

Cook Islands - Agriculture Census 2011

Ministry of Agriculture

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Overview

Identification

ID NUMBER

COK_2011_AC_v01_EN_M_v01_A_OCS

Version

VERSION DESCRIPTION

Version 01: This is the final clean, labelled and anonymized version of the Master file.

Overview

ABSTRACT

The Agriculture Census (AC) 2011 is a national government operation geared towards the collection and compilation of statistics in the agriculture sector of the country. The collected data will constitute the bases from which policymakers and planners will formulate plans for the country's development.

The first AC in the Cook Islands was conducted in 1988 and the second in 2000. Both censuses were supported technically by FAO. The Cook Islands also has a long history of a population census conducted at 5-yearly intervals in years ending in 1 and 6. Traditionally the Census of Population and Dwellings (CoPD) has 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.

KIND OF DATA

Census/enumeration data [cen]

UNITS OF ANALYSIS

Agricultural holdings

Scope

NOTES

The description of the scope for the study includes:

- HOUSEHOLD: Geographic Identification, Levels of Agricultural Activity of the household, Agricultural holdings, Crops, Income from agricultural activities, Use of fertilizers, Traditional methods for food storage, Use of traditional knowledge for planting, Travelling with locally grown food, Water usage, Livestock characteristics, Type of operation, Nature of disposal, Fishing, Pearl farming equipment and facilities, Pearl income;
- HOLDING: Identification, characteristics, parcel details, scattered plants/trees, crops, labour input;
- PARCEL: Plot details, crops, proportion for sale, crops planted, crops harvested;
- INDIVIDUAL: Labour input.

KEYWORDS

Agriculture, Farm, Fishing, Pearl farming, Holding, Parcel, Livestock, Crops, Traditional methods, Fishing, Pearl, Fertilizers, Water usage, Labour

Coverage

GEOGRAPHIC COVERAGE

National coverage.

UNIVERSE

The census covered all households, agricultural operators, agricultural establishments, fishing operators and pearl farmers.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
Ministry of Agriculture	Cook Islands Government

OTHER PRODUCER(S)

Name	Affiliation	Role
National Statistics Office	Cook Islands Government	Technical assistance
Food and Agriculture Organization	United Nations	Technical assistance
David Marshall	Food and Agriculture Organization	Census consultant
Kevin Hosking	National Statistics Office	Data processing
Jairo Castano	National Statistics Office	Project technical officer
Tim Nubono	Ministry of Agriculture	Formatting of report

FUNDING

Name	Abbreviation	Role
Ministry of Agriculture	MOA	Manpower, financial support, logistics
Food and Agriculture Organization of the United Nations	FAO	Financial support

OTHER ACKNOWLEDGEMENTS

Name	Affiliation	Role
David Marshall	Food and Agriculture Organization (FAO)	Census consultant
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Tim Nubono	Ministry of Agriculture (MOA)	Formatting of report

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Office of Chief Statistician	OCS	Food and Agriculture Organization	Metadata adapted for FAM
Ministry of Agriculture	MOA	Cook Islands Government	Documentation of the Agriculture Census
Statistics for Development Division	SDD	Pacific Community	Review of the documentation

DDI DOCUMENT VERSION

COK_2011_AC_v01_EN_M_v01_A_OCS_v01

DDI DOCUMENT ID
DDI_COK_2011_AC_v01_EN_M_v01_A_OCS_FAO

Sampling

Sampling Procedure

The census was done in complete enumeration. The statistical Enumeration Area (EA) was used for the allocation of households and work areas. In each census district, the Census of Population and Dwellings (CoPD) was first conducted. The list of households engaged in agriculture and fishing in each EA was then passed to the agricultural census team, which then visited these households to complete the census.

Questionnaires

Overview

The census of population and dwellings had 4 categories of agricultural activity, namely: subsistence only, commercial only, subsistence and commercial and no agriculture. For those engaged in agricultural activity a further breakdown was collected, namely: vegetables, fruit, flowers and other. The census of agriculture also had 4 categories but for crop growing only, namely, non-agricultural, minor agricultural, subsistence and commercial. The differences in these classifications and the types of agriculture included make comparisons difficult, however, it is useful to evaluate the two sets of data and draw conclusions as to the extent of agricultural activity in the Cook Islands from these two sources.

