept or reared in captivity mainly for agricultural purposes.

**Metadata:** information that helps users to understand what the data are measuring and how they have been created. This information helps to prevent miscomprehension of the data and helps to promote their appropriate use. Metadata can also help users to understand the quality of data by providing information about the data collection process.

**Methodological modality for conducting the census:** refers to methodological approaches for carrying out an agricultural census. The census of agriculture can be carried out using different approaches and in various ways, depending on the resources available and national conditions. Two basic census approaches are the “classical” and the “modular” approach. The latter was introduced in the WCA 2010. The WCA 2020 discusses two additional approaches: (i) the integrated census and survey programme modality; and (ii) the use of registers as sources of census data. The distinguishing features of modalities lie in census design and not only in whether complete or sample enumeration is used.

**Microdata:** data recorded on the unit of enumeration – the holding or household – when an agriculture census is conducted. Each set of information about a unit represents a microdata record.

**Mixed crops:** more than one crop grown unsystematically in a plot or field.

**Multi-stage sampling:** sampling procedure that involves sampling at different stages, the sampling units at each stage being subsampled from the (larger) units chosen at the previous stage. The sampling units pertaining to the first stage are called primary sampling units; to the second stage, secondary sampling units; etc.

**Nomadic livestock:** animals kept by households with no permanent place of residence who are forced by natural circumstances, such as scarcity of water and pastures, or because of climatic conditions, to move from place to place. The enumeration of such holdings presents special problems.

**Optical mark recognition (OMR):** technology that recognizes marks made by a special pencil on numbers or letters preprinted on special questionnaires.

**Paper and Pen Interview (PAPI):** traditional interviewing method whereby enumerators interview the respondents and data are collected by the enumerators using paper questionnaires.

**Paper-based (or assisted) Telephone Interviewing (PATI):** telephone-interviewing method whereby interviewers contact the respondents by phone and write data on paper-based questionnaires.

**Parcel:** any piece of land of one land tenure type, entirely surrounded by other land, water, road, forest or other features not forming part of the holding or forming part of the holding under a different land tenure type.

**Permanent crops:** crops with a growing cycle longer than one year.

**Pilot census:** a final test, a “dry run” for the main census, but on a limited scale. All aspects of enumeration, processing and dissemination systems, and the interface between them, are tested to resolve any outstanding problems.

**Plot:** part or whole of a field on which a specific crop or crop mixture is cultivated.

**Population census:** the total process of planning, collecting, compiling, evaluating, disseminating and analysing demographic, economic and social data at the smallest geographical level pertaining, at a specified time, to all persons in a country or in a well-delimited part of a country.

**Post-enumeration Survey (PES):** small-scale survey aimed at evaluating the accuracy of the data collected during the census. It provides valuable information for dissemination.

**Pretest surveys (pretests):** small-scale exercises for evaluating specific aspects of the census during the preparatory phase.

**Primary Sampling Unit (PSU):** first level of subdivision of the population, created by selecting a part of the population for further subsampling. PSUs may be enumeration units, other geographic areas or area blocks.

**Probability Proportional to Size (PPS):** sampling technique in which units are selected with probabilities proportional to their size. With this method, the bigger the size of the unit, the higher its chance of being included in the sample.

**Quality assurance:** process ensuring that quality goals are consistently met throughout the system of data production. It involves dimensions such as relevance, accuracy, reliability, timeliness and punctuality, coherence and comparability, accessibility and clarity of the data.

**Questionnaire:** basic document in the census programme designed to collect relevant information in a systematic manner.

**Raw data:** data from the questionnaire provided by the respondent or measured by the enumerator; such data are not yet reviewed, processed or ready for use. They are usually treated as confidential.

**Reference date (day):** see *census reference date (day)*.

**Reference period:** see *census reference period*.

**Rural households:** households living in areas designated as rural areas, usually defined by the population census.

**Sample enumeration:** sampling of the whole or part of the target population for the census.

**Sample survey:** collection of data from a sample of units, rather than all units, as in a census.

**Sampling errors:** errors in statistics obtained from a sample survey because data are collected from only sample units.

