

Rwanda - Rwanda Season Agriculture Survey 2019

**National Institute of Statistics of Rwanda - Ministry of Finance and Economic
Planning**

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Overview

Identification

ID NUMBER
RWA-NISR-SAS-2019-v0.1

Version

VERSION DESCRIPTION
Edited, anonymous dataset for public use

PRODUCTION DATE
2019-12-01

Overview

ABSTRACT

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

In this regard, the National Institute of Statistics of Rwanda conducted the Seasonal Agriculture Survey (SAS) from September 2018 to August 2019 to gather up-to-date information for monitoring progress on agriculture programs and policies. This 2019 SAS covered Main agricultural seasons are Season A (which starts from September to February of the following year) and Season B (which starts from March to June). Season C is the small agricultural season mainly for vegetables and sweet potato grown in swamps and Irish potato grown in volcanic agro-ecological zone and provides data on farm characteristics (area, yield and production), agricultural practices, agricultural inputs and use of crop production

KIND OF DATA
Sample survey data [ssd]

UNITS OF ANALYSIS
This seasonal agriculture survey focused on the following units of analysis: Small scale agricultural farms and large scale farms

Scope

NOTES

The scope of 2019 Seasonal Agriculture Survey concerned farm characteristics (Area, yield, production; use of production, agricultural practices; agriculture inputs and land tenure).

Coverage

GEOGRAPHIC COVERAGE
National coverage allowing district-level estimation of key indicators

UNIVERSE
The SAS 2019 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
Rwanda Agricultural Board	Ministry of Agriculture and Animal Resources	Technical partner

FUNDING

Name	Abbreviation	Role
Government of Rwanda	GoR	Funder

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
National Institute of Statistics of Rwanda	NISR	Ministry of Finance and Economic Planning	Documentation of the Study

DATE OF METADATA PRODUCTION

2020-10-28

DDI DOCUMENT VERSION

Version 0.1 Edited anonymized dataset for public use

DDI DOCUMENT ID

RWA-NISR-SAS-2019-v0.1

Sampling

Sampling Procedure

Out of 10 strata, only 4 are considered to represent the country land potential for agriculture, and they cover the total area of 1,787,571.2 hectares (ha). Those strata are: 1.0 (tea plantations), 1.1 (intensive agriculture land on hillsides), 2.0 (intensive agriculture land in marshlands) and 3.0 (rangelands). The remainder of land use strata represents all the non-agricultural land in Rwanda. Stratum 1.0, which represents tea plantations, is assumed to be well monitored through administrative records by the National Agriculture Export Board (NAEB), an institution whose main mission is to promote the agriculture export commodities.

Thus, SAS is conducted on 3 strata (1.1; 2.0 & 3.0) to cover other major crops. Within district, the agriculture strata (1.1, 2.0 & 3.0) were divided into larger sampling units called first-step or primary sampling units (PSUs) (as shown in Figure 2). Strata 1.1 and 2.0 were divided into PSUs of around 100 ha while stratum 3.0 was divided into PSUs of around 500 ha. After sample size determination, a sample of PSUs was done by systematic sampling method with probability proportional to size, then a given number of PSUs to be selected for each stratum, was assigned in every district. In 2019, the 2018 SAS sample of 780 segments has been kept the same for SAS 2019 in Season A and B.

At first stage, 780 PSUs sampled countrywide were proportionally allocated in different levels of stratification (Hill side, marshland and rangeland strata) for 30 districts of Rwanda, to allow publication of results at district level. Sampled PSUs in each stratum were systematically selected from the frame with probability of selection proportional to the size of the PSU.

At the second stage 780 sampled PSUs were divided into secondary sampling units (SSUs) also called segments. Each segment is estimated to be around 10 ha for strata 1.1 and 2.0 and 50 ha for stratum 3.0 (as shown in Figure 3). For each PSU, only one SSU is selected by random sampling method without replacement. This is why for 2019 5 SAS season A and B, the same number of 780 SSUs was selected. In addition to this, a list frame of large-scale farmers (LSF), with at least 10 hectares of agricultural holdings, was done to complement the area frame just to cover crops mostly grown by large scale farmers and that cannot be easily covered in area frame

At the last sampling stage, in strata 1.1 and 2.0 each segment of an average size of 10 ha (100,000 Square meters) has been divided into around 1,000 grids squares of 100 Sq. meters each, while for stratum 3.0 around 5,000 grids squares of 100 Sq. meters each have been divided. A point was placed at the center of every grid square and named a grid point (A grid point is a geographical location at the center of every grid square). A random sample of 5% of the total grid points were selected in each segment of strata 1.1 and 2.0 whereas a random sample of 2% of total grid points was selected in each segment of stratum 3.0. Grids points are reporting units within a segment, where enumerators go to every grid point, locate and delineate the plots in which the grid falls, and collect records of land use and related information. The recorded information represents the characteristics of the whole segment which are extrapolated to the stratum level and hence the combination of strata within each district provides district area related statistics.

Response Rate

Data collection was done in 780 segments and 222 large scale farmers holdings for Season A, whereas in Season C data was collected in 232 segments, response rate was 100% of the sample

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 questionnaire. 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, crop production and use of production, inputs (seeds, fertilizers and pesticides), agricultural practices and land tenure. All the surveys questionnaires used were published in English

Data Collection

Data Collection Dates

Start	End	Cycle
2018-12-02	2019-02-09	Season A
2019-05-05	2019-06-23	Season B
2019-09-08	2019-09-27	Season C

Data Collection Mode

Face-to-face [f2f]

Data Collection Notes

Data collection is done in 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 2019 the NISR employed around 153 field workers and 22 team leaders. 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 2019 SAS used 153 fieldworkers and 22 team leaders. All fieldwork staff in 2019 held a degree in Agricultural Sciences and was trained by NISR headquarters 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 tracks 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 using STATA software, and reporting using office Excel and word as well

Data Appraisal

No content available

Documentation

Questionnaires

Plot Questionnaire-Season 2019

Title	Plot Questionnaire-Season 2019
Author(s)	National Institute of Statistics of Rwanda
Date	2019
Country	Rwanda
Language	English
Contributor(s)	Government of Rwanda
Publisher(s)	National Institute of Statistics of Rwanda (NISR) - Ministry of Finance and Economic Planning (MINECOFIN)
Filename	Plot Questionnaire-Season 2019_English.pdf

Screening Questionnaire-Season 2019

Title	Screening Questionnaire-Season 2019
Author(s)	National Institute of Statistics of Rwanda
Date	2019
Country	Rwanda
Language	English
Contributor(s)	Government of Rwanda
Publisher(s)	National Institute of Statistics of Rwanda (NISR) - Ministry of Finance and Economic Planning (MINECOFIN)
Filename	Screening Questionnaire-Season 2019_English.pdf

Reports

SAS 2019_Annual report

Title	SAS 2019_Annual report
Author(s)	National Institute of Statistics of Rwanda
Country	Rwanda
Language	English
Filename	SAS 2019_Annual report _published.pdf