The questionnaires used for the census of agriculture 2000 and the census of population and dwellings 2006, related to agriculture, were reviewed and efforts made to avoid duplication. In particular, the question on the numbers of livestock kept by the household was dropped from the census of population and dwellings as this data was being collected in the census of agriculture. Likewise, information on machinery and equipment was dropped from the census of agriculture as this was being collected in the census of population and dwelling. Questions on the extent of involvement in agricultural activity at the household level were maintained in both censuses as was the extent of involvement in fishing and pearl farming. This provided a useful coverage check for the census of agriculture, in particular, although it was noted that there were definitional differences between the two censuses especially related to flower cultivation which was considered an agricultural activity in the census of population and dwellings but not in the census of agriculture. At the individual level, data on labour inputs was recorded in the census of agriculture by age and sex but other data at the individual level has then to be obtained through linkages to the census of population and dwellings through the person and household number.

The household questionnaire was administered in each household, which collected various information on levels of agricultural activity, holdings detail (including name of operator, total area, number of separate parcels, location), crops currently growing and/or harvested (including crops currently growing, total area, number of plants, crops planted and/or harvested, total area, number of plants), proportion of income from agriculture, loans for agriculture purposes, fertilizers, agricultural chemicals, improved varieties, other selected activities during the last 12 months (including bee keeping, hydroponic, floriculture, handicrafts), traditional methods on food storage and planting, travelling with locally grown food, water usage

In addition to a household questionnaire, questions were administered in each household for holding which collected various information on holding identification, parcel details during the last 12 months (including location, area, land tenure, land use, months used), scattered plants/trees (including number of plants), labour input for persons 15 years and over working during the last month (including sex, age, status, type, average hours worked per week, wages per month, benefits and other paid job)

In addition to a holding questionnaire, questions were administered for parcels which collected various information (during the last 12 months) on plot details (including proportion to parcel area, crops grown, method of planting, number of plants and proportion for sale), crops planted and harvested (including area harvested, number of plants and proportion for sale)

In addition to a household questionnaire, questions were administered in each household for livestock which collected various information on type and number of livestock, type of operation, nature of disposal during the last 12 months (including kind of livestock, number disposed (including home use, feast/gifts, sold, slaughtered, live)

In addition to a household questionnaire, questions were administered in each household for fishing which collected various information on household members engaged, main purpose of fishing activity, household members (including average hours spent per week), details of fishing activities (including forms of fishing, number of people fishing, location, average number of fishing trips, average hours per fishing trip), boat details (including type of boat, length, engine), proportion of fish caught/collected and sold, proportion consumed

In addition to a household questionnaire, questions were administered in each household for pearl farming which collected various information (during the last 12 months) on farming details (including farm lines, spat collector lines, spat details, number of farm shells, labour input (including person number, sex, age, status, type, average hours worked per week, wages per month, benefits received, other paid job), boat operation (including times used per week), type of equipment and facility, number of times per week, number owned, hired, borrowed), shelling details, proportion of income, loan details

The questionnaires, that were developed in English, contain was divided into 5 forms:

- Household Form: Levels of agricultural activity, List of agricultural holdings, Crops, Income from agricultural activities, Loans, Fertilizers, Other relevant questions.
- Holding Form: Parcel details, Scattered plants/trees, Labour inputs.
- Parcel Form: Number of separate plots, Plot details, Crops.

-Livestock Form: Livestock details, Type of operation, Nature of disposal.

-Fishing & Pearl Farming Form: Fisheries activities details, Pearl farm information, Labour inputs, Boats and other equipment used, Other relevant information.

Data Collection

Data Collection Dates

Start	End	Cycle
2011-12-01	2011-12-31	N/A

Data Collection Mode

Face-to-face paper [f2f]

Data Collection Notes

The approach adopted to the data collection was to have two separate teams of supervisors and enumerators, one for the census of population and dwelling and another for the census of agriculture (CoA). The ministry of agriculture was responsible for the census of agriculture team while the Cook Islands Statistics Office (CISO) was responsible for the census of population and dwelling team.

Training for the CoA was carried out in a number of locations, prior to the fieldwork. This training was scheduled as a single session of a few hours and focused on the completion of the census forms. This was in contrast to the training for previous census where training of trainers and supervisors was first organised over 3 days. This was followed by the training of the enumerators, again over 3 days. The very short duration of the training of supervisors and enumerators for the census of agriculture 2011 adversely impacted on the quality of the fieldwork which was sub-standard in many areas.

