



**The Republic of Rwanda**



# SEASONAL AGRICULTURAL SURVEY

## SEASON A 2023

## REPORT

**April 2023**

# **SEASONAL AGRICULTURAL SURVEY**

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# I. INTRODUCTION

Quality agriculture statistics are useful in monitoring the performance of national agricultural programs and hence, imperative for evidence-based decision making. While the use of statistics in decision-making processes continues to grow, the demand for agriculture data is also increasing. In this regard, the National Institute of Statistics of Rwanda (NISR) in collaboration with the Ministry of Agriculture and Animal Resources (MINAGRI) conducts the Seasonal Agricultural Survey (SAS) to gather agricultural information mainly related to potential agricultural land use; crop area, crop yield and production; agricultural inputs and practices as well as other agricultural statistics.

This survey is not covering data on coffee and tea production, they are obtained from administrative records collected by the National Agricultural Export Development Board (NAEB). Seasonal Agricultural Survey (SAS) covers three main agricultural seasons: Season A (September to February of the following year), Season B (March to June) while Season C (July-September) is a shorter season mainly for vegetables, sweet potato grown in swamps and Irish potato grown in the volcanic agro-ecological zone.

## 1.1. Objectives of SAS

The main objective of SAS 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. The survey results are useful to monitor the current agricultural and food supply conditions and facilitate evidence-based decision making for the development of the agricultural sector. This report presents the findings of 2023 season A related to:

1. Land use:
  - Agricultural land: It is part of land potential for agriculture which includes land already used for farming, fallow land “farmland ploughed but left for a period without being sown in order to restore its fertility or to avoid surplus production”, and land used as pasture.
  - Arable land: land able to be grown and produce crops for food and feeds supply purpose. This area excludes land under permanent crops<sup>1</sup> and permanent pasture.
  - Physical crop cultivated area: area occupied with crops.
  - Pasture land: area under natural grasses reserved for livestock or occupied with fodder crops;
  - Fallow land: cultivable land free for cultivation in a temporal period (less than 5 years).
2. Crop land: Cultivated land devoted to each cultivated crop.
3. Crop production: Quantity of harvested crop produce used for food, livestock feeds, seeds, etc (quantified into kilograms or tons.)
4. Crop yield: It is a measurement of the quantity of crop harvested per unit of land area (kg per hectare). It is used to determine the efficiency of food production at a certain period.
5. Use of inputs (this assesses the level of use of improved seeds, fertilizers, and pesticides)
6. Agricultural practices (practice of irrigation and soil protected against erosion) and others.

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<sup>1</sup> Permanent crops are crops produced from plants which last for many seasons, rather than being replanted after each harvest. Those crops are fruit trees, sugar cane, coffee, tea, banana, tree plantations, nuts trees among others).

## II. SURVEY DESIGN

### 2.1. Sample frame design

To provide the basis for conducting probability surveys based on complete coverage of the farm level, and as a better way of collecting agricultural data and find better precise survey estimates, SAS uses a Multiple-Frame Sampling (MFS) methodology by which, area frame is constructed, and survey sample is drawn from it. In addition, a list frame of large-scale farmers (LSF), with at least 10 hectares of agricultural holdings is done to complement the area frame to cover crops mostly grown by large scale farmers which are not easily covered in area frame. To construct area frame, the process involves the following two steps: land cover classification, land stratification and sampling of segment.

#### 2.1.1. Land classification

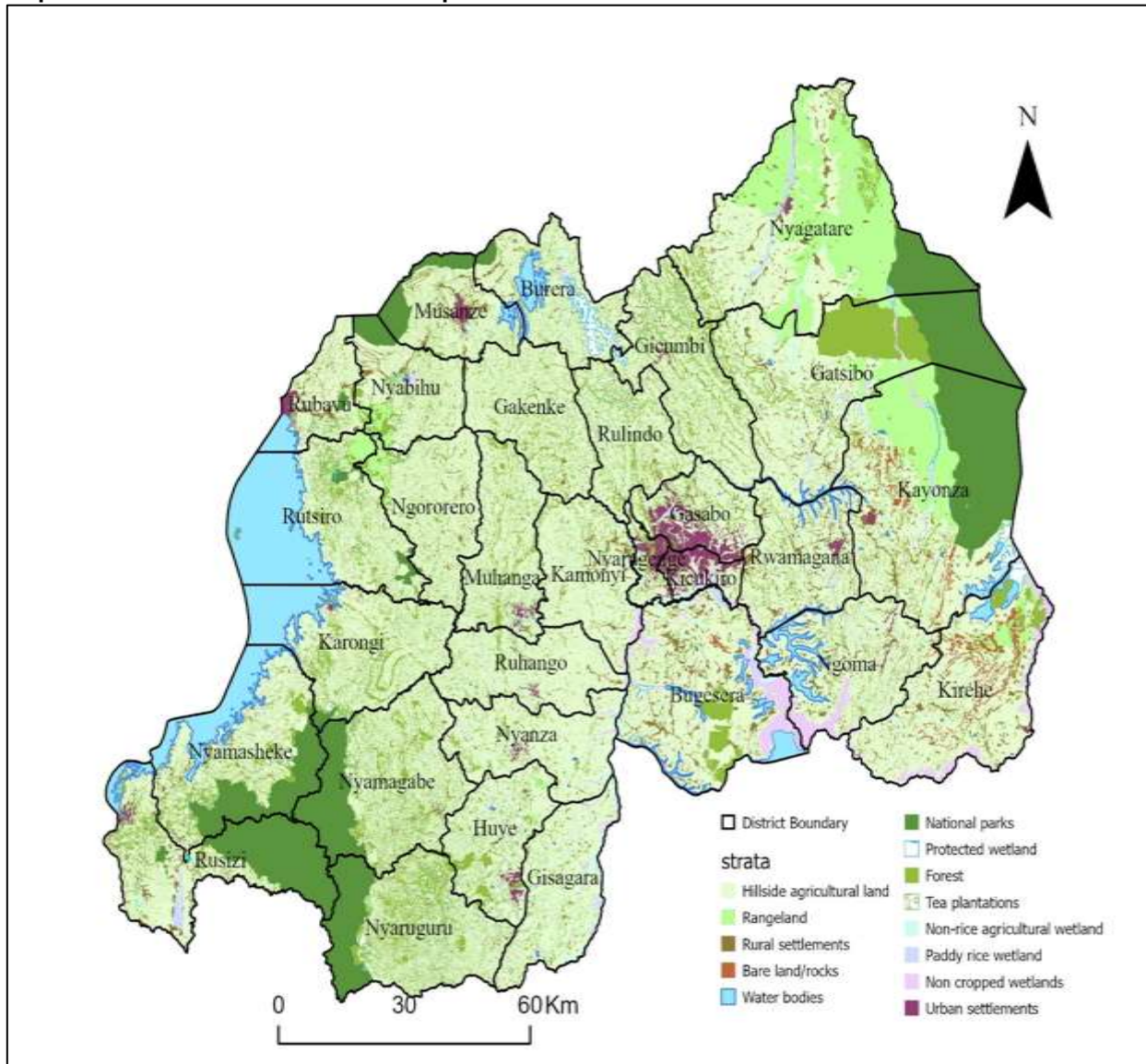
Land classification was done using Rwanda land cover map which is a combination of different layers available in the country, plus a photo interpretation of a series (2010 to 2020) of high-resolution satellite images from Worldview. The Rwanda land cover map is divided into 13 land cover classes (as shown in Table 1).

**Table 1: List of Rwanda land cover classes**

No	Code	Land cover class name	Area (Ha)	Percentage share
1	1.0	Consolidated tea plantations	17,821	0.70
2	1.1	Hillside agricultural land	1,343,933	53.10
3	2.1	Non-rice agricultural wetland	55,807	2.20
4	2.2	Paddy rice wetland	21,848	0.90
5	2.3	Non cropped wetlands	37,743	1.50
6	3.0	Rangeland	144,490	5.70
7	4.1	Urban settlements	31,612	1.20
8	4.2	Rural settlements	78,928	3.10
9	5.0	Bare land/rocks	15,404	0.60
10	6.0	Water bodies	135,295	5.30
11	7.0	National parks	241,455	9.50
12	8.0	Protected wetland	12,201	0.50
13	9.0	Forest plantations	395,001	15.60

Source: NISR, SAS 2023

**Map 1: Rwanda land classification map done in 2020**



Source: NISR, SAS 2023

The second step of building the area sample frame was to group land cover classes into strata in order to identify agricultural strata to be considered in sample frame.

### 2.1.2. Stratification

Out of thirteen land cover classes, five are considered for the agricultural survey frame. These classes are:

- Consolidated Tea plantation,
- Hillside agricultural land,
- Non-rice agricultural land,
- Paddy rice agricultural wetland,
- Rural settlement.

The remaining land cover classes are excluded from the sampling frame due to low potentiality for agriculture activities. The sampling frame is made of a set of square clusters (segments) of 9 hectares each covering the whole country. By overlapping the clusters layer with land cover classes layer, each cluster is assigned a dominant land cover class as a stratum definition. This is based on a defined thresholds as follow:

**Table 2: List of strata**

Stratum	Stratum name	Definition
1.	Dominant hill crop land stratum	Clusters with Hillside agricultural land cover class greater or equal to 60 percent of the total area of the cluster
2.	Dominant Wetland crops stratum	Clusters with non-rice wetland land cover class greater than 25 percent of total area of the cluster
3.	Dominant rangeland	Clusters with rangeland land cover class greater or equal to 60 percent of the total area of the cluster
4.	Mixed stratum	The rest of other possible combinations
9.	Excluded stratum	All clusters with excluded land cover classes greater or equal to 50 percent of the total area of the cluster

Source: NISR, SAS 2023

In addition, tea plantation class data which are recorded by the National Agricultural Export Development Board and large-scale farms which are completely enumerated during the Seasonal Agricultural Survey, were not considered in the agricultural strata taken in sample frame. This means that only dominant hill crop land stratum, dominant wetland crops stratum, dominant rangeland stratum and mixed stratum were considered as area frame from which a sample segment was selected.

**Table 3: Number of segments (Population size) per district by stratum**

Districts	Dominant hill crop land	Dominant wetland crops	Dominant rangeland	Mixed stratum	Excluded stratum	Total
Nyarugenge	515	238	-	114	605	1,472
Gasabo	2,111	296	-	405	1,959	4,771
Kicukiro	517	148	-	90	1,099	1,854
Nyanza	5,847	522	-	418	678	7,465
Gisagara	5,485	684	-	520	858	7,547
Nyaruguru	3,783	388	-	1,290	5,757	11,218
Huye	3,869	369	-	837	1,375	6,450
Nyamagabe	5,577	226	-	1,194	5,134	12,131
Ruhango	5,631	338	-	475	508	6,952
Muhanga	5,003	340	-	662	1,177	7,182
Kamonyi	5,605	406	-	679	636	7,326
Karongi	6,039	114	-	675	1,924	8,752
Rutsiro	4,673	-	353	691	1,639	7,356
Rubavu	2,668	-	-	574	525	3,767
Nyabihu	3,766	-	272	607	1,324	5,969
Ngororero	5,630	112	359	545	872	7,518
Rusizi	3,866	159	-	839	5,322	10,186
Nyamasheke	4,849	137	-	923	4,640	10,549
Rulindo	4,209	312	-	622	1,167	6,310
Gakenke	5,919	255	-	669	986	7,829
Musanze	3,241	120	-	634	1,859	5,854
Burera	4,437	259	-	510	1,965	7,171
Gicumbi	5,919	214	-	868	2,202	9,203
Rwamagana	5,130	173	-	1,098	1,162	7,563
Nyagatare	6,688	532	9,057	1,160	3,869	21,306
Gatsibo	7,358	434	1,048	1,074	7,675	17,589
Kayonza	7,376	280	3,857	1,262	8,694	21,469
Kirehe	7,874	-	548	1,337	3,445	13,204
Ngoma	6,379	-	-	1,035	2,244	9,658
Bugesera	8,155	452	-	1,626	4,135	14,368
<b>National</b>	<b>148,119</b>	<b>7,508</b>	<b>15,494</b>	<b>23,433</b>	<b>75,435</b>	<b>269,989</b>

Source: NISR, SAS 2023



## 2.2. Sampling procedures

Out of five defined agricultural strata, only dominant hill crop land stratum, dominant wetland crops stratum, dominant rangeland stratum and mixed stratum are considered as land potential for agriculture. The remaining stratum is the non-agricultural land. Note that clusters covered by tea plantations are not considered in the area sample frame due to reasons stated above. Thus, SAS is conducted on 4 above mentioned strata to cover other major crops where a total of 1,200 segments constitutes the SAS sample.

At first stage, 1200 segments are selected and allocated at district level based on the power allocation approach (Bankier, 1988<sup>2</sup>). Sampled segments inside each district are distributed among strata with a proportional-to-area criterion.

**Table 4: Allocation of 1200 sampled segments per district by stratum.**

District	Stratum				Total
	Dominant hill crop land	Dominant wetland crops	Dominant rangeland	Mixed stratum	
Nyarugenge	12	6	-	2	20
Gasabo	22	4	-	3	29
Kicukiro	13	5	-	2	20
Nyanza	37	4	-	2	43
Gisagara	33	5	-	3	41
Nyaruguru	25	3	-	7	35
Huye	27	3	-	5	35
Nyamagabe	36	2	-	6	44
Ruhango	36	3	-	3	42
Muhanga	33	3	-	4	40
Kamonyi	36	3	-	4	43
Karongi	38	2	-	3	43
Rutsiro	32	-	2	4	38
Rubavu	21	-	-	4	25
Nyabihu	27	-	2	3	32
Ngororero	36	2	2	3	43
Rusizi	27	2	-	5	34
Nyamasheke	31	2	-	5	38
Rulindo	28	3	-	4	35
Gakenke	37	2	-	4	43
Musanze	24	2	-	4	30
Burera	30	2	-	3	35
Gicumbi	37	2	-	5	44
Rwamagana	34	2	-	6	42
Nyagatare	31	5	25	7	68
Gatsibo	38	3	5	5	51
Kayonza	32	2	13	5	52
Kirehe	45	-	3	6	54
Ngoma	39	-	-	6	45
Bugesera	45	3	-	8	56
<b>National</b>	<b>942</b>	<b>75</b>	<b>52</b>	<b>131</b>	<b>1200</b>

