

Puerto Rico - Census of Agriculture 2022

United States Department of Agriculture (USDA), National Agriculture Statistics Service (NASS), Government of Puerto Rico, Department of Agriculture, University of Puerto Rico, College of Agricultural Science, Cooperative State Research

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Identification

SURVEY ID NUMBER
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TITLE
Census of Agriculture 2022

COUNTRY

Name	Country code
Puerto Rico	PRI

STUDY TYPE
Agricultural Census [ag/census]

SERIES INFORMATION

The first Census of Agriculture in Puerto Rico was conducted in 1910. From that year to 1950, a census of agriculture was conducted every ten years, in conjunction with the decennial censuses of population. Later, the timing of the census was changed so that a census of agriculture was conducted every five years, covering the years ending in 2 and 7.

The Census of Agriculture 2002 was the first to be conducted based on the calendar year, rather than on the fiscal year, followed by the 2012 census which brought the census data collection cycle in line with that of the United States of America. Following censuses continued to be conducted based on the calendar year, such as the Census of Agriculture 2018, originally planned for 2017, and the Census of Agriculture 2022.

ABSTRACT

The census of agriculture is the leading source of statistics about Puerto Rico's agricultural production and the only source of consistent, comparable data at the island level. Census statistics are used to measure agricultural production and to identify trends in an ever-changing agricultural sector. The census includes data on the structure of agricultural land, crops and livestock, farm characteristics, as well as production expenses, value of agricultural products, and aquaculture.

KIND OF DATA
Census/enumeration data [cen]

UNIT OF ANALYSIS
Agricultural holdings

Scope

NOTES

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

The questionnaire collected information on:

1. Total number of plots
2. Land use
3. Irrigation
4. Field crops
5. Coffee, pineapples, plantains, and bananas
6. Hay and forage crops
7. Nursery, greenhouse, floriculture, sod, and tree seedlings
8. Vegetables and melons
9. Hydroponic crops
10. Fruit
11. Root crops
12. Cattle and calves (dairy and beef)
13. Poultry
14. Hogs and Pigs
15. Aquaculture

16. Other animals and livestock products
17. Organic agriculture
18. Farm labour
19. Government agricultural programs
20. Income from farm-related sources
21. Production expenses
22. Fertilizers and chemicals applied
23. Market value of land, buildings, and machinery
24. Machinery, equipment, and buildings
25. Practices
26. Food marketing practices
27. Type of organization
28. Renewable energy
29. Personal characteristics

KEYWORDS

Keyword
Structure of Agriculture
Land use
Crops
Livestock and Poultry
Labor in the Agricultural Sector
Machinery and Equipment
Aquaculture

Coverage

GEOGRAPHIC COVERAGE

The Census of Agriculture 2022 covered the entire territory.

UNIVERSE

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 2022. The data collected in the census relates to places with agricultural operations qualifying as farms according to the census definition.

Producers and sponsors

PRIMARY INVESTIGATORS

Name
United States Department of Agriculture (USDA), National Agriculture Statistics Service (NASS)
Government of Puerto Rico (Gobierno de Puerto Rico), Department of Agriculture (Departamento de Agricultura)
University of Puerto Rico, College of Agricultural Science
Cooperative State Research, Education, and Extension Service

Sampling

SAMPLING PROCEDURE

The National Agriculture Statistics Service (NASS) maintains a list of farmers. Before conducting the census, the Census Mail List (CML) is created by combining the NASS list with lists of farmers maintained by the Puerto Rico Department of

Agriculture and the Agricultural Extension Service of the University of Puerto Rico, as well as names and addresses of farm operators identified through other sources.

Each record on the list includes a name, an address, a telephone number, and an email. These outside source lists are matched to the NASS list using record linkage programs. List building activities for developing the CML started in 2020 by updating list information from respondents of the Census of Agriculture 2018. Measures were taken to improve name and address quality. Additional record linkage programs were run to detect and remove duplicate records. The official CML for the Census of Agriculture 2022 was established in September 2022 containing 17 875 records.

The Census of Agriculture 2022 was conducted using complete enumeration of the farms in the CML. This was supplemented by an area sample, which accounted for farms Not-on-the-Mail-List (NML). The area sample consisted of 300 segments where all agricultural operations were enumerated.

