Rwanda - Rwanda Seasonal Agriculture Survey 2016

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

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Overview

Identification

ID NUMBER
RWA-NISR-RSAS-2016-V1.1

Version

VERSION DESCRIPTION
Version 1.1 Edited anonymized dataset for public use

PRODUCTION DATE
2017-04-17

Overview

ABSTRACT
The main objective of the new agricultural statistics program is to provide timely, accurate, credible and comprehensive agricultural statistics that would not only describe the structure of agriculture in Rwanda in terms of land use, crop production and livestock and can be used for food and agriculture policy formulation and planning, but also which can be used for the compilation of national accounts statistics.

In this regard, the National Institute of Statistics of Rwanda conducted the Seasonal Agriculture Survey (SAS) from November 2015 to October 2016 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 2016 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
This seasonal agriculture survey focused on the following units of analysis:

-Agricultural Operators and Large Scale Farmers

Scope

NOTES
The scope of 2016 Seasonal Agriculture Survey concerned demographic and social characteristics of Agricultural Operators and Large Scale Farmers, and farm characteristics (Area, yield and production; agricultural practices; small agricultural equipments; and use of crop production).

Coverage

GEOGRAPHIC COVERAGE
National coverage

UNIVERSE

The RSAS 2016 targeted agricultural operators and large scale Farmers operating in Rwanda.

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
National Bank of Rwanda	Government of Rwanda	Technical partner

FUNDING

Name	Abbreviation	Role
The Government of Rwanda	GoR	Funder
World Bank	WB	Funding partner
Ukaid		Funding partner
European Union	EU	Funding partner

OTHER ACKNOWLEDGEMENTS

Name	Affiliation	Role
Local Government	Ministry of Local Governance	Survey campaign an Mobilisation

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
National Institute of Statistics of Rwanda	NISR	Minisrty of Finance and Economic Planning	Metadata producer

DATE OF METADATA PRODUCTION
2015-03-26

DDI DOCUMENT VERSION
Version 1.1 (June 2006).This version is identical to version 1.0 except for 'Sampling', ' Datasets' and 'External Resources' sections which were updated.

DDI DOCUMENT ID
ddi-rwa-nisr-rsas-2016-V1.1

Sampling

Sampling Procedure

The Seasonal Agriculture Survey (SAS) sample is composed of two categories of respondents: agricultural operators1 and large-scale farmers (LSF).

For the 2016 SAS, NISR used as the sampling method a dual frame sampling design combining selected area frame sample3 segments and a list of large-scale farmers.

NISR used also imagery from RNRA with a very high resolution of 25 centimeters to divide the total land of the country into twelve strata. A total number of 540 segments were spread throughout the country as coverage of the survey with 25,346 and 23,286 agricultural operators in Season A and Season B respectively. From these numbers of agricultural operators, sub-samples were selected during the second phases of Seasons A and B.

It is important to note that in each of agricultural season A and B, data collection was undertaken in two phases. Phase I was mainly used to collect data on demographic and social characteristics of interviewees, area under crops, crops planted, rainfall, livestock, etc. Phase II was mainly devoted to the collection of data on yield and production of crops.

Phase I serves at collecting data on area under different types of crops in the screening process, whereas the Phase II is mainly devoted to the collection of data on demographic, social characteristics of interviewees, together with yields of the different crops produced. Enumerated large-scale farmers (LSF) were 558 in both 2015 Season A and B. The LSF were engaged in either crop farming activities only, livestock farming activities only, or both crop and livestock farming activities.
Agricultural operators are the small scale farmers within the sample segments. Every selected segment was firstly screened using the appropriate materials such as the segment maps, GIS devices and the screening form. Using these devices, the enumerators accounted for every plot inside the sample segments. All Tracts6 were classified as either agricultural (cultivated land, pasture, and fallow land) or non-agricultural land (water, forests, roads, rocky and bare soils, and buildings).

During Phase I, a complete enumeration of all farmers having agricultural land and operating within the 540 selected segments was undertaken and a total of 25,495 and 24,911 agricultural operators were enumerated respectively in Seasons A and B. Season C considered only 152 segments, involving 3,445 agricultural operators.

In phase II, 50% of the large-scale farmers were undertaking crop farming activities only and 50% of the large-scale farmers were undertaking both crop and livestock farming and were selected for interview. A sample of 199 and 194 large-scale farmers were interviewed in Seasons A and B, respectively, using a farm questionnaire.

From the agricultural operators enumerated in the sample segments during Phase I, a sample of the agricultural operators was designed for Phase II as follows: 5,502 for Season A, 5,337 for Season B and 644 for Season C. The method of probability proportional to size (PPS) sampling at the national level was used.
Furthermore, the total number of enumerated large-scale farmers was 774 in 2016 Season A and 622 in Season B.

The Season C considered 152 segments counting 8,987 agricultural operators from which 963 agricultural operators were selected for survey interviews.

Response Rate

The response rate for Seasonal Agriculture Survey is 98%.

Weighting

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

Questionnaires

Overview

There were two types of questionnaires used for this survey namely Screening questionnaire and farm questionnaires.

A Screening Questionnaire was used to collect information that enabled identification of an Agricultural Operator or Large Scale Farmer and his or her land use.
Farm questionnaires were of two types:
a) Phase I Farm Questionnaire was used to collect data on characteristics of Agricultural Operators, crop identification and area, inputs (seeds, fertilizers, labor, ...) for Agricultural Operators and large scale farmers.
b) Phase 2 Farm questionnaire was used in the collection of data on crop production and use of production.