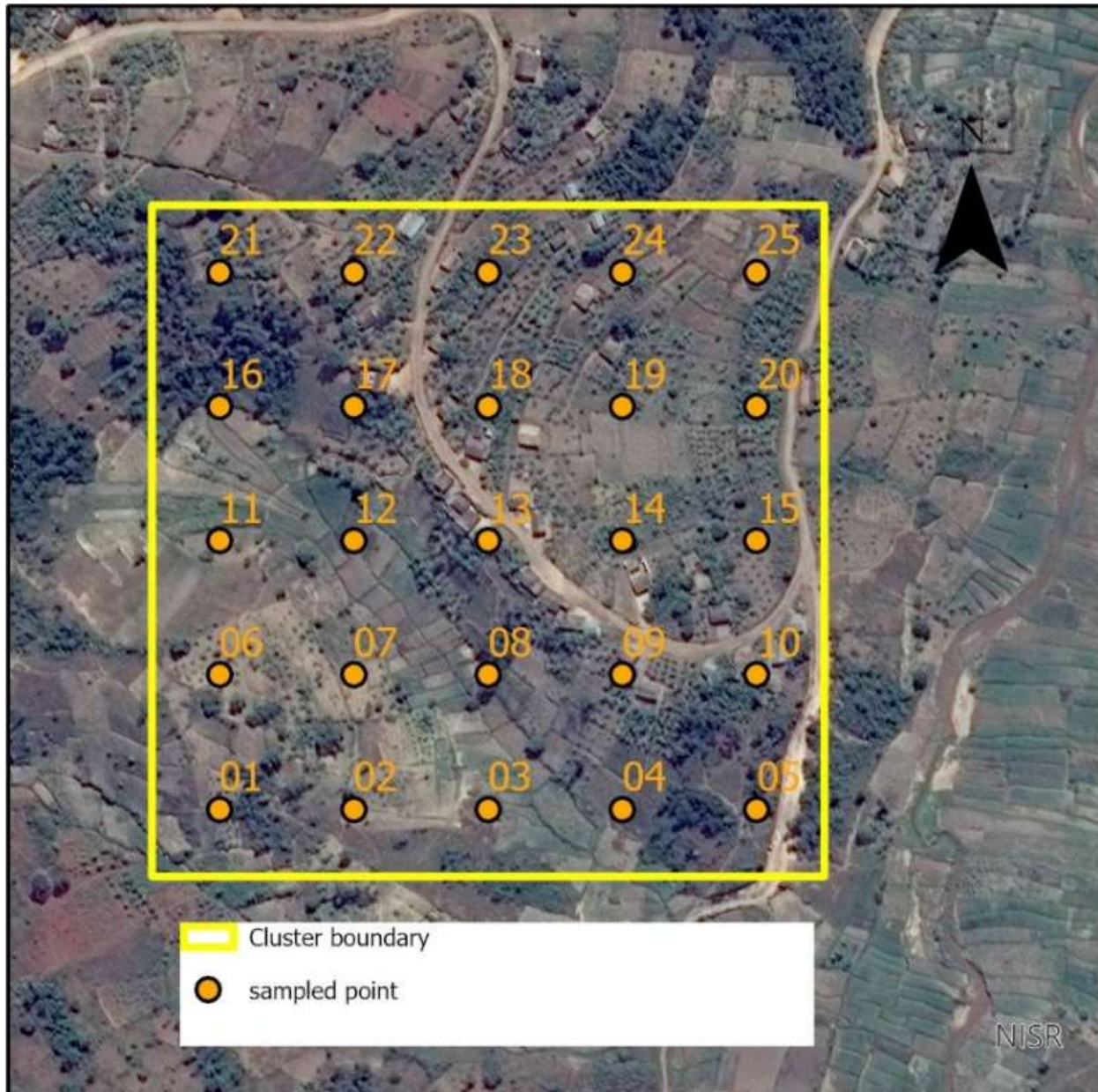
Source: NISR, SAS 2023

<sup>2</sup> Bankier M.D. (1988) Power allocations: determining sample sizes for subnational areas. The American Statistician, Vol. 42, n. 3 pp. 174-177.

At the second stage, 25 sample points are systematically selected, following a special distance of 60 meters between points. Sample points are reporting units within each segment, where enumerators go to every point, locate, and delineate the plots in which the sample point 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.

**Map 2 : Map showing square cluster(segment) with 25 sampled points**



Source: NISR, SAS 2023

### 2.2.1. Weighting procedures

Based on the stratified two-stage sample design used with the new area frame, the first stage sampling probability for the sample segments in each stratum is calculated as:

$$p_{1h} = \frac{n_h}{N_h}$$

where:

$p_{1h}$  = probability of selection of sample segments in stratum h (district by stratum)

$n_h$  = number of sample segments selected in stratum h

$N_h$  = Total number of segments in the area frame for stratum h in each stratum

The second stage probability was calculated at the plot level based on the assumption that the plots within each sample segment were implicitly selected with PPS using the area of the plot as the measure of size. Therefore, the second stage probability of selection can be expressed as follows:

$$p_{2hi} = \frac{g_{hi} \times A_{hij}}{A_{hi} \times g_{hij}}$$

Where:

$p_{2h}$  = Probability of selection of the plot in segment h

$g_{hi}$  = Number of grid squares selected in the i-th sample segment of stratum h

$A_{hij}$  = Area of the j-th sample plot selected in the i-th sample segment of stratum h

$A_{hi}$  = Area of the i-th sample segment of stratum h

$g_{hij}$  = Number of selected grid squares in the j-th sample plot of the i-th sample segment of stratum h

The weight of a sample plot is equal to the inverse of the first and second stage probabilities of selection:

$$W_{P_{hij}} = \frac{1}{p_{1h} \times p_{2hi}} = \frac{N_h \times A_{hi} \times g_{hij}}{n_h \times g_{hi} \times A_{hij}}$$

## 2.3. Data collection design

SAS data collection is carried out into two distinct phases: the first phase, known as screening activity (post-planting phase), consists of visiting all sampled segments and demarcating all plots with sampled points with the aim of covering the information related to land area, planted crops and land use. While the second phase involves capturing of production data by visiting sampled agricultural plots identified from screening activity as well as all Large-Scale Farmers (LSF). During this season, NISR employed 134 Enumerators and 26 Team Leaders. All fieldwork staff hold a degree in agriculture sciences and were trained by NISR headquarter staff before starting data collection. To ensure the smooth completion of the SAS workload, a higher-level supervision was organised and done by staff from NISR who visited the field teams during each phase of data collection to ensure the quality of collected data.

### 2.3.1. Time frame

The data collection activities started on 4<sup>th</sup> December 2022 and ended on 16<sup>th</sup> February 2023 covering 1,200 segments and 345 large scale farmers' holdings across the country, while the analysis and reporting were completed by April.

### 2.3.2. Data collection tools and materials

The seasonal agricultural survey uses two main questionnaires:

- **Screening Questionnaire:** Screening questionnaire is a questionnaire used to collect information mainly related to land use, plot area and crop cultivated of the delineated plot.
- **Plot Questionnaire:** Plot questionnaire is a questionnaire used to collect information on the sampled plots mainly related to crop production, inputs used and agricultural practices.

The computer assisted personal interview (CAPI) data collection methodology was used based on three different software applications:

- **Collector:** which is GIS based application, is used to identify and navigate the enumerator team to the exact GPS sample-point location and for mapping the plot boundary for GIS area determination,
- **Survey 123:** which is an electronic instrument, used to collect screening data for Large-scale farmers.
- **CS Entry application,** which is a CSPro data entry application used on Android tablets, was used to collect data for interview of plot questionnaire.

Before proceeding to the field, enumerators and their team leaders ensure that they have required materials for their fieldwork. Each enumerator and team leader had adequate materials composed of enumerator's instruction manual, android tablet, charger, Power banks, pens, notebooks, pencils, calculator, weighing scales, Global Positioning System (GPS), boots, as well as transport facilitation.

### 2.3.3. Field data collection procedures

The SAS data collection is carried out into two phases:

- **Screening activity of the Segment:** Arriving at the segment, field workers use GPS to direct them to the sampled point inside the segment. Arriving at the point, enumerators identify plot boundary with the guide of the farmer and delineate the plot using the collector application with GPS connected to the tablet. For large scale farmers, the team ensures a complete enumeration of plots with at least 10 hectares.
- **Farm Interview:** After screening activity, only sampled agricultural plots are provided to enumerators for collecting information using the plot questionnaire.

### 2.4. Data processing and analysis

CAPI data collection method used allows the enumerators to collect data with the tablets and synchronize to the central server at headquarter where data are received, checked for consistency and transmitted to analysts for further analysis using STATA and Excel.

### 2.5. Concepts, definitions, and estimation methods

**1. Total land area:** Total land area at district level is the district area excluding area under inland water bodies. The definition of inland water bodies generally includes major rivers and lakes.

**2. Agricultural area:** The agricultural area includes arable land, land under permanent<sup>3</sup> crops and permanent pasture.

**3. Arable land:** As defined by FAO, arable land includes land under temporary crops (double-cropped areas are counted only once), temporary meadows for mowing or pasture, land under market and kitchen gardens and land temporarily fallow (less than five years). The abandoned land resulting from shifting cultivation is not included in this category. Data for arable land are not meant to indicate the amount of land that is potentially cultivable.

**4. Permanent crop land:** Permanent crops are sown or planted once and occupy the land for some years and do not need to be replanted after each annual harvest, such as cocoa, coffee and rubber. This category includes flowering shrubs, fruit trees, nut trees and vines, but excludes trees grown for wood or timber. The following crops are considered as permanent crops in SAS: Cooking banana, Dessert banana, Banana for beer, Avocado, Coffee, Sugar cane, Macadamia, Olive, Mango, Apple, Papaya, Orange, Lemon, Guava, Mulberry, Stevia, Jatropha, Palm, and Tea.

**5. Permanent pastureland:** Land used permanently (five years or more) for herbaceous forage crops, either cultivated or growing wild (wild prairie or grazing land).

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<sup>3</sup> For some plots, permanent crops are mixed with temporary crops which mean that same area is counted in both arable land area and area under permanent crop.

**6. Irrigated agricultural land:** Area equipped for irrigation, which is actually irrigated. Part of the area equipped for irrigation refers to area equipped to provide water to crops and includes areas equipped for full/partial control irrigation, equipped lowland areas, and areas equipped for spate irrigation. Part of the area equipped for irrigation which is actually irrigated refers to physical areas.

**7. Physical area:** Physical area refers to the total area of the plot as physically measured. The physical agricultural area in a district is estimated by aggregating all weighted individual agricultural plots area for that district.

**8. Crop area (cultivated area):** Crop area refers to the area occupied by a given crop in a plot considering its density or occupation. In context of Rwanda as well as many African countries, mixed cropping system is a general practice in agriculture. This practice makes it complex to estimate area under crop cultivation. In case of pure stands (for crop completely covering a plot), crop area is equal or less to physical plot area (if a crop is partially covering the plot, the share is estimated then applied to the plot area). In case of mixed crops, the share of each crop in the plot is estimated by enumerator by eye estimation method and applied to the physical area of the plot to obtain area for each specific crop planted in plot. In this context, the crop share is eye estimation of crop density or occupation in a plot (in %) basing on spacing between plants. Cultivated area at district level is equal to the total weighted crop areas within plots in the whole district.

### Examples

- In case of pure stands, crop area will be equal to the physical area if the crop entirely covers the whole plot. Otherwise, the crop area will be less than physical area. For example, a plot of 1 hectare in which maize was grown and completely occupies the whole plot (100% occupied), it means that cultivated area for maize is 1 hectare. On the other side let us assume that the maize crop occupies 80% of the total plot area. In that case the area of maize equals 0.8 hectares (1hectare times 0.8).
- In case of mixed cropping system, specifically seasonal crops the crop area is less than physical area. For example, a plot of 1 hectare grown with maize and beans which occupies 60% and 40% of total plot area respectively. The maize area will be 0.6 hectare (1hectare times 0.6), and beans area will be 0.4(1hectare times 0.4).
- When seasonal and perennial crops are mixed together in same plot, due to the fact that perennial crops are permanent crops in nature, their shares are treated separately from seasonal crops. The seasonal crops share is obtained by the aforementioned rule, while for perennial crops shares are given based on density (spacing between trees) and it may exceed 100 percent. For example, a plot of 1 hectare grown with maize, bean and cassava with 60 %, 40% and 50% shares respectively. Maize area will be 0.6 hectare (1hectare times 0.6), beans area will be 0.4 (1hectare times 0.4), while cassava area will be 0.5 hectare (1hectare times 0.5).

**9. Developed area:** Developed area is the land covered by crops. Due to mixed cropping (over exploitation of agriculture land or under exploitation in case pure cropping), developed area can be less or greater than the physical area. Basing on the example provided above of the plot in which maize, beans and cassava have been mixed, maize has 0.6, beans have 0.4 while cassava has 0.5 ha. The developed area equals the sum of the crops area equivalent to 1.5 ha.

**10. Harvested area:** Area harvested is defined as the total number of hectares for all crops that is harvested in each agriculture season. In case of crops considered as seasonal, the harvested area is assumed to be equal to the cultivated area. For perennial crops a farmer can decide to harvest a portion of land and stores the remaining production in the farm or harvest the whole plot for commercial or other purposes. In this case, the proportion of harvested area is estimated and applied to the plot area to obtain actual harvested area.

For example, cassava which occupies 0.5 hectare has 5,000 trees of cassava, if the farmer only harvested 1,250 trees. In this case, the farmer harvested only a quarter (0.125hectares) of the cultivated area.

**11. Crop yield:** Crop yield is defined as total reported quantity of harvested crop over the harvested area of that crop.

**12. Crop production:** Crop production is the product of crop yield and crop area (harvested). At district level, crop production is estimated by taking crop yield of crop produce times total harvested area in the district.

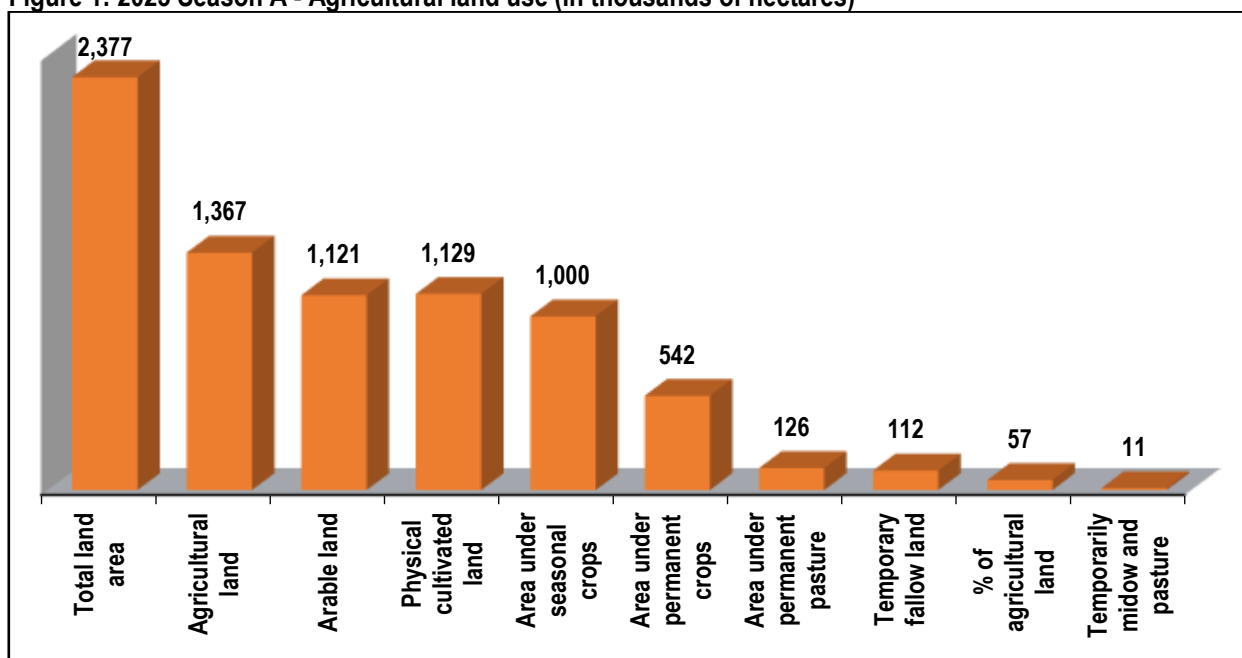
### III. SURVEY FINDINGS

This section highlights key results related to crop area (physical land use, cultivated area, and harvested area), yield, production, agricultural inputs, and agricultural practices in Rwanda in the Season A of 2023.

#### 3.1. Agricultural land use

The total country land area is estimated at 2.377 million of hectares for which 1.367 million hectares (57.5% of total country land) is used for agriculture. In 2023 Season A, 1 million hectares were used for Seasonal crops, 0.5 million hectares were covered by permanent crops, while 0.126 million hectares were used for permanent pasture. (See district details in Table 6).