**Sampling frame:** list of all members of a population used as a basis for sampling.

**Sampling unit:** elements, or groups of elements, of the universe under study that can be selected in the sample. There may be sampling units of different levels (see *Primary Sampling Unit (PSU)* and *Secondary Sampling Unit (SSU)*), the lowest level being the element under study, which may be an agricultural holding or a land element (such as a point or a segment of land).

**Satellite imagery:** images provided by satellites (e.g. Copernicus, Landsat) and sometimes used for cartographic preparation.

**Scattered plants:** plants or trees planted in such a manner that it is not possible to estimate the area (often around the holding).

**Secondary Sampling Unit (SSU):** sampling unit sampled at the second stage of selection (ultimate sampling unit, in the case of two-stage sampling).

**Shifting cultivation:** farming practice whereby a particular piece of land is cultivated for some years and then abandoned for a period sufficient to restore its fertility by natural vegetative growth, before being recultivated.

**Short-long questionnaire concept:** in this approach, a short questionnaire is applied to all holdings, while a long, more detailed one is used to target a specific population or a sample of holdings. The purpose of this concept is to increase the range of census items by including items relevant to a subset of the population, using the long questionnaire in addition to the information collected through complete enumeration.

**Simple Random Sampling:** basic sampling technique in which units are selected entirely by chance. Each member of the population has an equal chance of being included in the sample.

**Single-stage sampling:** sampling scheme in which the sample is selected directly from a list of units covered by the survey.

**Software:** programmes that control a computer and its peripherals, as opposed to actual machinery.

**Stratification:** refers to a subdivision of the universe under study into homogeneous, mutually exclusive groups (subsets) called strata, for sampling purposes. In each stratum, separate samples are taken and separate estimates are made.

**Stratified sampling:** probability-sampling technique wherein the researcher divides the entire population into homogeneous groups (strata), then randomly selects the final subjects from the different strata.

**Statistical unit:** the basic unit for which data are collected. The statistical unit for the census of agriculture is the agricultural holding.

**Structural data:** data on the basic organizational structures of agricultural holdings that do not change quickly over time, such as farm size and land use.

**Systematic sampling:** probability-sampling technique in which sample units from a larger population are selected according to a random starting point and a fixed, periodic interval.

**Table:** primary form of presentation of statistical data, involving the summarizing of the results.

**Tabulation programme:** for an agricultural census, the set of statistical tables prepared to present the main census results.

**Temporary crops:** crops with a growing cycle of less than one year.

**Widened agricultural census:** census collecting limited additional data on households that are not agricultural holdings, used when there are few other opportunities for data collection. It is not limited to the structure of crop and livestock production activities carried out by the agricultural holding.

**APPENDIX**

**PUBLICATIONS ON THE  
WORLD PROGRAMME FOR  
THE CENSUS OF  
AGRICULTURE**



**WCA 2020 ROUND**

**FAO.** 2018. *World Programme for the Census of Agriculture 2020 Volume 2: Operational guidelines*. FAO Statistical Development Series 16. (also available at <http://www.fao.org/3/CA1963EN/ca1963en.pdf>)

**FAO.** 2015. *World Programme for the Census of Agriculture 2020 Volume 1: Programme, concepts and definitions*. FAO Statistical development Series 15. Rome (also available at <http://www.fao.org/3/a-i4913e.pdf>)

**WCA 2010 ROUND**

**FAO.** 2019. *Main Results and Metadata by Country (1996–2005). 2010 World Census of Agriculture*. FAO Statistical Development Series 17. Rome. (also available at: <http://www.fao.org/3/ca6956en/ca6956en.pdf>)

**FAO.** 2005. *A system of integrated agricultural censuses and surveys – Vol.1. World Programme for the Census of Agriculture 2010*. FAO Statistical Development Series 11. Rome. (also available at <http://www.fao.org/3/a-a0135e.pdf>).

**WCA 2000 ROUND**

**FAO.** 2013a. *2000 World Census of Agriculture – Analysis and International Comparison of the Results (1996–2005)*. FAO Statistical Development Series 13. Rome. (also available at <http://www.fao.org/3/i2401e/i2401e.pdf>).

**FAO.** 2013b. *2000 World Census of Agriculture – Methodological Review*. FAO Statistical Development Series 14. Rome. (also available at <http://www.fao.org/3/i3386e/i3386e.pdf>).

