Rwanda - National Agricultural Survey, 2008

National Institute of Statistics of Rwanda, Ministry of Agriculture

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Overview

Identification

ID NUMBER
RWA_2008_NAS_v01_EN_M_v01_A_OCS

Overview

ABSTRACT
The National Agricultural Survey 2008 (NAS 2008) was designed to provide a picture with reliable and updated agriculture sector figures, in order to serve as a baseline based on the facts and to set up development strategies that are most appropriate for the rural sector. This will steer progress towards the goals of Vision 2020, while having the fittest tools for measuring, monitoring and evaluation. Indeed in the context of Vision 2020 adopted by the highest authorities of the country, the transformation of agriculture is one of the pillars of that vision. The 2008 National Agricultural Survey (NAS) of Rwanda was undertaken from September 2007 to August 2008. As a result of the 1994 genocide, lives were lost, people were displaced or exiled. Without accurate measurements, it was not possible to evaluate objectively the performance of the agricultural sector and to know the real contribution of agriculture to the economy. Prior to the 2008 National Agricultural Survey, annual agricultural production was estimated using projections of an agricultural survey conducted in 1990, a methodology that was both inaccurate and unreliable.

KIND OF DATA
Census/enumeration data [cen]

UNITS OF ANALYSIS
Households

Scope

NOTES
The Census collected information on the following characteristics: household members, identification of the holdings, field descriptions, crops (including horticulture), agricultural inputs, Register for daily harvest, monthly record of daily harvest, inventory of livestock, animal production, crop-cutting (yield estimates), Register for daily fishery products, fishing activities, beekeeping, forestry activities, storage of harvest, nutrition and household foods.

TOPICS

Topic	Vocabulary	URI
Agriculture & Rural Development	FAO	
Forests & Forestry	FAO	
Food (production, crisis)	FAO	
Land (policy, resource management)	FAO	
Livestock	FAO	

Coverage

GEOGRAPHIC COVERAGE
National coverage

UNIVERSE
The unit of observation was the agricultural household. This was defined as the household where at least one member was

engaged in any of the following; agricultural activities, livestock, fisheries, forestry or bee-keeping. A form for listing was used to identify this type of household. The unit of analysis was the holding (large-farm) or agricultural household. The agriculture sample frame consists of all agricultural households residing in the enumeration area.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
National Institute of Statistics of Rwanda	
Ministry of Agriculture	Rwandan Government

OTHER PRODUCER(S)

Name	Affiliation	Role
Food and Agriculture Organization		Technical assistance
World Food Programme		Technical assistance

FUNDING

Name	Abbreviation	Role
Department for International Development	DFID	Funding
European Commission	EC	Funding
Food and Agriculture Organization	FAO	Funding
World Food Programme	WFP	Funding

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Office of Chief Statistician	OCS	Food and Agriculture Organization	Adoption of metadata for FAM
Census team, Statistics Division	ESS	Food and Agriculture Organization	Metadata producer

DDI DOCUMENT VERSION
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DDI DOCUMENT ID
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Sampling

Sampling Procedure

i. Frame
The sampling frame and cartography for the National Agricultural Survey 2008 came from the 2002 General Census of Population and Housing (RGPH). The RGPH included an agricultural module that was administered to all households to identify the agricultural households. Complete or sample enumeration methods The 2008 National Agricultural Survey (NAS 2008) covered a sample of 10,080 agricultural households spread out in all 30 Districts and the data are representative at the District level.

ii. Sample Design
The sample was a two-stage stratified sample design. The number of agricultural households identified in the 2002 General Census of Population and Housing was used as a measure of the size of the enumeration area (EAs). In order to have reliable survey estimates at the District level, the first stage of stratification was down at the District level. The Districts of Kigali City (Nyarugenge, Gasabo, Kicukiro) were grouped into one stratum because of the small number of agricultural EA's in each District. At the first stage of stratification, there were 28 strata. The second stage of stratification was to further divide the EAs in each District into the particular bio-climatic zone in which they were situated. Thus, each agricultural EA was classified into one of the Rwanda's ten agro-climatic zones. The analysis of the agricultural sample frame showed that most Districts (19) had two agro-climatic zones, six Districts had three agro-climatic zones, two (Musanze and Nyamasheke) had four zones and three Districts were in a single-agro climatic zone. In consideration of the financial and operational constraints, and in order to have reliable estimates at district level, the methodologists recommended the selection of 840 EAs as the primary sampling units (PSU's). The PSU's were geographical areas with clearly identifiable boundaries so that an enumerator could conduct the listing of households during a fixed period of time. The sample EAs were drawn using probability proportional to size (PPS).The size of each PSU was the number of households. The sample was then divided into 4 sub-samples (replicates) of 210 EA's each that could be used for post-census surveys. Households were listed within sample EA's in order to establish an up-to-date list of households in the EA. The listing led to the identification of agricultural households - the secondary sampling units. These lists of agricultural households allowed for the random selection of 15 agricultural households by EA with equal probability of selection. Among these 15 households, 12 participated in interviews and 3 served as replacements should a selected household be a no-contact or a refusal. In the second stage, 12 households were interviewed in each sample EA. For the National Agricultural Survey 2008, there were a total of 10,080 households sampled.