Data collection

DATES OF DATA COLLECTION

Start	End
2022-12	2023-02

DATA COLLECTION MODE

Computer Assisted Web Interview [cawi] Pen and Paper Interview [papi] Mail Questionnaire [mail]

DATA COLLECTION NOTES

Data collection was accomplished primarily through the mail-out/mail-back method. The CAWI method was also available for farm operators who preferred to report online. A letter with a unique survey code and instructions for completing their census online was included in each mail package. Enumerators from the Department of Agriculture and the Extension Service conducted field follow-up visits to enumerate operations that did not respond by mail using the PAPI method. Census activities employed 40 staff in the operation.

QUALITY ASSURANCE

NASS conducted an extensive program to follow-up all non-responses. NASS also used capture-recapture methodology to adjust for under-coverage, non-response, and misclassification. For the Census of Agriculture 2022, the capture-recapture methodology was used to model the probability of data capture with a single model, thereby allowing the utilization of all census responses and the Agricultural Coverage Evaluation Survey (ACES) records in the adjustments. To implement the capture-recapture method, two independent studies were considered: the Census of Agriculture 2022 (based on the CML) and the ACES 2022 (based on the area frame). A detailed description of the capture-recapture method adjustment can be found in Annex A of the final report.

Questionnaires

QUESTIONNAIRES

One questionnaire (reporting form) was used for the Census of Agriculture 2022.

The questionnaire covered 17 out of the 23 essential items recommended in the WCA 2020.

Data Processing

DATA EDITING

Direct data capture was ensured by the CAWI method. The complete questionnaires received by mail were scanned and an Optical Mark Recognition (OMR) was used to capture categorical responses and to identify entries in numeric and alpha-character answer zones. Data entry operators keyed data from the scanned images. Answer zones with entries, identified in the earlier OMR analysis were presented to the data entry operators. The keyer evaluated the contents and captured pertinent responses. Ten percent of the identified answer zones were keyed a second time for independent quality control. If differences existed between the first keyed value and the second, an adjudicator handled resolution. Captured data were processed through a computer formatting program that verified that records were valid. Rejected records were referred to analysts for correction.

Accepted records were sent to a complex computer batch edit process. The computer edit determined whether a reporting operation met the qualifying criteria to be counted as a farm (in-scope). The edit systematically checked reported data section-by-section with the overall objective of achieving an internally consistent and complete report. The edit determined the best value to impute for reported responses that were deemed unreasonable and for required responses that were absent. Sources used for imputation included previous census and administrative data from the Farm Service Agency. When deterministic editing logic and previously reported data sources were unable to provide a current value, data from a reporting farm of similar type, size, and location were considered through the nearest neighbour imputation method. In cases where automated imputation was unable to provide a consistent report, the record was referred to an analyst for resolution.

Prior to publication, tabulated totals were reviewed by statisticians to identify inconsistencies and potential coverage problems. Weighting adjustments were used to address under-coverage, non-response and misclassification errors. A description of those adjustment can be found in Annex A of the final report. After tabulation and review of the aggregates, a comprehensive disclosure review was conducted. Farm counts were not considered sensitive and were not subject to disclosure controls. Cell suppression was used to protect the cells that were determined to be sensitive to disclosure of information. NASS used SAS software for editing and summary.

Access policy

CONTACTS

Name	Affiliation
Department of Agriculture (Departamento de Agricultura)	Government of Puerto Rico (Gobierno de Puerto Rico)

ACCESS CONDITIONS

For additional information on data access and use, please contact the Department of Agriculture of Puerto Rico.

Online form: <https://agricultura.pr.gov/nosotros>

Website: <https://agricultura.pr.gov/nosotros>

Metadata production

DDI DOCUMENT ID

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PRODUCERS

Name	Abbreviation	Affiliation	Role
Department of Agriculture (Departamento de Agricultura)		Government of Puerto Rico (Gobierno de Puerto Rico)	Metadata producer
Statistics Division	ESS	Food and Agriculture Organization of the United Nations	Metadata adapted for FAM

Data Dictionary

Data file	Cases	Variables
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