Figure 1: 2023 Season A - Agricultural land use (in thousands of hectares)



Source: NISR, SAS 2023

#### 3.2. Crop area, production, and yield estimates for major crops

##### Maize:

- The cultivated area for Maize was estimated at 226,982 hectares, an increase of 3.3 percent when compared to the season A of 2022.
- The production of maize was estimated at 390,879 metric tons, an increase of 12 percent when compared to season A of 2022.
- The national average yield of maize 1.7 tons per hectare, with an average yield of 1.7 tons and 4.3 tons for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12)

##### Sweet potato:

- The cultivated area for sweet potato was estimated at 106,670 hectares, an increase of 9.1 percent when compared to season A of 2022 season A.
- The production of sweet potato was estimated at 667,598 metric tons, a decrease of 3.8 percent when compared to season A of 2022.
- The national average yield of sweet potato was 7.4 tons per hectare (See district details in Tables 5, 8-12).



**Irish potato:**

- The cultivated area for Irish potato was estimated at 55,613 hectares, a decrease of 1.5 percent when compared to season A of 2022.
- The production of sweet potato was estimated at 454,355 metric tons, a decrease of 6.5 percent when compared to season A of 2022.
- The average yield of Irish potato was 8.2 tons per hectare, with an average yield of 8.2 and 12.2 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).

**Cassava:**

- The cultivated area for cassava was estimated at 239,221 hectares, an increase of 28.5 percent when compared to season A of 2022. In the same season, the harvested area was estimated at 45,182 hectares.
- The production of cassava was at 608,693 metric tons, a decrease of 4.6 percent when compared to season A of 2022.
- The national average yield of cassava was 13.5 tons per hectare (See district details in Tables 5, 8-12).

**Paddy rice:**

- The cultivated area for paddy rice was estimated at 16,135 hectares, an increase of 1.9 percent when compared to season A of 2022.
- The production of paddy rice was estimated at 63,688 metric tons, a decrease of 4.9 percent when compared to season A of 2022.
- The national average yield of paddy rice was 4 tons per hectare, with an average yield of 2.3 and 4 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).

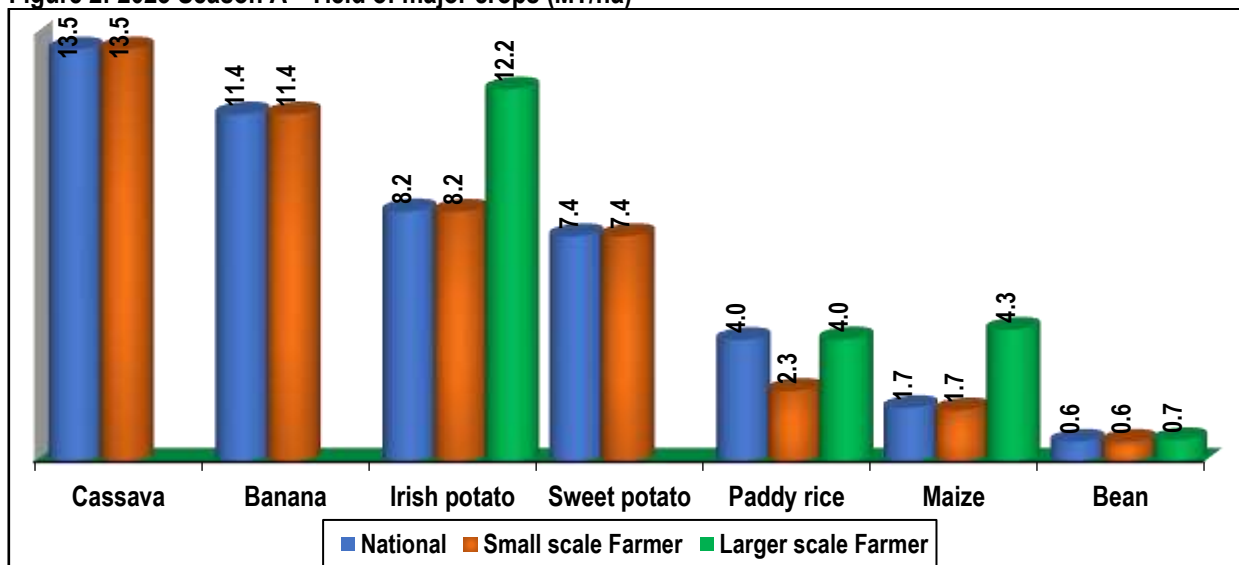
**Banana:**

- The cultivated area for Banana was estimated at 255,290 hectares, a decrease of 1.6 percent when compared to season A of 2022. In the same season, the harvested area was estimated at 107,411 hectares.
- The production of banana was estimated at 1,219,408 metric tons, an increase of 2.3 percent when compared to 2022 season A.
- The average yield of banana was 11.4 tons per hectare (See district details in Tables 5, 8-12).

**Beans:**

- The cultivated area bean was estimated at 312,279 hectares, decrease of 13.8 percent when compared to season A of 2022.
- Bean's production was estimated at 197,212 metric tons, a decrease of 16.4 percent when compared to season A of 2022.
- The national average yield of beans was 632 kilograms per hectare, with an average yield of 632 and 685 kilograms for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).

Figure 2: 2023 Season A - Yield of major crops (MT/ha)



Source: NISR, SAS 2023

Table 5: 2023 Season A Cultivated area, harvested area, production and yield by crop.

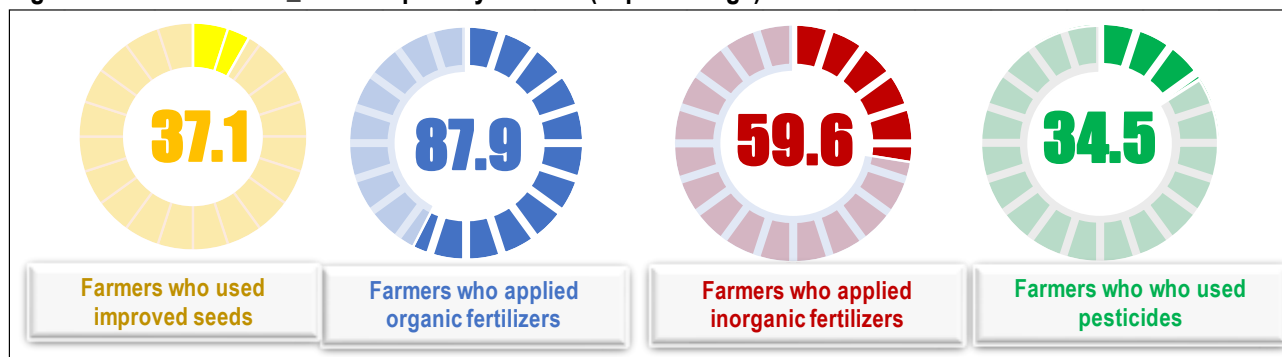
Crop/crop groups	Cultivated area (Ha)		Harvested area (Ha)		Production (MT)		Yield (MT/ha)	
	2023 A	2022 A	2023 A	2022 A	2023 A	2022 A	2023 A	2022 A
<b>Cereals</b>	<b>288,933</b>	<b>287,233</b>	<b>286,013</b>	<b>279,020</b>	<b>506,618</b>	<b>467,217</b>	(NA)	(NA)
Maize	226,982	219,683	224,976	218,689	390,879	348,907	1.7	1.6
Sorghum	38,979	37,469	38,935	37,469	46,296	45,016	1.2	1.2
Paddy rice	16,135	15,840	16,070	15,779	63,688	67,002	4.0	4.2
Wheat	2,975	3,495	2,891	3,495	3,527	4,019	1.2	1.1
Other cereals	3,862	10,746	3,856	10,738	2,706	5,592	0.7	0.5
<b>Tubers and Roots</b>	<b>422,570</b>	<b>380,840</b>	<b>204,793</b>	<b>212,859</b>	<b>1,815,906</b>	<b>1,903,496</b>	(NA)	(NA)
Cassava	239,221	186,204	45,182	45,418	608,693	637,856	13.5	14.0
Sweet potato	106,670	97,771	90,657	97,767	667,598	694,320	7.4	7.1
Irish potato	55,613	56,442	55,583	56,442	454,355	486,075	8.2	8.6
Taro & Yams	21,066	40,424	13,371	13,231	85,259	85,245	6.4	6.4
<b>Banana</b>	<b>255,290</b>	<b>259,505</b>	<b>107,411</b>	<b>108,476</b>	<b>1,219,408</b>	<b>1,192,331</b>	<b>11.4</b>	<b>11.0</b>
Cooking banana	96,262	96,434	39,234	39,729	555,973	545,588	14.2	13.7
Dessert banana	37,009	36,598	15,459	15,927	129,371	126,838	8.4	8.0
Banana for beer	122,019	126,472	52,718	52,820	534,065	519,904	10.1	9.8
<b>Legumes and Pulses</b>	<b>363,724</b>	<b>415,450</b>	<b>363,524</b>	<b>415,424</b>	<b>220,504</b>	<b>263,251</b>	(NA)	(NA)
Beans	312,279	362,439	312,160	362,438	197,212	235,818	0.6	0.7
Bush bean	204,238	239,540	204,118	239,540	107,905	140,047	0.5	0.6
Climbing bean	108,041	122,898	108,041	122,898	89,307	95,771	0.8	0.8
Pea	10,475	10,872	10,472	10,872	6,834	8,247	0.7	0.8
Groundnut	11,191	15,144	11,191	15,118	4,687	5,445	0.4	0.4
Soybean	29,778	26,996	29,701	26,996	11,771	13,741	0.4	0.5
<b>Vegetables &amp; Fruits</b>	<b>26,889</b>	<b>29,634</b>	<b>19,961</b>	<b>21,700</b>	<b>155,255</b>	<b>163,864</b>	(NA)	(NA)
Vegetables	16,758	18,721	16,382	18,298	132,699	142,604	8.1	7.8
Fruits	10,131	10,914	3,579	3,402	22,556	21,261	6.3	6.3
Fodder crops	9,731	8,824	8,557	8,358	98,164	102,784	11.5	12.3
Other crops	61,409	53,313	9,266	8,250	47,473	100,244	5.1	12.2
<b>Total Developed Crop area</b>	<b>1,428,545</b>	<b>1,434,799</b>	<b>1,000,239</b>	<b>1,061,236</b>	<b>4,063,804</b>	<b>4,196,506</b>	(NA)	(NA)

Source: NISR, SAS 2023

### 3.3. Use of inputs

This section highlights the use of agricultural inputs (seeds, fertilizers, and pesticides). they are presented in terms of percentage of farmers who applied agricultural inputs throughout the season.

**Figure 3: 2023 Season A\_ Use of inputs by farmers (in percentage)**



Source: NISR, SAS 2023

#### 3.3.1. Use of seeds

In season A of 2023, 37.1 percent of farmers used improved seeds. In regard to farmer type<sup>4</sup>, 35.9 percent of small-scale farmers (SSF) and 85.7 percent of Large-scale farmers (LSF) used improved seeds (See Figure 3). The major sources of improved seed were agro-dealers, accounting 40.8 percent, and NGO/companies accounting for 38.7 percent (See details in Tables, 17-20).

#### 3.3.2. Use of fertilizers

In season A of 2023, 87.9 percent of farmers applied organic fertilizer with 88.2 percent of small-scale farmers and 74.2 percent of large-scale farmers applied organic fertilizer.

In this season, 59.6 percent of famers applied inorganic fertilizer with 59 percent of small-scale farmers and 87.9 percent of large-scale farmers applied inorganic fertilizer (See figure 3). The main sources of inorganic fertilizers were NGOs/companies and agro dealers account for 44.8 percent and 41.8 percent respectively. DAP, UREA and NPK are inorganic fertilizers mostly used in this season with 45.2 percent, 39.9 percent and 12.7 percent respectively (See details in Tables 7,21-25).

#### 3.3.3. Use of pesticides

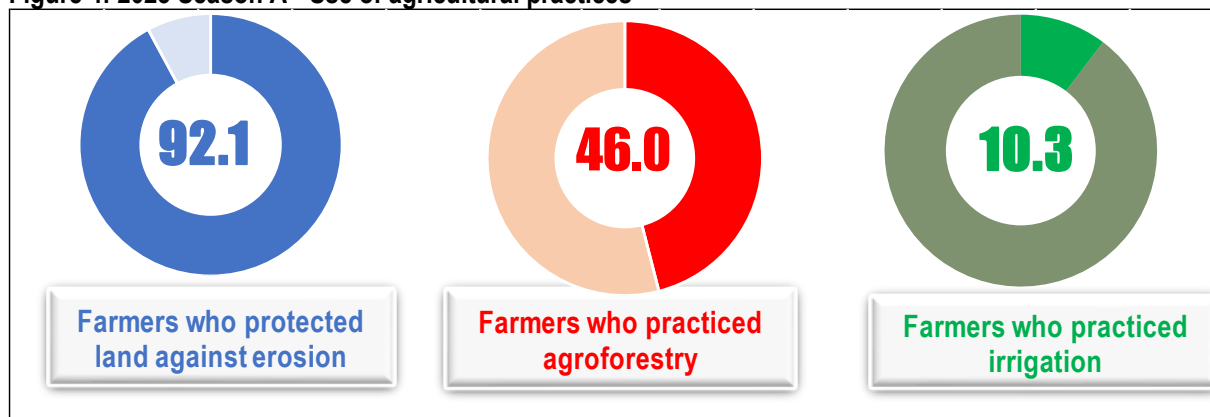
In season A of 2023, 34.5 percent of farmers applied pesticides. According to farmer type, 33.2 percent of small-scale farmers and 86.3 percent of large-scale farmers applied pesticides respectively (See figure 3). Rocket, Dithane and Cypermethrin were the most used pesticides with 38.9 percent of farmers, 22.2 percent and 15.2 percent respectively (See details in Tables 26 & 27).

<sup>4</sup> Farmer type refers to category of farmers as defined in the survey; a farmer is either a small scale or a large scale.

### 3.4. Agricultural practices

This section highlights information related to agricultural practices used by farmers related to irrigation, anti-erosion activities and agroforestry. The results are presented in terms of percentage of farmers involved in such practices throughout the 2023 Season A.

**Figure 4: 2023 Season A - Use of agricultural practices**



Source: NISR, SAS 2023

#### 3.4.1. Irrigation practices

In season A of 2023, 10.3 percent of farmers practiced irrigation. The irrigation was practiced by 9 percent of small-scale farmers and 66.5 percent for large-scale farmers. Out of farmers who practiced irrigation 53.6 percent practiced the modern irrigation. In regard to source of water, Lakes/stream and underground water were the most used sources of water for irrigation with 49.9 percent and 27.8 percent respectively (See details in Tables 7,28-30).

#### 3.4.2. Erosion control measures

In 2023 Season A, 91.2 percent of farmers practiced anti-erosion activities where 92.1 percent of small-scale farmers and 94.1 percent were large-scale farmers protected their land against erosion. Cover plants was the most used type of anti-erosion with 56.7 percent of farmers. The farmland was less eroded where the major erosion type was low degree of erosion (splash erosion and wind erosion) appeared the most with 80.6 percent (See details in Tables 7, 28, 31 and 32). 46 percent of farmers practiced agroforestry, while 1.2 percent of farmers used mechanical equipment in their agricultural activities.