**FAO.** 2010. *2000 World Census of Agriculture – Main Results and Metadata by Country (1996–2005)*. FAO Statistical Development Series 12. Rome. (also available at <http://www.fao.org/3/i1595e/i1595e.pdf>).

**FAO.** 1997a. *Supplement to the Programme for the World Census of Agriculture 2000 – Guidelines on employment*. FAO Statistical Development Series 5a. Rome. (also available at <http://www.fao.org/3/w7206e/w7206e.pdf>)

**FAO.** 1997b. *Supplement to the Programme for the World Census of Agriculture 2000 – Guidelines on the collection of structural aquaculture statistics*. FAO Statistical Development Series 5b. Rome. (also available at <http://www.fao.org/3/w7208e/w7208e.pdf>)

**FAO.** 1995. *Programme for the World Census of Agriculture 2000*. FAO Statistical Development Series 5. Rome. (also available at <http://www.fao.org/3/bq473e/bq473e.pdf>)

**WCA 1990 ROUND**

**FAO.** 2001. *Supplement to the Report on the 1990 World Census of Agriculture – International comparison and primary results by country (1986–1995)*. FAO Statistical Development Series 9a. Rome. (also available at <http://www.fao.org/3/y2816e/y2816e.pdf>)

**FAO.** 1997. *Report on the 1990 World Census of Agriculture – International comparison and primary results by country (1986–1995)*. FAO Statistical Development Series 9. Rome. (also available at <http://www.fao.org/3/w6778e/w6778e.pdf>)

**FAO.** 1992. *Programme for the 1990 World Census of Agriculture – Supplement for Africa*. FAO Statistical Development Series 2e. Rome. (also available at <http://www.fao.org/3/a-bq478e.pdf>).

**FAO.** 1990a. *Programme for the 1990 World Census of Agriculture – Supplement for Asia and Pacific*. FAO Statistical Development Series 2d. Rome. (also available at <http://www.fao.org/3/ca5864en/ca5864en.pdf>)

**FAO.** 1990b. *Programme for the 1990 World Census of Agriculture – Supplement for Near East*. FAO Statistical Development Series 2c. Rome. (also available at <http://www.fao.org/3/a-bq475e.pdf>)

**FAO.** 1989. *Programme for the 1990 World Census of Agriculture – Supplement for Europe*. FAO Statistical Development Series 2b. Rome. (also available at <http://www.fao.org/3/a-bq474e.pdf>).

**FAO.** 1987. *Programme for the 1990 World Census of Agriculture – Microcomputer-based data processing*. FAO Statistical Development Series 2a. Rome. (also available at <http://www.fao.org/3/a-am083e.pdf>)

**FAO.** 1986. *Programme for the 1990 World Census of Agriculture*. FAO Statistical Development Series 2. Rome. (also available at <http://www.fao.org/3/a-s8900e.pdf>)

**WCA 1980 ROUND**

**FAO.** 1992. *World Census of Agriculture – Methodological Review*. FAO Statistical Development Series. Rome. (also available at <http://www.fao.org/3/ca5862en/ca5862en.pdf>)

**FAO.** 1983–1989. *Report on the 1980 World Census of Agriculture – Results by Countries – Census Bulletins 1-28*, Rome.

**FAO.** 1976. *Programme for the 1980 World Census of Agriculture*. Rome. (also available at <http://www.fao.org/3/a-bq479e.pdf>)

**WCA 1970 ROUND**

**FAO.** 1981. *1970 World Census of Agriculture – Analysis and International Comparison of the Results*. Rome.

**FAO.** 1977. *Report on the 1970 World Census of Agriculture*. FAO Statistics Series N°10. Rome. (also available at <http://www.fao.org/3/ca5994en/ca5994en.pdf>)

**FAO.** 1973–1981. *Report on the 1970 World Census of Agriculture – Results by Countries. Census Bulletins 1-30*. Rome.

