

*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 have 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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<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