It is important to mention that all these 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.
For season C, after screening, an interview was conducted for each selected tract/Agricultural Operator using one consolidated Farm questionnaire.
All the surveys questionnaires used were published in both English and Kinyarwanda languages.

Data Collection

Data Collection Dates

Start	End	Cycle
2015-11-05	2016-01-27	Season A
2016-03-08	2016-06-30	Season B
2016-09-13	2016-10-02	Season C

Data Collection Mode

Face-to-face [f2f]

Data Collection Notes

The 2016 SAS used 118 enumerators grouped in 35 field teams and 28 team leaders. All fieldwork staff in 2016 possesses a degree in Agronomy Science and was trained before starting data collection. Higher level supervision staff from NISR visited the field teams during each phase of data collection to ensure quality control.

Enumerators and Team leaders had adequate materials composed of Enumerator's Instruction manual, Screening questionnaire, Farm questionnaires, Measuring tapes, Ruler, Pens, Pencils, Calculator, Weighing scales, Global Positioning System (GPS), Personal Data System (PDA), Maps, Rain coats, Boots, Umbrella, First aid equipment, etc. Each team was assigned a vehicle.

Before proceeding to the field, enumerators and their team leaders checked if they had all required materials for their fieldwork. All staff was required to arrive early on the field (Segment or LSF). Upon arrival in the field, the enumerators and their team Leaders took the related geographical coordinates that were used by supervisors to know the real starting time of the fieldwork.

The next step was the segment delineation or LSF and taking of geographical coordinates for the identified landmarks to allow supervisors to check if the segment was delineated appropriately and to ensure the collected data related to the plots inside the appropriate segment or LSF.

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Data Collectors

Name	Abbreviation	Affiliation

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National Institute of Statistics of Rwanda	NISR	Ministry of Finance and Economic Planning

Supervision

The survey used 118 Enumerators organised around 35 field teams and 28 team leaders giving a ratio of one team leader to 4 Enumerators.

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 by completing the fieldwork forms, which track the status of completion of the work in the field, document problems in the field and solutions taken to resolve these problems, and track the data entry process. Specifically, his/her tasks included:

1. Introduce the survey and interviewers at local level where the survey is administered.
2. Review questionnaires and check that it has been correctly filled in.
3. Monitor and attend some interviews and make comments on the worker's performance.
4. Meet frequently with each member of the group to discuss, improve and organize work.
5. Check the availability of all the necessary items before going on field.
6. Help workers to solve the problems they encounter in dealing with respondents who are not responsive to questions or refuse to be interviewed.
7. Manage the team's work schedule, including tracking questionnaires completed in the field, questionnaires assigned to the data entry team, and questionnaires that require correction by interviewers.
8. Make sure all the big farmers are identified and surveyed.
9. Communicate with NISR/MINAGRI staff, regarding field issues, as necessary.
He/she was responsible for helping the interviewers to identify the segments and tracts that have been allocated to them, resolving any problems with reluctant operators observing interviews and making checks by visiting the operators after the survey to verify data.

Data Processing

Data Editing

Data editing took place at different stage. Firstly, the filled questionnaires were repatriated at NISR for office editing and coding before data entry started. Data entry of the completed and checked questionnaires was undertaken at the NISR office by 20 staff trained in using the CSPro software. To ensure appropriate matching of data in the completed questionnaires and plot area measurements from the GIS unit, a LOOKUP file was integrated in the CSPro data entry program to confirm the identification of each agricultural operator or LSF before starting data entry. Thereafter, data were entered in computers, edited and summarized in tables using SPSS and Excel.

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.

Documentation

Questionnaires

Screening Questionnaire for Big Farmers

Title	Screening Questionnaire for Big Farmers
Author(s)	National Institute of Statistics of Rwanda
Date	2015-09-10
Country	Rwanda
Language	Kinyarwanda
Publisher(s)	National Institute of Statistics of Rwanda
Description	This is the screening questionnaire for big farmers
Filename	q-screening-rsas-2016-big Farmer-Kiny.pdf

screening questionnaire for segments

Title	screening questionnaire for segments
Author(s)	National Institute of Statistics of Rwanda
Date	2015-09-10
Country	Rwanda
Language	Kinyarwanda
Publisher(s)	NISR
Description	This is the screening questionnaire for SAS 2016 segments
Filename	q-screening_rsas-2016-segment.pdf

Farm Questionnaire

Title	Farm Questionnaire
Author(s)	National Institute of Statistics of Rwanda
Date	2015-09-10
Country	Rwanda
Language	Kinyarwanda
Publisher(s)	NISR
Description	This is the farm questionnaire for SAS 2016
Filename	q-farm-rsas-2016-kin.pdf

Reports

Seasonal Agriculture Survey Report 2016

Title	Seasonal Agriculture Survey Report 2016
Author(s)	National Institute of Statistics of Rwanda
Date	2016-12-01
Country	Rwanda
Contributor(s)	The 2013 RSAS was implemented by the National Institute of Statistics of Rwanda (NISR) in partnership with the Ministry of Agriculture and Animal Resources (MINAGRI), National Agriculture Export Board (NAEB), Rwanda Agricultural Board (RAB), Ministry of
Publisher(s)	National Institute of Statistics Of Rwanda
Description	This is the Seasonal Agriculture Survey report.

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