**FAO.** 1969. *Program for the 1970 World Census of Agriculture – Regional Program for America*. Rome. (also available at <http://www.fao.org/3/ca5990en/ca5990en.pdf>)

**FAO.** 1967a. *Program for the 1970 World Census of Agriculture – Regional Program for Africa*. Rome. (also available at <http://www.fao.org/3/ca5853en/ca5853en.pdf>)

**FAO.** 1967b. *Program for the 1970 World Census of Agriculture – Regional Program for Europe*. Rome. (also available at <http://www.fao.org/3/ca5858en/ca5858en.pdf>)

**FAO.** 1967c. *1970 World Census of Agriculture, Regional Program for Asia and the Far East*. Rome. (also available at <http://www.fao.org/3/ca5856en/ca5856en.pdf>)

**FAO.** 1967d. *1970 World Census of Agriculture, Regional Program for the Near East*. Rome. (also available at <http://www.fao.org/3/ca5854en/ca5854en.pdf>)

**FAO.** 1965. *Program for the 1970 World Census of Agriculture*. Rome.

**WCA 1960 ROUND**

**FAO.** 1971. *Report on the 1960 World Census of Agriculture – Vol. V: Analysis and International Comparison of Census Results*. Rome. (also available at <http://www.fao.org/3/a-bq665e.pdf>)

**FAO.** 1969a. *Report on the 1960 World Census of Agriculture – Vol. II: Programme, Concepts and Scope*. Rome. (also available at <http://www.fao.org/3/a-bq472e.pdf>)

**FAO.** 1969b. *Report on the 1960 World Census of Agriculture – Vol. III: Methodology*. Rome. (also available at <http://www.fao.org/3/a-bq663e.pdf>)

**FAO.** 1968. *Report on the 1960 World Census of Agriculture – Vol. IV: Processing and Tabulation*. Rome. (also available at <http://www.fao.org/3/a-bq664e.pdf>)

**FAO.** 1967. *Report on the 1960 World Census of Agriculture, Census Results by Countries – Vol. 1 Part B*. Rome. (also available at <http://www.fao.org/3/a-bq661e.pdf>)

**FAO.** 1966. *Report on the 1960 World Census of Agriculture, Census Results by Countries – Vol. 1 Part A*. Rome. (also available at <http://www.fao.org/3/a-bq660e.pdf>)

**FAO.** 1957. *Programme for the 1960 World Census of Agriculture*. Rome.

**WCA 1950 ROUND**

**FAO.** 1961. *Report on the 1950 World Census of Agriculture – Special Reports: World Agricultural Structure*. Rome.

**FAO.** 1955. *Report on the 1950 World Census of Agriculture – Vol. I: Census Results by Countries*. Rome. (also available at <http://www.fao.org/3/ca5989en/ca5989en.pdf>)

**FAO.** 1948. *Programme for the 1950 World Census of Agriculture*. Washington. (also available at <http://www.fao.org/3/a-bq471e.pdf>)

**WCA 1940 ROUND**

**International Institute of Agriculture (IIA).** 1938. *Programme of the World Agricultural Census of 1940*. Rome.

**WCA 1930 ROUND**

**International Institute of Agriculture (IIA).** 1939. *The First World Agricultural Census (1930) – Vol. II, III, IV, V: Country Results*. Rome. (also available at <http://www.fao.org/3/a-bq667e.pdf>)

**International Institute of Agriculture (IIA).** 1939. *The First World Agricultural Census (1930) – Vol. I: Standard form, Methodological Study, Notes on tabulation of the census results*. Rome. (also available at <http://www.fao.org/3/a-bq667e.pdf>)



At the end of each decadal census round, the FAO Statistics Division reviews national census practices, methodologies and results, and summarizes the findings in methodological publications under the Statistical Development Series (SDS). The SDS 17 is the first publication of the 2010 census round that presents the results of national censuses conducted during the WCA 2010 period 2006–2015. It is a compendium of reviews of country censuses and their main results.

The value of this publication lies in the provision of detailed metadata on agricultural censuses conducted by different countries. These metadata include information on historical background, legal and institutional frameworks, reference and enumeration periods, census scope and coverage, methodological modalities, new technology used, data processing and dissemination, etc. The metadata are complemented by tables with main results on key structural items, such as number of holdings, gender of holders, total area of holdings, farm labour and agricultural machinery.

In this publication, FAO has made every effort to ensure the most complete coverage possible of national agricultural censuses. This is a unique publication, which describes agricultural censuses from a record number of 127 countries and territories. This review of the WCA 2010 round is intended to serve as useful reference material for census planners and data users, providing valuable lessons for future censuses, which will ultimately lead to improved assessments of countries' agricultural sectors.

