

# Rwanda - Rwanda Seasonal Agriculture Survey 2019

**National Institute of Statistics of Rwanda**

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## Overview

### Identification

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#### ID NUMBER

RWA\_2019\_RSAS\_v01\_EN\_M\_v01\_A\_OCS

### Overview

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#### 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

Agricultural holdings

### Scope

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#### NOTES

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

#### TOPICS

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

### Coverage

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#### GEOGRAPHIC COVERAGE

National coverage

#### UNIVERSE

The RSAS 2019 targeted potential agricultural land and large scale farmers.

### Producers and Sponsors

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## 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

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## METADATA PRODUCED BY

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

## DDI DOCUMENT VERSION

RWA\_2019\_RSAS\_v01\_EN\_M\_v01\_A\_OCS\_v01

## DDI DOCUMENT ID

DDI\_RWA\_2019\_RSAS\_v01\_EN\_M\_v01\_A\_OCS\_FAO

# Sampling

## Sampling Procedure

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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

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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

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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

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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 and pesticides)
- agricultural practices
- land tenure

All the surveys questionnaires used were published in English.

## Data Collection

### Data Collection Dates

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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

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Face-to-face [f2f]

### Data Collection Notes

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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 Processing

### Data Editing

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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