## IV. MAIN TABLES

**Table 6: 2023 Season A\_Agricultural land use per district (,000Ha)**

District	Total land area	Agricultural land	% of agricultural land	Arable land	Physical cultivated land	Area under seasonal crops	Area under permanent crops	Area under permanent pasture	Temporary fallow land	Temporarily midow and pasture
Nyarugenge	13.1	5.8	44.2	4.7	5.2	4.0	3.0	-	0.6	0.1
Gasabo	42.7	19.6	45.9	18.0	16.5	14.6	7.5	0.4	2.7	0.7
Kicukiro	16.6	5.4	32.5	4.5	4.4	3.9	1.9	0.3	0.6	0.1
Nyanza	67.1	43.2	64.4	38.2	37.6	32.3	14.7	0.0	5.5	0.3
Gisagara	67.3	39.4	58.6	36.7	34.7	31.9	14.0	-	4.7	0.1
Nyaruguru	100.7	34.4	34.2	29.6	29.5	23.9	11.5	-	4.9	0.9
Huye	58.1	32.5	55.9	29.7	30.2	27.2	13.5	0.0	2.3	0.2
Nyamagabe	109.1	44.3	40.6	38.3	38.2	32.1	12.0	-	6.0	0.1
Ruhango	62.6	44.6	71.3	38.4	38.6	31.9	14.1	-	6.0	0.5
Muhanga	64.4	39.5	61.3	35.1	35.1	29.9	18.0	0.1	4.3	0.8
Kamonyi	65.8	44.4	67.5	38.8	39.5	33.4	18.5	0.1	4.9	0.5
Karongi	78.9	42.4	53.8	35.0	35.8	28.0	15.7	0.1	6.5	0.4
Rutsiro	66	39.4	59.8	27.6	29.4	23.2	17.0	5.8	4.3	0.2
Rubavu	33.8	24.7	73.1	23.2	23.0	21.3	5.8	0.3	1.4	0.8
Nyabihu	53.6	37.6	70.1	33.3	29.9	29.6	6.1	4.0	3.6	0.3
Ngororero	67.5	45.1	66.9	38.0	37.5	32.4	18.0	2.1	5.5	0.1
Rusizi	91.4	36.3	39.8	34.3	34.2	32.0	11.4	-	2.2	0.1
Nyamasheke	94.8	38.8	40.9	30.0	36.8	28.0	21.3	-	2.0	-
Rulindo	56.7	36.0	63.4	32.0	32.0	28.8	13.0	0.9	3.0	0.2
Gakenke	70.1	50.1	71.5	44.2	46.8	40.8	21.2	0.1	3.3	0.2
Musanze	50.9	29.8	58.6	29.1	28.4	27.7	4.2	-	1.4	0.0
Burera	58.4	38.0	65.1	37.7	35.9	35.4	3.6	-	2.1	0.2
Gicumbi	82.5	48.7	59.0	45.9	44.5	40.4	12.5	-	4.2	1.3
Rwamagana	65.3	45.3	69.4	39.6	42.3	37.6	22.7	1.6	1.4	0.6
Nyagatare	191.1	143.6	75.2	72.6	73.3	69.5	87.2	67.9	2.4	0.7
Gatsibo	153.6	72.5	47.2	57.4	63.4	54.5	37.3	6.2	2.8	0.0
Kayonza	179.2	89.2	49.8	62.3	59.8	57.1	43.7	24.2	5.1	0.1
Kirehe	114.9	71.9	62.6	59.2	61.7	55.0	31.1	6.2	4.1	0.2
Ngoma	80.5	51.5	64.0	46.9	47.1	42.7	19.0	0.5	3.8	0.4
Bugesera	120.4	72.4	60.2	61.0	57.5	50.6	23.2	5.1	9.8	0.6
<b>National</b>	<b>2,377</b>	<b>1,367</b>	<b>57</b>	<b>1,121</b>	<b>1,129</b>	<b>1,000</b>	<b>542</b>	<b>126</b>	<b>112</b>	<b>11</b>

Source: NISR, SAS 2023

**Table 7: 2023 Season A Area under agricultural practices**

District	Modern irrigated agricultural land (Ha)	Agricultural area under erosion control	Agricultural area under agroforestry trees	Agricultural area under fertilizer application	
				Inorganic fertilizer	Organic fertilizer
Nyarugenge	32	2,757	2,182	484	2,820
Gasabo	241	13,737	10,696	3,755	10,931
Kicukiro	152	2,012	2,911	1,677	2,445
Nyanza	777	29,094	14,149	5,448	19,289
Gisagara	1,598	25,675	14,956	11,576	21,999
Nyaruguru	470	29,505	11,323	13,771	20,706
Huye	1,079	25,704	14,129	8,198	19,045
Nyamagabe	19	37,397	14,158	11,295	25,941
Ruhango	1,100	33,613	12,978	4,522	20,014
Muhanga	436	30,899	13,172	7,606	21,807
Kamonyi	451	33,568	13,202	4,546	23,325
Karongi	185	31,175	18,472	10,781	21,087
Rutsiro	-	28,189	14,623	9,294	17,769
Rubavu	-	20,169	7,977	9,215	9,726
Nyabihu	-	32,499	21,563	15,347	18,389
Ngororero	59	36,398	17,403	12,770	28,698
Rusizi	946	22,759	21,740	17,849	19,910
Nyamasheke	375	33,436	20,138	16,837	23,286
Rulindo	351	31,777	17,748	11,437	25,626
Gakenke	152	47,616	23,591	23,338	36,946
Musanze	-	25,044	12,175	11,042	17,517
Burera	56	32,733	13,699	17,801	27,702
Gicumbi	-	42,975	11,326	11,047	35,768
Rwamagana	834	35,059	28,032	15,848	28,058
Nyagatare	3,252	72,292	50,711	34,548	31,372
Gatsibo	1,970	59,789	42,345	21,450	45,692
Kayonza	3,199	45,465	39,233	18,951	27,588
Kirehe	2,468	43,697	35,070	28,897	37,747
Ngoma	904	31,603	24,671	18,915	27,732
Bugesera	3,193	41,564	38,617	17,696	23,386
<b>National</b>	<b>24,301</b>	<b>978,198</b>	<b>582,989</b>	<b>395,944</b>	<b>692,320</b>

Source: NISR, SAS 2023

**Table 8: 2023 Season A\_Cultivated area by crop type and district (Ha)**

District	Maize	Sorghum	Paddy rice	Wheat	Other cereals	Cassava	Sweet potato	Irish potato	Yams & Taro	Bananas	Cooking banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Pea	Groundnut	Soybean	Vegetables	Fruits	Fodder Crops	Other crops	Total developed land
Nyarugenge	687	18	-	-	-	668	293	73	33	1,985	683	370	931	2,381	2,367	14	-	10	115	234	48	59	447	7,050
Gasabo	2,927	-	254	-	-	5,274	1,459	554	83	4,911	2,133	1,055	1,723	7,197	6,771	426	51	391	693	602	59	589	381	25,424
Kicukiro	1,125	-	46	-	7	631	538	11	264	1,174	592	172	410	1,190	1,188	2	3	21	210	69	118	52	210	5,668
Nyanza	5,234	506	553	-	17	16,271	2,329	258	807	8,415	2,635	1,450	4,330	10,907	9,486	1,421	99	389	1,366	623	326	233	1,288	49,621
Gisagara	6,464	853	2,254	-	47	8,501	2,811	274	621	9,467	2,471	1,811	5,184	12,566	11,922	644	59	399	2,175	282	815	110	522	48,219
Nyaruguru	4,984	-	-	-	-	8,328	4,723	1,883	589	5,498	1,624	1,272	2,603	7,152	1,525	5,628	249	-	858	259	129	813	4,835	40,300
Huye	4,374	-	981	-	93	15,715	3,058	990	725	7,384	2,362	1,647	3,375	11,340	8,452	2,888	61	50	1,963	352	53	200	1,545	48,885
Nyamagabe	5,044	-	23	41	13	7,447	7,065	3,807	1,108	7,009	1,731	607	4,671	8,846	2,824	6,021	1,376	31	1,112	265	176	125	3,278	46,765
Ruhango	3,687	96	878	-	59	19,415	1,830	189	863	8,818	2,246	1,812	4,760	8,341	6,904	1,437	75	380	2,263	380	45	456	1,803	49,578
Muhanga	2,421	-	137	-	198	8,281	5,403	332	2,498	16,936	3,045	1,889	12,002	7,165	3,421	3,744	23	23	1,414	487	147	745	850	47,060
Kamonyi	4,976	-	197	-	-	11,120	3,234	733	572	10,663	1,636	1,531	7,496	10,865	9,308	1,558	11	368	2,545	937	889	455	2,203	49,768
Rutongi	7,031	-	-	52	-	9,343	5,279	1,191	1,934	10,552	2,529	1,252	6,771	5,783	1,515	4,268	170	-	1,001	620	166	432	3,921	47,475
Rutsiro	6,550	-	-	250	-	1,397	4,043	3,217	1,213	7,146	1,964	1,126	4,055	2,919	557	2,362	422	-	1,085	202	678	217	4,059	33,398
Rubavu	2,042	218	-	-	-	735	569	5,792	144	3,412	1,171	320	1,921	7,723	902	6,822	601	-	486	1,959	106	816	1,231	25,833
Nyabihu	3,310	605	-	456	-	646	3,584	9,448	24	1,019	230	234	556	7,559	271	7,288	1,126	-	-	710	365	278	3,071	32,200
Ngororero	3,643	716	-	432	-	5,545	6,489	2,332	1,802	11,474	2,671	1,627	7,177	10,707	1,139	9,568	213	-	912	309	162	79	1,709	46,526
Rusizi	7,185	77	1,434	-	-	17,057	2,624	214	2,120	6,007	2,234	522	3,251	11,043	9,621	1,422	83	383	1,822	795	310	80	2,829	54,062
Nyamasheke	5,165	51	362	-	78	15,345	3,575	117	1,629	7,156	2,149	1,072	3,935	6,539	1,912	4,627	91	395	2,032	247	321	-	8,151	51,253
Rulindo	4,636	-	17	56	-	4,846	5,455	1,171	90	6,170	1,856	1,350	2,964	10,229	4,737	5,492	932	26	421	1,092	256	185	1,843	37,425
Gakenke	11,456	-	51	122	337	6,520	7,243	1,080	2,003	13,621	2,576	1,853	9,192	8,248	1,480	6,768	328	241	511	453	249	158	1,987	54,609
Musanze	6,673	2,373	-	817	-	291	2,808	4,133	204	1,942	844	304	794	6,833	410	6,424	489	-	57	710	467	19	2,142	29,957
Burera	11,038	1,453	-	558	-	247	3,911	5,179	46	2,126	799	116	1,212	10,269	540	9,729	1,969	-	10	463	56	161	113	37,597
Gicumbi	5,214	222	-	153	25	2,587	8,304	3,209	20	5,214	2,032	1,337	1,844	17,584	4,481	13,103	1,203	318	236	334	68	1,121	1,449	47,261
Rwamagana	8,835	54	505	-	495	8,666	2,759	1,172	87	11,391	6,694	1,947	2,750	17,009	16,899	110	138	1,184	470	1,057	623	575	1,743	56,764
Nyagatare	25,700	15,570	1,690	-	864	9,909	2,031	639	85	10,886	6,310	1,205	3,372	18,195	16,768	1,427	424	1,133	1,333	685	242	690	440	90,518
Gatsibo	18,292	5,255	1,626	13	469	5,389	3,022	2,493	211	20,057	11,310	2,865	5,882	19,350	17,355	1,995	-	1,019	1,176	670	242	7	4,052	83,345
Kayonza	14,910	3,814	1,854	-	553	15,065	3,253	2,110	617	12,183	8,160	1,304	2,719	17,246	16,968	278	17	784	628	489	1,172	113	1,109	75,918
Kirehe	21,359	2,464	943	18	62	9,218	1,952	1,364	303	17,881	10,217	1,340	6,325	20,490	19,307	1,183	219	420	1,232	242	1,114	110	1,577	80,969
Ngoma	14,017	348	852	-	513	14,202	2,017	1,359	86	15,016	7,925	1,894	5,197	15,191	13,891	1,300	12	765	990	243	503	342	1,063	67,518
Bugesera	8,003	4,286	1,480	7	32	10,562	5,010	289	288	9,778	3,435	1,727	4,616	11,411	11,319	93	33	2,462	660	991	224	507	1,555	57,579
National	226,982	38,979	16,135	2,975	3,862	239,221	106,670	55,613	21,066	255,290	96,262	37,009	122,019	312,279	204,238	108,041	10,475	11,191	29,778	16,758	10,131	9,731	61,409	1,428,545
SSF	220,035	38,953	241	2,921	3,860	239,164	106,659	55,518	21,065	255,151	96,146	36,993	122,011	312,014	203,989	108,025	10,460	11,186	28,839	16,615	9,716	9,242	60,580	1,402,218
LSF	6,946	26	15,895	54	2	57	10	95	1	139	115	16	8	266	250	16	15	5	940	144	415	489	829	26,327