Both censuses used the statistical Enumeration Area (EA) for the allocation of households and work areas. In each census district, the census of population and dwellings was first conducted. The list of households engaged in agriculture and fishing in each enumeration area was then passed to the census of agriculture team which then visited these households to complete the census of agriculture.

For the Northern Group the two census teams travelled together on the police patrol boat. The two census teams also worked very closely together to help each other out and to complete the fieldwork within the time allocated for each island. For the Southern Islands, the fieldwork for the two censuses was less integrated although lists of households engaged in agricultural and fishing activities, identified in the census of population and dwellings, were made available to the census of agriculture teams. In total, 19 supervisors and 83 enumerators were used.

Despite the best efforts of the organisers, the fieldwork for the census of agriculture got delayed. The census of population and dwellings enumerated the population on 1 December 2011, however, much of the fieldwork for the census of agriculture was carried out after that date and very quickly got caught up in the festive season. A review of the coverage in January 2012, enumeration area by enumeration area, identified significant under-enumeration in a number of enumeration areas and especially those on Rarotonga. Using the lists of households engaged in agriculture and fishing activities from the census of population and dwellings, the worst affected enumeration areas were identified and the enumerators went back to interview the households that had not been visited.

Prior to this 'mopping-up' exercise the enumerators were re-trained on how the census questionnaires should be completed as well as on the main concepts and definitions. Clarification was provided on the classification of households into the four categories: non-agricultural, minor agricultural, subsistence and commercial as it had been noted that many households with just one or two fruit trees had been treated as non-agricultural rather than minor agricultural and in fact many had not even been visited as non-agricultural households did not need to be visited.

Questionnaires

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Data Collectors

Name	Abbreviation	Affiliation
Ministry of Agriculture	MOA	Cook Islands Government

Supervision

The approach adopted to the data collection was to have two separate teams of supervisors and enumerators, one for the census of population and dwelling and another for the census of agriculture (CoA). The ministry of agriculture was responsible for the census of agriculture team while the Cook Islands Statistics Office (CISO) was responsible for the census of population and dwelling team.

The ministry of agriculture was responsible for the census of agriculture team with staff of the ministry of agriculture acting as supervisors and coordinators.

The role of the supervisor was to coordinate the field data collection activities, including management of the field teams, supplies and equipment, maps and listings, coordinate with local authorities concerning the survey. Additionally, the field supervisor assigned the work to the interviewers, spot checked work, maintained field control documents, and sent completed questionnaires and progress reports to the central office.

The field editor was responsible for reviewing each questionnaire at the end of the day, checking for missed questions, skip errors, fields incorrectly completed, and checking for inconsistencies in the data. The field editor also observed interviews and conducted review sessions with interviewers.

Responsibilities of the supervisors, enumerators and field editors are described in the Instructions for Supervisors and Field Editors, together with the different field controls that were in place to control the quality of the fieldwork.

Data Processing

Data Editing

The length and complexity of the census of agriculture forms made the exercise much more time consuming and virtually all records had to be edited. The data capture and data cleaning exercise for the census of agriculture took the best part of 12 months, including the adjustments following the re-enumeration of Aitutaki. Tabulation also proved to be challenging because of the need for considerable internal computation of areas and numbers of plants. The final database was then split up into a number of smaller databases designed for each set of tables. The tabulation was done using Microsoft EXCEL and ACCESS

In interpreting the results of the census of agriculture, account needs to be taken of the fact that households classified as having no agricultural or fishing activities in the census of population and dwellings were excluded from the census of agriculture, especially on Rarotonga. Other definitional differences between the two censuses should also be noted. The census of population and dwellings defined agricultural activity as crops, livestock and floriculture whereas the census of agriculture definition was primarily crops. Livestock and poultry raising was treated separately in the census of agriculture and flower growing was only included in the census of agriculture if it was a commercial activity or was carried out in conjunction with food crop activities.

Data Appraisal

Other forms of Data Appraisal

The forms were checked, edited and coded and prepared for 'scanning'. Scanning technology for data capture was used in the Cook Islands statistics office for the first time for the census of agriculture 2011. The data processing exercise for the census of agriculture was completed after the data processing exercise for the census of population and dwellings.

In interpreting the results of the Census of Agriculture (CoA), account needs to be taken of the fact that households classified as having no agricultural or fishing activities in the Census of Population Dwellings were excluded from the CoA, especially in Rarotonga.