Rwanda - Rwanda Seasonal Agriculture Survey 2017

National Institute of Statistics of Rwanda

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Overview

Identification

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RWA_2017_RSAS_v01_EN_M_v01_A_OCS

Version

VERSION DESCRIPTION
Version 0.1 Edited anonymized dataset for public use

PRODUCTION DATE
2019-02-13

Overview

ABSTRACT
The main objective of the Seasonal Agriculture Survey is to provide timely, accurate, reliable and comprehensive agricultural statistics that describe the structure of agriculture in Rwanda in terms of land use, crop production and livestock to monitor current agricultural and food supply conditions and to facilitate evidence based decision making for the development of Agriculture sector.

In this regard, the National Institute of Statistics of Rwanda conducted the Seasonal Agriculture Survey (SAS) from November 2016 to October 2017 to gather up-to-date information for monitoring progress on agriculture programs and policies in Rwanda, including the Second Economic Development and Poverty Reduction Strategy (EDPRS II) and Vision 2020. This 2017 RSAS covered three agricultural seasons (A, B and C) and provides data on background characteristics of the agricultural operators, farm characteristics (area, yield and production), agricultural practices, agricultural equipments, use of crop production by agricultural operators and by large scale farmers.

KIND OF DATA
Sample survey data [ssd]

UNITS OF ANALYSIS
Agricultural holdings

Scope

NOTES
The scope of 2017 Rwanda Seasonal Agriculture Survey (RSAS) concerned farm characteristics (area, yield and production; agricultural practices; small agricultural equipments; and use of crop production).

Coverage

GEOGRAPHIC COVERAGE
National coverage

GEOGRAPHIC UNIT
RSAS2017 data is disaggregated up to the district level.

UNIVERSE

The RSAS 2017 targeted potential agricultural land and large scale farmers.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
National Institute of Statistics of Rwanda	Ministry of Finance and Economic Planning

OTHER PRODUCER(S)

Name	Affiliation	Role
Ministry of Agriculture and Animal Resources	Government of Rwanda	Technical partner
National Agriculture Export Board	Government of Rwanda	Technical partner
Rwanda Agricultural Board	Government of Rwanda	Technical partner
Rwanda Natural Resources Authority	Government of Rwanda	Technical partner
Rwanda Environmental Management Authority	Government of Rwanda	Technical partner

FUNDING

Name	Abbreviation	Role
The Government of Rwanda	GoR	Funder

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Office of Chief Statistician	OCS	Food and Agriculture Organization	Metadata adapted for FAM
National Institute of Statistics of Rwanda	NISR	Ministry of Finance and Economic Planning	Metadata producer

DDI DOCUMENT VERSION

RWA_2017_RSAS_v01_EN_M_v01_A_OCS_v01

DDI DOCUMENT ID

DDI_RWA_2017_RSAS_v01_EN_M_v01_A_OCS_FAO

Sampling

Sampling Procedure

In order to provide the basis for conducting sample surveys based on complete coverage of the farm level, and as a better way of collecting agricultural data and finding better precise survey estimates, this Upgraded Seasonal Agricultural Survey (USAS) used a Multiple-Frame Sampling (MFS) methodology by which, area frame was constructed and survey sample was drawn from it. Apart from that, a list frame of Large-Scale Farmers (LSFs), with at least 10 hectares of agricultural holdings, was done to complement the area frame just to cover crops mostly grown by LSFs and that cannot be easily covered in area frame.

For area frame design, the selection process was a two-stage process which begins with the first stage at the district level with every agriculture stratum (1.1, 2.0 and 3.0) divided into Primary Sampling Units (PSUs) of 100 ha (in strata1.1 and 2.0) and 500 ha (in stratum 3.0). The strata are broken into PSUs following visible boundaries and each PSU is given a unique PSU identity number. Based on the sample allocation to each district stratum the first-stage of the sample selection process uses a probability proportional to size (PPS) sampling method to select the number of PSUs equal to each stratum.

Then each of the selected PSUs is divided into Secondary Sampling Units (SSUs) of approximately 10 ha for strata 1.1 and 2.0 and approximately 50 ha for stratum 3.0, and then randomly one SSU is selected from each sampled PSU and each is called a sample segment. A total number of 960 segments were selected countrywide using random sampling and the sample covers all 30 districts to ensure a representative sample at district level.