Source: NISR, SAS 2023



**Table 9: 2023 Season A\_Harvested area by crop type and district (Ha)**

District	Maize	Sorghum	Paddy rice	Wheat	Other cereals	Cassava	Sweet potato	Irish potato	Yams & Taro	Bananas	Cooking banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Pea	Groundnut	Soybean	vegetables	Fruits	Fodder crops	Other crops	Total	Developed land
Nyarugenge	687	18	-	-	-	192	293	73	11	889	254	166	470	2,381	2,367	14	-	10	115	234	8	59	77	5,048	
Gasabo	2,920	-	257	-	-	957	1,142	554	60	1,878	821	352	705	7,193	6,768	426	51	391	693	602	4	551	28	17,282	
Kicukiro	1,125	-	46	-	7	55	417	11	58	471	177	83	210	1,190	1,188	2	3	21	210	69	-	32	29	3,743	
Nyanza	5,232	506	389	-	17	3,904	2,329	258	275	3,457	1,052	647	1,759	10,907	9,486	1,421	99	389	1,366	622	84	233	-	30,066	
Gisagara	6,056	853	2,420	-	47	1,090	2,373	274	305	3,702	902	788	2,012	12,566	11,922	644	59	399	2,175	282	44	110	62	32,816	
Nyaruguru	4,987	-	-	-	-	1,040	4,159	1,879	430	1,992	643	336	1,013	7,152	1,525	5,628	249	-	858	259	39	747	68	23,859	
Huye	4,064	-	985	-	93	2,918	3,058	990	183	2,932	961	623	1,348	11,324	8,436	2,888	61	50	1,963	352	-	149	3	29,126	
Nyamagabe	4,876	-	23	41	13	1,630	6,608	3,818	375	2,617	529	296	1,792	8,811	2,791	6,020	1,376	31	1,112	256	107	-	11	31,704	
Ruhango	3,562	96	869	-	59	4,721	1,620	189	540	2,802	464	449	1,889	8,339	6,902	1,437	75	380	2,253	380	-	156	222	26,263	
Muhanga	1,840	-	119	-	198	1,917	4,483	332	1,844	6,486	1,020	733	4,733	7,160	3,415	3,744	23	23	1,414	467	147	702	157	27,312	
Kamonyi	4,916	-	189	-	-	2,598	2,392	733	288	4,638	717	655	3,266	10,865	9,308	1,558	11	368	2,516	937	783	400	15	31,652	
Karongi	7,031	-	-	52	-	1,853	4,664	1,191	1,020	4,242	783	593	2,865	5,783	1,515	4,268	164	-	1,001	589	46	432	13	28,081	
Rutsiro	6,511	-	-	165	-	204	3,772	3,191	1,213	3,061	711	442	1,908	2,919	557	2,362	422	-	1,085	202	375	114	530	23,764	
Rubavu	2,041	218	-	-	-	-	569	5,792	125	1,538	473	161	903	7,723	902	6,822	601	-	486	1,917	-	816	666	22,492	
Nyabihu	3,201	586	-	456	-	129	3,063	9,448	8	424	91	122	211	7,559	271	7,288	1,126	-	-	710	10	226	2,923	29,869	
Ngororero	3,643	716	-	432	-	1,233	5,194	2,332	1,022	4,451	829	743	2,879	10,707	1,139	9,568	213	-	912	309	104	79	240	31,587	
Rusizi	7,097	77	1,361	-	-	1,617	2,017	214	1,795	2,824	953	215	1,656	11,043	9,621	1,422	83	383	1,822	795	43	35	143	31,349	
Nyamashoke	5,165	51	355	-	78	2,836	3,122	110	1,365	2,750	757	297	1,697	6,539	1,912	4,627	91	395	2,032	247	83	-	250	25,469	
Rulindo	4,632	-	17	56	-	847	4,110	1,169	76	2,299	722	413	1,165	10,229	4,737	5,492	932	26	420	1,092	91	185	120	26,299	
Gakenke	11,456	-	34	122	337	1,244	7,122	1,080	1,348	6,172	1,078	726	4,368	8,248	1,480	6,768	328	241	511	416	173	122	266	39,220	
Musanze	6,666	2,373	-	818	-	33	2,185	4,133	193	802	346	107	348	6,833	410	6,424	489	-	57	710	100	19	1,995	27,404	
Burera	10,882	1,453	-	558	-	41	2,592	5,179	46	815	352	35	429	10,269	540	9,729	1,969	-	10	407	-	161	113	34,493	
Gicumbi	5,214	222	-	153	25	708	7,067	3,206	20	1,835	747	493	595	17,584	4,481	13,103	1,203	318	236	334	60	1,067	-	39,253	
Rwamagana	8,847	54	471	-	489	1,381	2,132	1,172	87	5,475	3,110	970	1,394	16,991	16,882	110	142	1,184	450	940	154	552	607	41,128	
Nyagatare	25,732	15,570	1,733	-	864	1,033	1,827	638	85	5,081	2,671	658	1,752	18,191	16,762	1,429	423	1,133	1,349	684	159	681	12	75,197	
Gatsibo	18,316	5,255	1,656	13	469	1,467	2,422	2,483	81	9,810	5,509	1,338	2,963	19,350	17,355	1,995	-	1,019	1,180	656	103	-	128	64,408	
Kayonza	14,911	3,814	1,850	-	552	4,245	2,329	2,110	202	4,944	3,145	602	1,197	17,213	16,935	278	17	784	628	485	360	108	57	54,608	
Kirehe	21,344	2,439	945	19	62	1,461	1,873	1,375	170	7,750	4,126	651	2,972	20,490	19,307	1,183	219	420	1,210	230	122	110	101	60,342	
Ngoma	14,017	348	858	-	513	2,704	1,923	1,359	86	7,118	3,735	1,005	2,377	15,191	13,891	1,300	12	765	990	209	287	340	60	46,779	
Bugesera	8,003	4,286	1,493	7	32	1,126	3,798	289	58	4,156	1,555	760	1,842	11,409	11,317	93	33	2,462	646	991	94	370	370	39,624	
National	224,976	38,935	16,070	2,891	3,856	45,182	90,657	55,583	13,371	107,411	39,234	15,459	52,718	312,160	204,118	108,041	10,472	11,191	29,701	16,382	3,579	8,557	9,266	1,000,239	
SSF	218,457	38,909	223	2,836	3,854	45,152	90,646	55,475	13,370	107,345	39,178	15,453	52,715	311,922	203,897	108,025	10,454	11,186	28,786	16,280	3,479	8,165	8,893	975,433	
LSF	6,520	26	15,847	55	2	30	11	108	1	65	56	6	3	238	222	16	18	5	914	102	99	392	373	24,806	

Source: NISR, SAS 2023

**Table 10: 2023 Season A Average yield by crop type and district (Kg/Ha)**

District	Maize	Sorghum	Paddy rice	Wheat	Other cereals	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Bananas	Cooking Banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Peas	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops	Other crops
Nyarugenge	1,009	38	-	-	-	9,551	5,887	2,208	7,691	11,198	11,059	10,738	11,434	292	291	490	-	295	306	6,530	6,379	8,110	26,929
Gasabo	1,033	-	4,378	-	-	11,083	7,772	4,263	5,201	10,982	12,120	9,401	10,447	579	563	836	374	428	377	7,673	12,906	9,454	756
Kicukiro	1,360	-	3,782	-	24	9,776	7,504	3,739	5,454	10,450	10,831	10,274	10,199	385	386	-	549	188	260	10,317	-	4,938	1,724
Nyanza	1,422	619	2,619	-	-	15,233	5,785	3,330	3,334	8,446	7,444	7,620	9,348	459	461	446	329	237	259	7,402	3,241	7,731	-
Gisagara	1,765	901	3,381	-	311	15,901	6,147	2,785	7,701	8,476	7,077	7,979	9,298	496	486	696	437	186	401	7,719	7,791	21,232	2,260
Nyaruguru	1,612	-	-	-	-	10,355	10,215	4,878	7,501	10,407	11,520	9,361	10,047	607	500	636	948	-	278	7,396	4,676	9,272	636
Huye	1,375	-	4,006	-	329	17,359	6,345	3,444	7,425	10,044	10,098	8,902	10,533	374	354	433	891	470	297	10,164	-	14,169	20,022
Nyamagabe	1,571	-	1,706	1,159	530	9,575	8,007	5,974	5,210	8,519	7,974	7,715	8,813	531	509	541	711	613	203	12,063	3,471	-	30
Ruhango	1,183	165	4,089	-	42	19,330	7,194	2,925	3,548	8,583	8,421	7,077	8,980	342	307	511	365	239	139	7,585	-	14,661	1,854
Muhanga	1,232	-	2,308	-	988	12,971	6,312	4,177	8,928	9,743	11,244	10,351	9,325	303	180	415	705	367	159	8,030	2,345	22,735	19,933
Kamonyi	1,428	-	3,345	-	-	12,556	4,960	3,029	5,503	10,330	11,938	7,186	10,608	233	244	166	423	506	293	5,514	6,724	11,683	39
Karongi	1,564	-	-	623	-	8,274	8,176	7,648	6,715	12,201	13,329	12,138	11,905	886	677	960	578	-	486	9,031	6,181	8,014	3,603
Rutsiro	1,284	-	-	684	-	11,642	7,813	8,627	7,322	11,684	13,033	7,617	12,122	860	419	964	709	-	424	9,333	8,641	2,259	7,155
Rubavu	2,042	884	-	-	-	-	8,255	11,740	4,760	10,853	11,069	6,534	11,513	976	397	1,052	563	-	789	8,729	-	17,271	21,372
Nyabihu	1,796	807	-	1,335	-	10,231	7,447	11,599	3,144	8,166	10,982	6,795	7,755	1,144	588	1,165	832	-	-	12,513	6,047	8,105	509
Ngororero	1,213	681	-	1,064	-	14,127	6,539	4,798	6,850	7,511	7,746	7,435	7,464	743	564	765	806	-	238	10,558	4,655	5,347	11,292
Rusizi	1,551	855	4,948	-	-	11,313	6,761	4,729	6,418	10,423	9,396	7,961	11,335	693	675	816	921	628	443	9,935	6,457	8,955	730
Nyamasheke	1,307	1,457	3,447	-	654	9,379	4,814	4,721	4,970	8,151	8,679	8,134	7,918	722	581	781	630	604	408	10,912	5,538	-	4,850
Rulindo	1,568	-	3,130	1,074	-	13,124	7,223	4,338	4,824	9,766	10,941	9,247	9,222	602	499	691	373	403	617	8,939	3,154	7,199	11,889
Gakenke	1,494	-	2,236	654	250	12,079	7,135	5,175	6,435	11,154	12,740	9,526	11,034	613	441	651	399	573	368	8,500	14,572	13,456	5,622
Musanze	1,604	1,352	-	1,277	-	5,863	7,971	11,607	2,954	11,142	12,811	8,237	10,378	965	961	965	529	-	536	6,431	6,975	22,747	3,795
Burera	1,681	1,770	-	1,588	-	11,909	9,881	10,741	6,128	10,314	13,237	5,682	8,290	1,263	824	1,287	626	-	244	6,273	-	9,598	17,880
Gicumbi	1,881	711	-	734	562	13,544	9,676	9,016	3,276	11,191	14,136	7,342	10,678	768	641	812	821	457	396	9,335	3,897	8,494	-
Rwamagana	1,178	698	3,364	-	243	16,842	7,243	5,240	3,109	14,241	18,133	8,557	9,517	345	346	155	209	326	338	6,870	4,247	10,947	4,310
Nyagatare	3,054	1,560	4,059	-	965	13,668	4,845	6,472	6,455	14,910	18,721	8,155	11,640	793	739	1,422	819	576	851	4,892	4,900	3,332	714
Gatsibo	1,497	797	5,191	112	660	13,375	8,536	4,371	3,032	12,571	14,835	8,051	10,403	654	641	767	-	479	387	5,915	6,746	-	3,699
Kayonza	1,426	990	3,726	-	744	11,434	6,444	3,052	4,977	12,814	15,244	8,178	8,759	583	579	788	448	522	357	8,134	3,950	2,440	9,620
Kirehe	2,220	1,028	3,873	3,954	765	14,433	5,613	4,565	2,504	14,143	17,398	8,274	10,910	718	727	575	494	734	1,211	9,748	17,446	908	3,692
Ngoma	1,817	942	3,545	-	871	11,952	7,097	4,478	4,375	13,659	16,560	7,235	11,819	686	676	798	388	456	559	8,195	4,245	19,719	19,500
Bugesera	945	661	3,916	999	209	14,637	6,687	2,067	4,806	11,149	14,745	8,175	9,338	286	287	150	271	265	176	6,958	2,540	17,401	713
National	1,737	1,189	3,963	1,220	710	13,472	7,364	8,174	6,377	11,353	14,171	8,369	10,131	632	529	827	653	419	396	8,100	6,303	11,472	5,124
SSF	1,661	1,189	2,296	1,189	710	13,480	7,365	8,167	6,377	11,355	14,180	8,368	10,131	632	528	827	653	419	353	8,109	6,388	11,060	5,200
LSF	4,299	751	3,987	2,827	101	2,310	2,676	12,166	1,266	7,766	7,541	9,233	8,938	685	678	785	436	238	1,768	6,787	3,317	20,058	3,304

Source: NISR, SAS 2023

**Table 11: 2023 Season A Average yield of large-scale farmers by crop type and district (Kg/Ha)**

District/Crop	Maize	Sorghum	Paddy rice	Wheat	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Bananas	Cooking Banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Pea	Ground nuts	Soya beans	Vegetables	Fruits
Nyarugenge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gasabo	3,354	-	4,378	-	-	5,752	-	-	8,966	8,594	41,923	-	902	902	-	-	-	1,039	73,471	7,793
Kicukiro	6,029	-	3,782	-	-	-	-	-	5,385	4,308	6,385	-	-	-	-	-	-	-	-	-
Nyanza	2,207	-	2,618	-	-	-	-	-	6,831	4,855	7,131	7,192	168	168	-	-	-	-	2,083	-
Gisagara	3,475	-	3,405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nyaruguru	4,663	-	-	-	-	-	10,431	-	19,065	7,561	21,296	25,099	950	256	1,297	-	-	-	-	-
Huye	3,314	-	4,046	-	-	2,960	-	-	5,113	5,506	-	-	-	-	-	-	-	1,321	21,343	-
Nyamagabe	2,789	-	-	-	-	-	6,307	-	-	-	-	-	764	-	764	2,502	-	-	-	-
Ruhango	916	-	4,143	-	11,565	-	-	-	-	-	-	-	1,513	1,513	-	-	-	-	-	-
Muhanga	2,225	-	2,308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kamonyi	4,947	-	3,345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	228	588	-
Karongi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rutsiro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubavu	5,502	-	-	-	-	-	9,441	-	8,677	8,644	13,008	-	-	-	-	381	-	-	5,724	-
Nyabihu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ngororero	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rusizi	2,573	-	4,948	-	-	-	-	-	-	-	-	-	1,992	1,992	-	-	-	463	-	-
Nyamasheke	-	-	3,447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rulindo	4,998	-	3,130	2,867	-	-	18,158	-	-	-	-	-	863	-	863	599	-	-	2,230	-
Gakenke	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Musanze	-	-	-	1,945	-	-	16,494	-	-	-	-	-	-	-	-	-	-	-	-	-
Burera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gicumbi	795	-	-	2,838	-	-	10,042	-	-	-	-	-	-	-	-	-	-	-	-	-
Rwamagana	1,618	-	3,364	-	-	1,093	1,481	-	7,394	6,992	12,016	3,974	261	261	-	27	35	120	5,075	1,688
Nyagatare	5,238	2,500	4,066	-	-	26,248	11,550	-	8,684	8,679	9,561	-	646	658	379	719	536	1,338	9,321	3,282
Gatsibo	4,381	-	5,194	-	-	39,621	4,954	-	7,401	7,001	11,603	14,259	846	846	-	-	206	1,241	22,257	-
Kayonza	4,709	373	3,726	-	1,483	2,492	5,196	1,266	7,845	7,868	7,406	5,049	582	582	619	402	169	1,599	1,994	5,029
Kirehe	6,498	-	3,902	3,954	-	-	16,654	-	-	-	-	-	1,059	1,059	-	-	-	2,138	5,504	-
Ngoma	2,477	-	3,565	-	584	-	-	-	5,741	4,768	12,326	13,101	1,264	1,264	-	-	-	977	10,419	2,759
Bugesera	1,405	-	3,923	-	-	-	7,586	-	7,913	3,554	7,887	10,281	391	358	1,310	175	264	-	4,099	1,265
LSF	4,299	751	3,987	2,827	2,310	2,676	12,166	1,266	7,766	7,541	9,233	8,938	685	678	785	436	238	1,768	6,787	3,317