Weighting

To make sample estimates from the Agricultural Surveys representative for all agricultural households of the country, it was necessary to multiply the data by a sampling weight, or expansion factor. The basic weight for each sample agricultural household was equal to the inverse of its probability of selection. This probability was obtained by multiplying the probabilities at each stage of selection.

Questionnaires

Overview

There were 18 separate Forms or Questionnaires. The Census of Agriculture collected all the core data as recommended by the FAO. The forms used were:

FORM 1: Characteristics of members of agricultural household
FORM 2.1: Identification of blocks of the holding
FORM 2.2: Sketch of basic blocks
FORM 2.3: Data of the field
FORM 2.4: List of cultures
FORM 3: Purchase of agricultural inputs
FORM 4.1: Register for daily harvest
FORM 4.2: Summary of monthly record for daily harvest
FORM 5.1: Inventory of livestock
FORM 5.2: Flux and animal production
FORM 6: Squares yield
FORM 7.1: Register for daily fishery products
FORM 7.2: Fishing activities
FORM 8: Activities of beekeeping
FORM 9: Activities of forestry
FORM 10: Activities of horticulture
FORM 11: Storage of harvest
FORM 12: Nutrition and household food

All questionnaires are attached to the external materials section.

Data Collection

Data Collection Dates

Start	End	Cycle
2007-09	2008-08	N/A

Data Collection Mode

Face-to-face [f2f]

Data Collection Notes

Data collection was done using printed questionnaires, which were filled by enumerators according to a harmonized calendar in all selected EA's. Each enumerator had to first list the households in two EA's and then visit 12 households per EA, or 24 households per enumerator. Because of the number of growing seasons, it was necessary for the interviewers to visit each sample household several times over the year to collect the annual crop area and production data.

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Data Processing

Data Editing

i. Data Entry
Upon the closing of fieldwork of season 2008, a large volume of data was available for entry. This required a consistent supply and a significant number of staff input to recruit and employ. Unfortunately, organizational and financial difficulties arose and led to a late start of data entry. For data entry operations, a computer program was developed using a CSPro statistical software application with a questionnaire on each sheet. A training session was organized on this data entry program and on the nature and extent of work to do. In total, this operation mobilized 184 data entry clerks, 10 controllers, 3 checkers, 3 supervisors of coding and 92 computers. A first team of data entry clerks, controllers and checkers worked in the morning and was be relayed by a second team to work in the evening.

ii. Data cleaning and processing
A computer statistician consultant was recruited for the cleaning work and data processing for NAS 2008. The methodology followed in cleaning and processing the data is contained in the document «Plan méthodologique pour l'apurement et le traitement des données» formulated by the consultant. The consultant had to monitor compliance with the codification of collection sheets and make the necessary corrections.

iii. Data analysis
An international consultant has been recruited to carry out the analysis of the NAS 2008. The analysis covered the demographic and social characteristics of agricultural farmers, farms characteristics, agricultural practices and crop production, livestock practices and production, fishery, aquaculture and beekeeping practices, forestry practices and income, as well as food stocks and nutrition of agricultural households.

Data Appraisal

Other forms of Data Appraisal

The 2008 National Agricultural Survey results were compared to other pre-existing routine data (according to their availability and reliability). The comparable data was mainly from the Ministry of Agriculture - particularly data on agricultural production, yield and area, livestock numbers, and production. There was also some data on, for example, coffee and tea from the “Office des Cultures Industrielles du Rwanda”, that were in line with that from the NAS 2008 (with discrepancies explained by exclusions and differences noticed in the methodology).