Finally, selected segment is subdivided into 1000 grid squares of 100 square meters each. To identify the plots/farms within the segment to be enumerated, a random sample of 5% grid squares was selected in each sample segment resulting in a nationwide point-sample total of 51,390 grid squares. A total number of 201 LSFs were identified and enumerated to complement area frame methodology.

Weighting

Sampling weights were calculated for each stratum in each district considering the total number of segments in the stratum and the sample size in the specific stratum.

Questionnaires

Overview

There were two types of questionnaires used for this survey namely Screening questionnaire and plot questionnaires.
A Screening questionnaire was used to collect information that enabled identification of a plot and its
land use using the plot questionnaire. For point-sampling , the plot questionnaire is concerned with the collection of data on characteristics of crop identification, inputs (seeds, fertilizers, labor ...), agricultural practices, crop production and use of production. All the surveys questionnaires used were published in English.

Data Collection

Data Collection Dates

Start	End	Cycle
2016-12-08	2017-02-15	Season A
2017-04-24	2017-07-02	Season B
2017-09-21	2017-10-30	Season C

Data Collection Mode

Computer Assisted Personal Interview [capi]

Data Collection Notes

Data collection consists of two distinct phases: The first Phase, known as screening activity, consists of visiting all sampled segments and delineating all plots in which the sampled grids points are fallen and thereafter recording the related information using screening questionnaire. The second phase consists of visiting the sub-sampled agricultural plots from screened plots in phase one as well as all Large- Scale Farmers having cultivated plots in the season the survey is being conducted. This phase is conducted in the period of harvesting where farmers are requested to provide information about sowing period and harvesting period, inputs used, agricultural practices done on the plots, the crop production and its use.

For SAS 2018 the NISR employed around 151 field workers in the form of two-person teams to conduct the fieldwork. The fieldwork consisted of a Phase 1 for segment screening and a Phase 2 for plot data collection. Training was provided to all fieldwork personnel on the data collection methodologies associated with the use of GPS for point-sampling and computer tablet questionnaires used for plot data collection and farmer interviews. The tablet computer assisted data collection and interview allowed for very fast and efficient uploading and transfer of the enumerated data from the field to NISR headquarters for processing. The tablet software instruments (electronic version of the paper questionnaires) allowed for instantaneous checking of the respondent data and automatically directed the enumerator questioning to reduce non-sampling errors within the data collection.

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Data Collectors

Name	Abbreviation	Affiliation
National Institute of Statistics of Rwanda	NISR	Ministry of Finance and Economic Planning

Supervision

The 2017 USAS used 180 fieldworkers grouped in 33 field teams and 30 team leaders. All fieldwork staff in 2017 held a degree in Agricultural Sciences and were trained by NISR headquarter staff before starting data collection. Higher level supervision of staff from NISR visited the field teams during each phase of data collection to ensure data quality control.

At the bottom of the hierarchy, there are enumerators who would be assisted by a team leader also known as a controller. His/ her main function is to introduce the enumerators to the various key people from the sector to the villages leaders up to

operators in the Secondary Sampling Unit (known as Segment), and assist enumerators during the whole course of the survey .

A higher level supervision staff from NISR visited the field teams during each phase of data collection to ensure quality control.
Responsibilities of a Team Leader is to manage the interviewers to ensure successful completion and quality of data collected in a given time period for the fieldwork.

He/she was expected to record information about the fieldwork , which track the status of completion of the work in the field, document problems in the field and solutions taken to resolve these problems. Specifically, his/her tasks included:

1. Introduce the survey and interviewers at local level where the survey is administered.
2. Monitor and attend some interviews and make comments on the worker's performance.
3. Meet frequently with each member of the group to discuss, improve and organize work.
4. Check the availability of all the necessary items before going on field.
5. Help workers to solve the problems they encounter
6. Manage the team's work schedule
7. Make sure all the big farmers are identified and surveyed.
8. Communicate with NISR, regarding field issues, as necessary.

Data Processing

Data Editing

The CAPI method of data collection allows the enumerators in the field to collect and enter data with their tablets and then synchronize to the server at headquarters where data are received by NISR staff, checked for consistency at NISR and thereafter transmitted to analysts for tabulation and reporting using STATA and Excel software.

Data Appraisal

Other forms of Data Appraisal

All farm questionnaires were subjected to two/three rounds of data quality checking. The first round was conducted by the enumerator and the second round was conducted by the team leader to check if questionnaires had been well completed by enumerators. And in most cases, questionnaires completed by one enumerator were peer-reviewed by another enumerator before being checked by the Team leader.