Source: NISR, SAS 2023

**Table 12: 2023 Season A Crop production by crop type and district (MT)**

District	Maize	Sorghum	Paddy rice	Wheat	Other Cereals	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Banana	Cooking banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Peas	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops	Other crops	Total
Nyarugenge	693	1	-	-	-	1,831	1,725	162	88	9,959	2,807	1,779	5,374	695	688	7	-	3	35	1,529	54	482	2,067	<b>19,324</b>
Gasabo	3,015	-	1,125	-	-	10,612	8,873	2,364	314	20,625	9,949	3,306	7,370	4,168	3,812	356	19	168	261	4,616	52	5,209	21	<b>61,442</b>
Kicukiro	1,530	-	173	-	0	533	3,133	40	314	4,920	1,917	858	2,144	458	458	-	2	4	55	712	-	160	51	<b>12,085</b>
Nyanza	7,443	314	1,018	-	-	59,472	13,474	859	916	29,194	7,829	4,926	16,439	5,009	4,375	633	32	92	354	4,607	272	1,800	-	<b>124,856</b>
Gisagara	10,689	769	8,184	-	15	17,330	14,587	762	2,350	31,377	6,383	6,289	18,705	6,237	5,789	449	26	74	873	2,177	341	2,344	140	<b>98,275</b>
Nyaruguru	8,038	-	-	-	-	10,768	42,484	9,167	3,228	20,727	7,410	3,141	10,176	4,343	762	3,580	236	-	239	1,912	181	6,928	43	<b>108,295</b>
Huye	5,590	-	3,947	-	30	50,655	19,406	3,410	1,362	29,448	9,707	5,545	14,196	4,237	2,987	1,250	54	24	582	3,576	-	2,109	58	<b>124,490</b>
Nyamagabe	7,658	-	39	47	7	15,604	52,912	22,811	1,954	22,299	4,220	2,286	15,792	4,681	1,422	3,259	979	19	226	3,083	371	-	0	<b>132,690</b>
Ruhango	4,213	16	3,553	-	3	91,251	11,658	554	1,917	24,048	3,909	3,175	16,964	2,854	2,120	734	27	91	313	2,880	-	2,284	411	<b>146,072</b>
Muhanga	2,268	-	275	-	196	24,871	28,295	1,385	16,465	63,186	11,465	7,587	44,134	2,171	615	1,556	16	8	225	3,751	345	15,967	3,122	<b>162,547</b>
Kamonyi	7,023	-	634	-	-	32,617	11,866	2,220	1,586	47,916	8,563	4,708	34,645	2,530	2,272	258	5	186	738	5,170	5,266	4,674	1	<b>122,430</b>
Karongi	10,998	-	-	33	-	15,331	38,134	9,108	6,848	51,758	10,443	7,202	34,113	5,124	1,025	4,099	95	-	487	5,321	284	3,462	46	<b>147,029</b>
Rutsiro	8,360	-	-	113	-	2,378	29,470	27,529	8,879	35,768	9,272	3,366	23,130	2,510	233	2,277	299	-	461	1,885	3,237	257	3,794	<b>124,940</b>
Rubavu	4,168	193	-	-	-	-	4,694	67,996	597	16,689	5,239	1,055	10,395	7,536	358	7,178	338	-	384	16,729	-	14,092	14,242	<b>147,658</b>
Nyabihu	5,749	473	-	608	-	1,322	22,813	109,579	25	3,463	994	832	1,637	8,647	159	8,487	937	-	-	8,887	63	1,829	1,489	<b>165,883</b>
Ngororero	4,418	488	-	460	-	17,413	33,963	11,186	7,002	33,432	6,420	5,520	21,492	7,960	642	7,318	172	-	217	3,263	483	425	2,709	<b>123,589</b>
Rusizi	11,010	65	6,734	-	-	18,290	13,636	1,011	11,521	29,435	8,954	1,714	18,767	7,656	6,495	1,161	77	241	808	7,896	277	316	104	<b>109,076</b>
Nyamashoke	6,753	74	1,223	-	51	26,600	15,030	520	6,787	22,418	6,569	2,416	13,433	4,723	1,111	3,612	57	238	828	2,692	458	-	1,214	<b>89,667</b>
Rulindo	7,265	-	54	60	-	11,114	29,683	5,070	365	22,454	7,895	3,817	10,742	6,162	2,365	3,797	347	10	259	9,759	287	1,335	1,421	<b>95,645</b>
Gakenke	17,111	-	76	80	84	15,021	50,820	5,590	8,678	68,845	13,732	6,919	48,194	5,056	653	4,403	131	138	188	3,540	2,517	1,639	1,498	<b>181,012</b>
Musanze	10,692	3,208	-	1,044	-	194	17,417	47,970	569	8,933	4,436	885	3,613	6,594	394	6,200	258	-	31	4,563	697	439	7,570	<b>110,179</b>
Burera	18,290	2,571	-	885	-	485	25,612	55,628	280	8,409	4,657	197	3,554	12,970	445	12,525	1,233	-	2	2,553	-	1,542	2,012	<b>132,472</b>
Gicumbi	9,809	158	-	112	14	9,584	68,375	28,907	66	20,534	10,563	3,617	6,354	13,511	2,873	10,638	988	145	93	3,115	235	9,067	-	<b>164,716</b>
Rwamagana	10,425	38	1,584	-	341	23,263	15,444	6,142	269	77,966	56,396	8,303	13,268	5,858	5,841	17	30	386	152	6,460	653	6,038	2,617	<b>157,666</b>
Nyagatare	78,586	24,295	7,034	-	832	14,115	8,852	4,131	549	75,762	49,997	5,368	20,396	14,417	12,384	2,032	347	653	1,148	3,347	781	2,269	9	<b>237,126</b>
Gatsibo	27,413	4,189	8,594	1	310	19,619	20,678	10,850	246	123,320	81,723	10,769	30,828	12,657	11,128	1,529	-	488	457	3,881	698	-	475	<b>233,879</b>
Kayonza	21,260	3,777	6,892	-	421	48,531	15,007	6,440	1,004	63,350	47,947	4,921	10,482	10,031	9,812	219	7	409	224	3,947	1,422	263	549	<b>183,534</b>
Kirehe	47,376	2,508	3,659	77	47	21,090	10,514	6,277	427	109,605	71,789	5,386	32,429	14,721	14,041	680	108	308	1,465	2,239	2,129	100	374	<b>223,024</b>
Ngoma	25,472	328	3,044	-	348	32,318	13,645	6,088	376	97,229	61,858	7,273	28,097	10,429	9,391	1,038	5	349	553	1,710	1,217	6,697	1,175	<b>200,981</b>
Bugesera	7,561	2,832	5,846	7	7	16,480	25,398	597	278	46,338	22,930	6,209	17,199	3,265	3,251	14	9	652	114	6,898	238	6,441	264	<b>123,224</b>
<b>National</b>	<b>390,879</b>	<b>46,296</b>	<b>63,688</b>	<b>3,527</b>	<b>2,706</b>	<b>608,693</b>	<b>667,598</b>	<b>454,355</b>	<b>85,259</b>	<b>1,219,408</b>	<b>555,973</b>	<b>129,371</b>	<b>534,065</b>	<b>197,212</b>	<b>107,905</b>	<b>89,307</b>	<b>6,834</b>	<b>4,687</b>	<b>11,771</b>	<b>132,699</b>	<b>22,556</b>	<b>98,164</b>	<b>47,473</b>	<b>4,063,804</b>

Source: NISR, SAS 2023

**Table 13: 2023 Season A the Use of production by farmers (in percentage)**

Crops	Wages				Barter			Fodder		Post	
	Sold	Own consumption	for hired labour	Farm rent	Offered as gift	trade/Exchanged with other things	Seeds	purpose	Stored	harvesting losses	Other usage
Maize	32.2	55.0	1.2	1.9	5.6	0.0	1.0	0.5	1.8	0.2	0.5
Sorghum	59.5	26.6	2.1	3.2	4.0	0.0	3.0	0.0	0.6	0.6	0.5
Paddy rice	82.2	15.1	0.4	0.0	0.4	0.0	0.5	0.0	0.0	1.3	0.2
Wheat	36.4	43.9	0.0	0.0	6.7	0.0	12.9	0.0	0.1	0.1	0.0
Other cereals	36.0	42.3	0.5	3.0	5.8	0.0	8.4	0.0	0.9	1.4	1.7
Sweet potato	24.8	67.3	1.0	0.4	4.6	0.0	0.0	1.8	0.0	0.1	0.1
Irish potato	38.3	44.9	0.7	0.4	3.9	0.0	11.1	0.0	0.2	0.2	0.2
Yam & Taro	20.6	66.8	1.0	0.8	5.4	0.0	5.5	0.0	0.0	0.0	0.0
Cassava	40.9	54.8	0.7	0.7	2.4	0.0	0.0	0.1	0.0	0.1	0.2
Bush bean	11.2	68.2	1.1	1.6	2.8	0.0	13.3	0.0	1.1	0.2	0.4
Climbing bean	9.8	66.7	0.7	0.6	5.4	0.1	15.2	0.1	1.1	0.1	0.2
Pea	37.3	50.0	0.4	0.2	3.0	0.0	8.6	0.0	0.2	0.1	0.2
Groundnut	14.6	65.8	0.7	0.7	1.6	0.0	16.3	0.0	0.2	0.0	0.1
Soybean	18.7	51.0	0.4	1.1	3.4	0.0	23.9	0.2	0.8	0.2	0.3
Cooking banana	35.0	61.1	0.5	0.1	2.8	0.0	0.0	0.0	0.0	0.0	0.4
Dessert banana	64.9	31.4	0.1	0.1	2.4	0.0	0.0	0.0	0.0	0.4	0.7
Banana for beer	78.9	15.8	0.0	0.1	4.1	0.0	0.0	0.0	0.0	0.9	0.3
Vegetables	79.0	16.6	0.1	0.0	2.7	0.0	0.9	0.0	0.0	0.5	0.1
Fruits	78.0	15.3	0.0	0.0	5.8	0.0	0.0	0.0	0.0	0.5	0.4
Fodder crops	10.4	0.0	0.0	0.0	0.6	0.0	0.0	88.7	0.1	0.0	0.3
Other crops	86.5	9.0	0.0	0.0	1.5	0.0	0.1	0.0	0.0	0.1	2.7

Source : NISR, SAS 2023

**Table 14: 2023 Season A Cultivated area by cropping system and district (Percentage)**

District	Cropping system	
	Pure Cropping	Mixed Cropping
Nyarugenge	26.02	73.98
Gasabo	22.87	77.13
Kicukiro	24.48	75.52
Nyanza	36.39	63.61
Gisagara	31.86	68.14
Nyaruguru	43.17	56.83
Huye	21.48	78.52
Nyamagabe	44.57	55.43
Ruhango	42.60	57.40
Muhanga	30.00	70.00
Kamonyi	28.93	71.07
Karongi	41.76	58.24
Rutsiro	50.56	49.44
Rubavu	54.87	45.13
Nyabihu	49.17	50.83
Ngororero	36.45	63.55
Rusizi	22.18	77.82
Nyamasheke	32.75	67.25
Rulindo	33.49	66.51
Gakenke	31.82	68.18
Musanze	41.32	58.68
Burera	34.91	65.09
Gicumbi	37.93	62.07
Rwamagana	21.39	78.61
Nyagatare	32.26	67.74
Gatsibo	27.67	72.33
Kayonza	23.03	76.97
Kirehe	24.99	75.01
Ngoma	26.92	73.08
Bugesera	27.76	72.24
National	32.85	67.15
SSF	31.21	68.79
LSF	96.34	3.66

Source: NISR, SAS 2023

**Table 15: 2023 Season A Sowing dates by district (Percentage)**

District	Before 01/09	Between 01-15 /09	Between 16- 30/09	Between 01-15/10	Between 16- 31/10	After 31/10	Other season	Total
Nyarugenge	1.87	7.18	15.80	36.18	4.84	2.56	31.57	100
Gasabo	6.90	45.33	13.88	5.11	0.97	1.17	26.64	100
Kicukiro	1.63	11.36	24.21	33.22	2.69	7.76	19.15	100
Nyanza	5.41	5.98	23.77	19.55	8.28	11.15	25.86	100
Gisagara	2.71	17.10	15.41	29.28	5.00	9.67	20.83	100
Nyaruguru	10.28	13.3	18.41	18.49	10.96	12.39	16.17	100
Huye	7.34	18.74	17.64	20.67	3.32	9.93	22.36	100
Nyamagabe	12.51	28.22	19.58	12.34	4.04	8.17	15.15	100
Ruhango	4.71	20.67	21.31	16.87	6.05	6.59	23.79	100
Muhanga	13.93	20.48	12.05	6.10	3.49	13.31	30.63	100
Kamonyi	4.63	19.10	14.41	21.24	2.41	7.81	30.41	100
Karongi	15.16	29.78	11.53	12.56	2.72	5.47	22.78	100
Rutsiro	21.01	24.15	13.04	5.76	2.72	7.84	25.48	100
Rubavu	29.47	34.19	6.28	4.55	3.19	5.03	17.30	100
Nyabihu	27.06	34.85	13.85	5.80	3.41	7.78	7.24	100
Ngororero	19.75	29.24	7.35	4.83	3.54	10.55	24.75	100
Rusizi	4.73	15.06	37.76	21.22	3.68	2.12	15.43	100
Nyamasheke	4.65	39.65	14.75	4.92	1.73	5.91	28.38	100
Rulindo	12.92	36.84	13.96	6.74	1.71	4.95	22.88	100
Gakenke	15.81	24.32	13.34	7.61	5.76	4.80	28.35	100
Musanze	30.22	35.30	8.38	7.64	1.16	4.32	12.99	100
Burera	18.90	38.58	17.76	5.54	3.37	6.24	9.61	100
Gicumbi	9.30	37.65	19.22	6.23	2.14	6.27	19.19	100
Rwamagana	1.94	21.56	26.29	12.41	1.60	2.77	33.44	100
Nyagatare	13.04	48.57	15.62	4.64	0.89	1.88	15.35	100
Gatsibo	3.85	33.30	22.15	4.67	0.75	1.79	33.49	100
Kayonza	1.05	19.91	16.31	24.60	6.81	5.96	25.36	100
Kirehe	1.33	3.78	16.63	33.98	10.94	4.13	29.22	100
Ngoma	1.11	16.52	30.81	17.18	3.43	3.03	27.91	100
Bugesera	3.08	16.19	19.45	20.84	4.20	10.19	26.04	100
<b>National</b>	<b>10.24</b>	<b>25.38</b>	<b>17.5</b>	<b>13.27</b>	<b>3.85</b>	<b>6.6</b>	<b>23.16</b>	<b>100</b>

Source: NISR, SAS 2023

**Table 16: 2023 Season A Sowing date by crops (Percentage)**

<b>Crops</b>	<b>Before 01/09</b>	<b>Between 01-15 /09</b>	<b>Between 16- 30/09</b>	<b>Between 01-15/10</b>	<b>Between 16- 31/10</b>	<b>After 31/10</b>	<b>Other season</b>	<b>Total</b>
Maize	9.5	37.0	26.9	18.1	4.3	4.3	0.0	100
Sorghum	34.4	38.4	18.9	7.3	0.7	0.4	0.0	100
Paddy rice	67.8	4.5	2.7	5.7	0.5	18.9	0.0	100
Wheat	5.0	13.6	3.2	25.2	19.1	33.9	0.0	100
Other cereals	2.3	40.6	22.8	24.2	4.8	5.3	0.0	100
Sweet potato	35.8	13.3	7.5	11.0	6.0	26.4	0.0	100
Irish potato	15.4	31.8	19.5	16.8	5.6	10.9	0.0	100
Taro & Yams	23.9	25.6	15.7	13.5	7.3	14.0	0.0	100
Cassava	6.8	27.3	16.3	11.2	2.9	7.0	28.5	100
Bush bean	2.4	28.9	31.8	28.7	5.9	2.4	0.0	100
Climbing bean	6.5	50.7	27.6	12.3	2.5	0.4	0.0	100
Pea	14.8	38.0	22.6	12.2	5.5	7.0	0.0	100
Groundnut	1.8	39.4	34.1	20.0	3.3	1.4	0.0	100
Soybean	2.6	33.9	27.5	22.3	7.9	5.9	0.0	100
Cooking banana	0.3	2.6	0.4	0.7	0.5	0.7	94.9	100
Dessert banana	0.3	1.0	0.1	0.4	0.0	0.3	98.0	100
Banana for beer	0.1	1.6	0.3	0.6	0.3	0.6	96.5	100
Vegetables	24.0	13.4	8.8	17.8	10.2	25.8	0.0	100
Fruits	3.1	8.2	5.6	3.9	0.6	1.9	76.6	100
Fodder crops	2.8	3.1	0.0	0.8	0.0	1.9	91.4	100
Other crops	63.0	7.9	2.2	5.4	3.7	9.0	8.8	100

