

## 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