Source: NISR, SAS 2023



**Table 17: 2023 Season A Use of seeds by farmer type per district (Percentage)**

District	Percentage of farmers who used improved seeds			Percentage of sampled plots in which improved seeds was used			Percentage of land size in which improved seeds were used		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	SSF
Nyarugenge	36.17	36.17	-	31.62	31.62	-	31.56	31.56	-
Gasabo	40.58	39.60	70.00	38.35	36.61	52.17	38.61	37.52	80.89
Kicukiro	57.44	57.29	66.67	53.07	53.36	40.00	56.96	57.32	37.55
Nyanza	33.41	32.06	100.00	29.86	28.78	64.71	30.07	28.03	98.75
Gisagara	44.97	42.96	85.71	39.24	37.60	72.00	46.54	38.58	94.10
Nyaruguru	32.83	30.75	100.00	28.23	26.16	91.67	27.87	26.86	99.77
Huye	44.99	42.45	88.00	39.09	36.94	67.57	40.42	37.83	92.93
Nyamagabe	19.43	19.05	100.00	15.79	14.65	87.50	14.87	14.76	97.02
Ruhango	29.54	28.79	66.67	25.83	25.09	58.33	28.28	26.96	68.93
Muhanga	19.07	17.79	100.00	16.24	14.66	100.00	15.81	14.19	100.00
Kamonyi	27.69	25.92	100.00	24.67	23.06	92.86	24.76	23.31	97.83
Karongi	34.28	34.12	100.00	26.68	26.53	100.00	26.79	26.75	100.00
Rutsiro	14.25	14.25	-	11.32	11.32		12.39	12.39	-
Rubavu	17.02	16.67	50.00	15.55	14.52	54.55	13.60	13.56	38.28
Nyabihu	22.68	22.68	-	19.62	19.62		18.99	18.99	-
Ngororero	17.16	17.16	-	13.90	13.90		13.85	13.85	-
Rusizi	41.09	40.67	60.00	33.77	33.01	60.00	36.11	33.25	86.30
Nyamasheke	29.67	28.98	71.43	24.69	23.78	85.71	24.72	23.79	95.26
Rulindo	34.74	34.68	40.00	32.67	32.35	39.13	32.36	32.23	71.98
Gakenke	34.78	34.78	-	30.04	30.04		30.19	30.19	-
Musanze	30.58	30.16	100.00	28.44	27.82	83.33	28.13	28.00	92.45
Burera	40.92	40.92	-	34.26	34.26		35.36	35.36	-
Gicumbi	25.98	25.72	100.00	23.39	23.08	75.00	22.30	22.25	91.60
Rwamagana	55.13	53.31	87.10	49.80	48.31	58.41	49.61	48.79	85.73
Nyagatare	53.45	50.18	100.00	49.33	45.33	73.15	49.90	47.49	98.73
Gatsibo	47.64	45.79	96.00	40.02	37.58	69.84	41.92	39.33	96.95
Kayonza	55.01	52.83	89.29	48.92	45.41	64.57	49.68	47.74	91.85
Kirehe	50.91	50.46	87.50	45.92	45.39	76.92	47.97	45.89	96.14
Ngoma	54.09	53.30	82.35	48.50	46.98	67.24	48.75	48.01	79.34
Bugesera	44.72	43.18	70.59	41.68	39.12	60.00	42.60	40.98	86.20
<b>National</b>	<b>37.13</b>	<b>35.98</b>	<b>85.71</b>	<b>33.10</b>	<b>31.42</b>	<b>65.54</b>	<b>34.48</b>	<b>32.93</b>	<b>92.02</b>

Source : NISR, SAS 2023

**Table 18: 2023 Season A Seed type by crops (Percentage)**

Crop	Traditional seeds	Improved seeds	Total
Maize	40.31	59.69	100
Sorghum	100.00	-	100
Paddy rice	94.23	5.77	100
Wheat	97.40	2.60	100
Other cereals	99.03	0.97	100
Sweet potato	99.68	0.32	100
Irish potato	97.05	2.95	100
Taro & Yams	100.00	-	100
Cassava	99.79	0.21	100
Bush bean	99.69	0.31	100
Climbing bean	99.81	0.19	100
Pea	100.00	-	100
Groundnut	100.00	-	100
Soybean	99.20	0.80	100
Cooking banana	99.95	0.05	100
Dessert banana	98.45	1.55	100
Banana for beer	99.55	0.45	100
Vegetables	59.78	40.22	100
Fruits	95.83	4.17	100
Fodder crops	99.51	0.49	100
Other crops	84.78	15.22	100
National	87.31	12.69	100

Source: NISR, SAS 2023

**Table 19: 2023 Season A Percentage of farmers by source of improved seeds per district**

District	Sources of improved seeds							Total
	Government (MINAGRI/RAB/NAEB)	Recognized seed multipliers	Agro-dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	
Nyarugenge	4.17	-	50.00	12.50	29.17	4.17	-	100
Gasabo	2.04	8.16	85.71	-	-	2.04	2.04	100
Kicukiro	15.38	1.92	69.23	1.92	9.62	-	1.92	100
Nyanza	-	7.58	45.45	36.36	7.58	1.52	1.52	100
Gisagara	1.15	2.30	37.93	49.43	2.30	6.90	-	100
Nyaruguru	-	3.28	32.79	62.30	-	1.64	-	100
Huye	2.38	8.33	46.43	27.38	7.14	8.33	-	100
Nyamagabe	3.13	25.00	15.63	43.75	12.50	-	-	100
Ruhango	3.13	6.25	67.19	6.25	12.50	4.69	-	100
Muhanga	5.13	7.69	25.64	33.33	15.38	12.82	-	100
Kamonyi	13.73	1.96	35.29	35.29	3.92	9.80	-	100
Karongi	4.35	2.90	26.09	63.77	-	1.45	1.45	100
Rutsiro	8.00	4.00	44.00	40.00	4.00	-	-	100
Rubavu	6.98	2.33	81.40	6.98	-	-	2.33	100
Nyabihu	-	10.42	47.92	16.67	14.58	10.42	-	100
Ngororero	2.86	8.57	51.43	34.29	2.86	-	-	100
Rusizi	12.07	1.72	18.97	65.52	1.72	-	-	100
Nyamasheke	1.96	5.88	21.57	60.78	1.96	7.84	-	100
Rulindo	3.23	1.61	69.35	14.52	8.06	3.23	-	100
Gakenke	-	1.57	29.92	64.57	2.36	1.57	-	100
Musanze	4.12	6.19	52.58	19.59	14.43	3.09	-	100
Burera	-	-	64.00	33.00	-	3.00	-	100
Gicumbi	3.17	3.17	42.86	49.21	1.59	-	-	100
Rwamagana	2.88	2.88	28.78	35.97	11.51	17.27	0.72	100
Nyagatare	4.62	8.67	61.27	16.76	1.16	5.78	1.73	100
Gatsibo	4.43	12.66	30.38	44.30	4.43	3.16	0.63	100
Kayonza	10.42	10.42	35.42	33.33	3.13	7.29	-	100
Kirehe	3.01	1.20	16.87	68.67	0.60	9.64	-	100
Ngoma	1.85	3.09	19.75	65.43	4.94	4.94	-	100
Bugesera	5.98	7.69	44.44	23.08	6.84	11.11	0.85	100
National	3.92	5.38	40.78	38.74	5.17	5.55	0.46	100

Source: NISR, SAS 2023

**Table 20: 2023 Season A Percentage of crops by source of seeds**

Crop	Government (MINAGRI/RAB/	Recognized			Market	Agriculture cooperative	Other source	Total
		seed multipliers	Agro dealers	NGOs/				
Maize	2.51	1.71	41.81	46.32	4.09	3.26	0.30	100
Sorghum	-	-	-	-	-	-	100.00	100
Paddy rice	5.61	41.12	2.80	0.93	-	49.53	-	100
Wheat	50.00	-	12.50	25.00	-	12.50	-	100
Other cereals	-	-	-	33.33	66.67	-	-	100
Sweet potato	62.50	25.00	-	12.50	-	-	-	100
Irish potato	17.95	48.72	1.28	10.26	11.54	8.97	1.28	100
Cassava	47.37	36.84	5.26	5.26	-	5.26	-	100
Bush bean	50.00	11.54	11.54	23.08	-	3.85	-	100
Climbing bean	80.00	-	-	20.00	-	-	-	100
Pea	100.00	-	-	-	-	-	-	100
Soybean	38.71	22.58	19.35	6.45	3.23	6.45	3.23	100
Cooking banana	25.00	50.00	-	25.00	-	-	-	100
Dessert banana	8.11	70.27	-	-	18.92	2.70	-	100
Banana for beer	12.50	68.75	-	-	18.75	-	-	100
Vegetables	0.90	0.60	57.49	3.89	32.04	2.69	2.40	100
Fruits	41.82	36.36	3.64	3.64	12.73	1.82	-	100
Fodder crops	35.90	-	56.41	-	7.69	-	-	100
Other crops	27.40	26.03	4.11	5.48	9.59	20.55	6.85	100

Source: NISR, SAS 2023

**Table 21: 2023 Season A Use of organic fertilizer by farmer type per district (Percentage)**

District	Percentage of farmers who applied organic fertilizer			Percentage of plots in which organic fertilizer was applied			Percentage of land size in which organic fertilizer was applied		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	75.0	75.0		76.0	76.0		81.0	81.0	
Gasabo	78.6	78.2	90.0	85.6	85.6	77.8	85.4	85.3	86.5
Kicukiro	67.2	67.2	66.7	78.1	78.1	66.7	79.6	79.1	99.6
Nyanza	85.9	85.9	88.9	70.8	70.8	100.0	67.4	66.5	100.0
Gisagara	89.1	90.1	66.7	77.4	77.4	100.0	79.2	76.8	100.0
Nyaruguru	90.4	90.1	100.0	90.7	90.7	100.0	91.9	91.8	100.0
Huye	93.6	94.6	76.0	75.9	75.9	90.3	74.0	73.4	91.2
Nyamagabe	96.0	96.0	100.0	83.6	83.6	87.5	81.5	81.5	97.0
Ruhango	88.4	88.6	77.8	72.2	72.2	80.0	71.8	71.0	97.7
Muhanga	97.0	96.9	100.0	67.8	67.8	100.0	70.9	70.3	100.0
Kamonyi	91.8	91.6	100.0	70.3	70.3	92.9	70.4	69.8	97.8
Karongi	95.7	95.7	100.0	70.4	70.4	100.0	71.9	71.9	100.0
Rutsiro	93.3	93.3		72.7	72.7		74.8	74.8	
Rubavu	79.1	79.1	75.0	49.7	49.7	66.7	54.0	54.0	54.5
Nyabihu	92.7	92.7		69.7	69.7		67.9	67.9	
Ngororero	98.8	98.8		78.3	78.3		82.2	82.2	
Rusizi	85.1	86.1	40.0	82.6	82.6	77.8	79.3	79.1	98.9
Nyamasheke	96.7	96.7	100.0	78.8	78.8	100.0	81.8	81.5	100.0
Rulindo	97.2	97.4	80.0	89.0	89.0	100.0	91.6	91.6	100.0
Gakenke	99.2	99.2		84.0	84.0		83.1	83.1	
Musanze	88.9	88.9	100.0	74.8	74.8	50.0	70.0	70.0	48.3
Burera	94.7	94.7		85.2	85.2		81.9	81.9	
Gicumbi	93.2	93.2	100.0	91.3	91.3	50.0	90.6	90.7	19.3
Rwamagana	88.2	88.4	83.9	73.9	73.9	61.7	76.2	76.4	65.1
Nyagatare	66.8	67.7	53.9	66.1	66.1	69.1	64.7	64.0	94.7
Gatsibo	92.9	92.8	96.0	79.5	79.5	88.3	80.5	79.9	94.5
Kayonza	75.1	75.6	67.9	56.4	56.4	60.2	64.9	65.2	43.9
Kirehe	83.1	83.6	37.5	78.7	78.7	85.7	75.7	75.3	96.7
Ngoma	87.6	88.1	70.6	58.8	58.8	76.9	68.8	68.3	95.4
Bugesera	63.9	64.2	58.8	59.7	59.7	83.1	63.7	62.1	98.6
National	87.9	88.2	74.2	76.2	76.2	76.2	75.5	75.2	93.3

Source : NISR, SAS 2023

**Table 22: 2023 Season A Use of inorganic fertilizer by farmer type per district (Percentage)**

District	Percentage of farmers who used inorganic fertilizers			Percentage of plots in which inorganic fertilizer was applied			Percentage of land under which inorganic fertilizer was applied		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	17.0	17.0		12.2	12.2		10.5	10.5	
Gasabo	33.8	32.9	60.0	16.3	16.3	19.6	23.6	22.3	75.3
Kicukiro	53.9	53.1	100.0	26.3	26.3	60.0	39.5	38.4	98.2
Nyanza	40.0	38.8	100.0	12.2	12.2	64.7	16.3	13.9	98.7
Gisagara	60.2	58.4	100.0	26.5	26.5	100.0	36.4	25.7	100.0
Nyaruguru	71.7	70.8	100.0	50.5	50.5	91.7	55.0	54.4	99.8
Huye	58.9	56.5	100.0	26.2	26.2	75.7	29.4	26.0	99.0
Nyamagabe	58.3	58.1	100.0	28.6	28.6	87.5	34.1	34.0	97.0
Ruhango	25.8	24.6	88.9	10.5	10.5	66.7	14.3	11.9	90.1
Muhanga	54.2	53.5	100.0	22.2	22.2	100.0	23.8	22.4	100.0
Kamonyi	34.8	33.2	100.0	9.1	9.1	92.9	12.7	11.0	97.8
Karongi	71.4	71.6	0.0	30.4	30.4	0.0	35.2	35.2	0.0
Rutsiro	60.9	60.9		29.4	29.4		36.4	36.4	
Rubavu	63.1	63.2	50.0	31.4	31.4	27.3	41.0	41.1	28.8
Nyabihu	76.6	76.6		42.9	42.9		52.0	52.0	
Ngororero	61.5	61.5		32.6	32.6		36.3	36.3	
Rusizi	74.1	73.7	90.0	48.8	48.8	73.3	55.8	53.9	88.2
Nyamasheke	82.7	82.4	100.0	52.6	52.6	100.0	56.8	56.3	100.0
Rulindo	68.1	67.9	80.0	32.3	32.3	52.2	40.0	39.9	90.1
Gakenke	83.0	83.0		48.6	48.6		52.1	52.1	
Musanze	68.2	68.0	100.0	36.5	36.5	83.3	39.3	39.2	92.4
Burera	77.8	77.8		43.5	43.5		49.6	49.6	
Gicumbi	42.4	42.3	100.0	23.4	23.4	75.0	25.8	25.8	91.6
Rwamagana	56.4	55.0	80.7	30.4	30.4	38.1	38.1	37.2	79.6
Nyagatare	64.3	62.0	97.4	37.0	37.0	62.0	47.4	45.1	93.3
Gatsibo	58.9	57.3	100.0	22.8	22.8	74.6	35.0	31.9	99.3
Kayonza	52.8	50.5	89.3	22.3	22.2	49.6	32.4	29.7	91.7
Kirehe	65.2	64.9	87.5	41.3	41.3	92.3	48.4	46.2	98.4
Ngoma	68.4	68.2	76.5	31.4	31.4	46.6	41.0	39.9	89.8
Bugesera	50.2	49.7	58.8	26.3	26.3	52.6	31.8	29.8	84.6
National	59.6	59.0	87.9	30.9	30.9	57.2	37.5	36.0	94.1

Source: NISR, SAS 2023

**Table 23: 2023 Season A Percentage of farmers by source of inorganic fertilizers per district**

District	Government (MINAGRI/ RAB/NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	-	50.0	28.1	18.8	3.1	-	100
Gasabo	1.0	95.2	1.0	1.0	-	1.9	100
Kicukiro	15.2	78.1	3.8	1.0	1.0	1.0	100
Nyanza	5.5	36.3	54.4	1.1	2.8	-	100
Gisagara	-	26.9	58.4	4.6	9.4	0.7	100
Nyaruguru	2.1	29.4	65.6	0.8	1.3	0.8	100
Huye	3.4	42.3	40.4	2.6	5.7	5.7	100
Nyamagabe	0.8	49.2	42.7	2.9	3.7	0.8	100
Ruhango	7.6	65.3	12.7	1.7	8.5	4.2	100
Muhanga	2.0	10.4	64.0	8.8	13.2	1.6	100
Kamonyi	7.9	18.6	55.4	6.8	9.6	1.7	100
Karongi	4.6	33.8	60.9	0.3	0.3	-	100
Rutsiro	6.9	60.6	32.1	0.5	-	-	100
Rubavu	1.2	82.6	4.2	12.0	-	-	100
Nyabihu	-	87.3	11.5	1.3	-	-	100
Ngororero	0.6	53.5	41.0	2.9	-	1.9	100
Rusizi	0.6	19.0	71.7	7.0	1.8	-	100
Nyamasheke	5.1	17.2	75.7	1.1	0.9	-	100
Rulindo	1.0	65.9	29.7	2.4	0.3	0.7	100
Gakenke	2.8	27.5	59.3	3.8	0.4	6.2	100
Musanze	0.6	52.8	20.9	19.8	0.3	5.6	100
Burera	3.9	58.0	23.3	0.3	1.7	12.8	100
Gicumbi	3.6	46.8	43.6	3.2	0.8	2.0	100
Rwamagana	3.1	36.7	37.0	7.4	14.2	1.5	100
Nyagatare	2.9	66.2	22.9	2.3	4.4	1.3	100
Gatsibo	7.8	26.5	54.3	8.0	3.3	0.3	100
Kayonza	4.4	31.1	52.8	2.4	4.4	4.8	100
Kirehe	6.5	16.5	66.1	0.9	6.5	3.5	100
Ngoma	3.5	23.0	64.8	3.8	4.0	0.9	100
Bugesera	3.3	47.0	40.5	4.0	4.6	0.7	100
National	3.4	41.8	44.8	4.2	3.5	2.3	100

Source: NISR, SAS 2023

**Table 24: 2023 Season A Source of inorganic fertilizer by type of fertilizer**

Fertilizer name	Government (MINAGRI/ RAB/ NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
NPK 17-17-17	2.1	65.9	22.7	5.1	3.8	0.4	100
NPK 20-10-10	68.6	2.9	8.6	5.7	11.4	2.9	100
NPK 25-5-5	71.4	-	14.3	4.8	-	9.5	100
NPK 22-6-12	54.6	4.6	22.7	4.6	13.6	-	100
Other NPK	-	80.0	12.5	2.5	5.0	-	100
Urea	2.9	39.8	48.0	4.0	3.0	2.4	100
liquid urea (Mbonea M)	-	87.2	10.3	2.6	-	-	100
DAP	2.7	36.9	52.4	3.2	2.8	2.1	100
TSP	-	-	100.0	-	-	-	100
KCL/MOP	-	80.0	-	-	20.0	-	100
Omax	-	75.0	20.8	-	4.2	-	100
Winner	-	80.0	20.0	-	-	-	100
Yara Viva	-	71.4	14.3	7.1	7.1	-	100
Amidas	6.9	58.6	17.2	-	17.2	-	100
Cereal	2.6	66.7	23.1	-	7.7	-	100
Boaster	-	100.0	-	-	-	-	100
DI Grow	6.3	87.5	-	6.3	-	-	100
Lime	6.4	51.1	38.3	2.1	2.1	-	100
Other type of fertilizer	4.1	69.9	20.6	2.7	2.7	-	100

Source: NISR, SAS 2023



**Table 25: 2023 Season A Percentage of plots by type of inorganic fertilizer per district**

District	NPK	Urea	DAP	KCL/MOP	Lime	Others	Total
Nyarugenge	9.1	45.5	42.4	-	-	3.0	100
Gasabo	15.3	54.2	29.0	-	-	1.5	100
Kicukiro	7.0	40.4	52.6	-	-	-	100
Nyanza	7.6	43.3	47.1	-	-	1.9	100
Gisagara	12.6	41.5	43.3	-	-	2.5	100
Nyaruguru	8.5	36.7	50.3	-	3.7	0.9	100
Huye	14.0	43.0	40.0	-	-	3.0	100
Nyamagabe	16.6	38.8	42.4	-	-	2.2	100
Ruhango	17.7	48.0	30.4	1.0	-	2.9	100
Muhanga	7.4	37.7	54.1	-	-	0.9	100
Kamonyi	14.7	45.6	39.0	-	-	0.7	100
Karongi	7.9	41.6	50.2	-	0.3	-	100
Rutsiro	36.0	24.8	35.1	-	2.3	1.9	100
Rubavu	49.8	25.4	23.5	-	-	1.4	100
Nyabihu	42.0	28.4	23.5	-	-	6.2	100
Ngororero	15.3	29.6	51.8	-	2.0	1.3	100
Rusizi	10.2	41.9	46.6	-	0.2	1.1	100
Nyamasheke	10.4	36.1	49.8	-	2.9	0.9	100
Rulindo	18.8	40.9	39.1	-	-	1.2	100
Gakenke	5.6	43.3	51.0	-	-	0.2	100
Musanze	19.9	39.4	38.7	-	-	2.0	100
Burera	13.3	38.7	44.3	-	-	3.7	100
Gicumbi	17.0	39.6	43.0	-	-	0.4	100
Rwamagana	12.2	38.8	45.8	0.2	-	3.0	100
Nyagatare	3.5	49.0	44.6	0.3	-	2.7	100
Gatsibo	9.9	44.9	43.3	-	0.2	1.8	100
Kayonza	10.1	43.8	40.5	0.3	1.4	4.1	100
Kirehe	2.1	39.1	57.9	-	-	1.0	100
Ngoma	4.6	45.1	49.5	-	0.4	0.4	100
Bugesera	12.0	30.6	55.7	-	-	1.6	100
National	12.7	39.9	45.2	0.1	0.5	1.8	100

Source: NISR, SAS 2023

**Table 26: 2023 Season A Use of pesticides by farmer type per district (Percentage)**

District	Percentage of farmers who used pesticides			Percentage of plots in which pesticides were used			Percentage of land size in which pesticides were used		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	17.6	17.6		43.2	43.2		40.2	40.2	
Gasabo	22.4	20.5	80.0	68.9	69.0	39.5	74.2	73.2	82.4
Kicukiro	32.3	31.3	100.0	60.5	60.5	75.0	75.9	74.7	99.6
Nyanza	33.4	32.1	100.0	37.9	37.9	68.8	40.4	34.9	99.4
Gisagara	36.4	33.5	100.0	42.5	42.5	96.0	60.6	39.8	99.0
Nyaruguru	38.6	36.7	100.0	51.1	51.1	83.3	57.6	56.9	76.0
Huye	47.1	44.2	96.0	22.9	22.9	100.0	34.6	27.6	100.0
Nyamagabe	28.2	27.9	100.0	42.0	42.0	87.5	52.0	51.8	97.0
Ruhango	27.8	26.3	100.0	43.3	43.3	83.3	52.5	46.9	98.2
Muhanga	37.5	36.6	100.0	37.3	37.3	100.0	40.0	36.8	100.0
Kamonyi	29.1	27.8	83.3	27.4	27.4	100.0	39.6	35.2	100.0
Karongi	35.5	35.3	100.0	34.8	34.8	100.0	33.1	33.0	100.0
Rutsiro	31.0	31.0		34.4	34.4		43.8	43.8	
Rubavu	60.5	60.6	50.0	52.1	52.1	60.0	66.1	66.1	50.3
Nyabihu	74.9	74.9		64.5	64.5		67.9	67.9	
Ngororero	27.0	27.0		44.9	44.9		57.2	57.2	
Rusizi	22.0	20.8	80.0	41.2	41.2	100.0	59.3	48.8	100.0
Nyamasheke	16.1	14.7	100.0	32.5	32.5	100.0	40.8	35.6	100.0
Rulindo	39.2	39.0	60.0	45.7	45.7	88.2	51.6	51.5	74.6
Gakenke	37.8	37.8		35.6	35.6		43.3	43.3	
Musanze	68.4	68.2	100.0	59.3	59.3	83.3	61.7	61.7	92.4
Burera	65.2	65.2		62.1	62.1		62.2	62.2	
Gicumbi	25.8	25.6	100.0	67.7	67.6	100.0	65.8	65.7	100.0
Rwamagana	36.2	33.3	87.1	52.0	52.0	53.3	56.8	55.0	90.3
Nyagatare	19.1	14.0	92.3	62.8	62.8	85.2	80.2	74.6	95.3
Gatsibo	32.0	29.7	92.0	38.0	38.0	77.8	50.1	42.8	99.5
Kayonza	25.3	21.7	82.1	44.4	44.4	58.6	52.9	44.4	93.0
Kirehe	28.3	27.4	100.0	49.9	49.9	84.6	60.5	54.8	97.7
Ngoma	25.7	23.9	88.2	27.8	27.8	60.0	45.1	40.5	94.5
Bugesera	18.3	16.4	50.0	56.0	56.0	85.4	59.8	52.4	99.8
National	34.5	33.2	86.3	46.1	46.1	72.5	54.7	51.4	97.0

Source : NISR, SAS 202

**Table 27: 2023 Season A Percentage of plots by type of pesticides per district**

District	Type of pesticides								Total
	Dithane	Ridomil	Dimethoate	Cypermethrin	Dursiban	Rocket	Beam	Other	
Nyarugenge	25.0	-	14.3	3.6	-	50.0	-	7.1	100
Gasabo	18.0	2.0	9.0	8.0	-	50.0	3.0	10.0	100
Kicukiro	4.9	-	3.3	11.5	-	63.9	1.6	14.8	100
Nyanza	8.0	-	2.3	8.0	-	70.5	4.6	6.8	100
Gisagara	3.6	-	1.8	20.7	-	60.4	9.0	4.5	100
Nyaruguru	25.5	-	-	9.6	-	61.7	-	3.2	100
Huye	10.7	-	0.9	19.6	-	50.9	13.4	4.5	100
Nyamagabe	34.9	4.7	0.9	24.5	-	32.1	-	2.8	100
Ruhango	4.7	1.2	1.2	9.4	-	74.1	8.2	1.2	100
Muhanga	10.4	2.8	0.9	19.8	-	59.4	2.8	3.8	100
Kamonyi	16.2	2.6	6.0	6.0	-	53.9	1.7	13.7	100
Karongi	18.8	1.5	2.9	23.2	1.5	49.3	-	2.9	100
Rutsiro	67.5	1.3	10.0	11.3	-	7.5	-	2.5	100
Rubavu	35.1	19.7	13.5	21.8	-	8.8	-	1.2	100
Nyabihu	32.8	11.2	13.0	19.3	-	13.9	-	9.9	100
Ngororero	41.1	4.7	2.8	20.6	-	27.1	-	3.7	100
Rusizi	12.1	-	7.1	26.3	-	36.4	3.0	15.2	100
Nyamasheke	4.6	4.6	4.6	31.8	-	31.8	6.8	15.9	100
Rulindo	32.9	-	3.7	5.1	-	46.7	-	11.7	100
Gakenke	13.6	10.7	0.7	22.1	-	44.3	-	8.6	100
Musanze	28.8	4.5	3.1	17.8	0.3	37.3	-	8.2	100
Burera	24.2	6.1	8.0	18.5	-	36.6	-	6.7	100
Gicumbi	39.7	2.0	1.3	2.0	-	47.7	-	7.3	100
Rwamagana	16.2	1.5	15.4	8.1	-	37.1	3.5	18.2	100
Nyagatare	11.0	1.0	7.5	15.9	-	36.3	4.5	23.9	100
Gatsibo	10.8	0.6	4.0	7.4	-	56.3	2.3	18.8	100
Kayanza	11.2	-	7.1	11.2	-	42.0	7.7	20.7	100
Kirehe	5.8	0.7	5.8	12.3	-	65.9	1.5	8.0	100
Ngoma	15.3	-	10.2	7.3	-	51.8	4.4	11.0	100
Bugesera	18.5	1.9	9.3	15.4	-	38.9	8.0	8.0	100
National	22.2	4.8	7.0	15.2	0.0	38.9	2.4	9.4	100

Source: NISR, SAS 2023

**Table 28: 2023 Season A Percentage of farmers who practiced agricultural practices.**

District	Farmers who protected land against erosion (%)			Farmers who used any mechanical equipment for agriculture activities (%)			Farmers who practiced irrigation (%)			Farmers who practiced agroforestry (%)		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	87.8	87.8		-	-		7.5	7.5		38.2	38.2	
Gasabo	92.9	92.6	100.0	1.0	0.3	20.0	11.4	10.1	50.0	54.2	53.6	72.7
Kicukiro	62.1	61.5	100.0	1.5	1.0	33.3	9.2	8.9	33.3	57.1	56.6	80.0
Nyanza	93.9	93.7	100.0	0.7	0.7	-	12.3	10.8	88.9	36.6	36.5	44.4
Gisagara	93.3	93.6	85.7	0.2	0.2	-	21.9	19.6	71.4	43.4	45.0	9.1
Nyaruguru	95.8	95.7	100.0	0.3	-	10.0	4.5	4.0	20.0	36.5	36.0	60.0
Huye	96.4	96.2	100.0	0.7	0.7	-	28.9	24.7	100.0	43.6	44.2	32.0
Nyamagabe	96.7	96.7	100.0	1.2	1.2	-	5.2	5.2	-	36.9	36.7	100.0
Ruhango	92.1	92.2	88.9	-	-	-	14.0	12.5	88.9	31.0	31.1	27.3
Muhanga	88.5	88.3	100.0	-	-	-	19.7	18.9	71.4	36.8	36.3	71.4
Kamonyi	94.7	94.6	100.0	0.2	0.2	-	15.9	14.1	91.7	31.9	32.6	-
Karongi	96.7	96.7	100.0	-	-	-	9.9	10.0	-	48.1	48.0	100.0
Rutsiro	94.7	94.7		-	-		0.6	0.6		47.5	47.5	
Rubavu	96.3	96.3	100.0	0.5	0.5	-	0.5	0.3	25.0	34.0	33.7	75.0
Nyabihu	95.6	95.6		-	-		0.2	0.2		58.4	58.4	
Ngororero	96.5	96.5		0.6	0.6		4.1	4.1		43.8	43.8	
Rusizi	85.5	85.2	100.0	0.2	0.2	-	8.4	7.5	50.0	63.2	63.9	30.0
Nyamasheke	93.9	93.8	100.0	0.2	0.2	-	5.8	4.5	85.7	52.4	52.7	33.3
Rulindo	96.0	96.0	100.0	0.5	0.2	20.0	14.3	14.0	40.0	51.8	51.9	40.0
Gakenke	99.7	99.7		-	-		3.8	3.8		48.7	48.7	
Musanze	88.5	88.5	100.0	0.6	0.4	33.3	1.2	1.2	-	41.7	41.4	100.0
Burera	97.1	97.1		0.4	0.4		1.9	1.9		39.6	39.6	
Gicumbi	98.0	98.0	100.0	-	-	-	2.4	2.2	50.0	24.9	24.6	100.0
Rwamagana	91.7	91.4	96.8	0.7	0.7	-	16.7	14.2	61.3	62.5	61.9	74.2
Nyagatare	90.3	90.3	89.7	10.9	6.8	69.2	7.2	3.8	56.4	44.8	45.0	41.5
Gatsibo	95.4	95.3	100.0	5.6	3.1	72.0	13.8	11.9	64.0	59.6	59.2	72.0
Kayonza	88.5	87.8	100.0	2.8	0.2	42.9	19.2	15.2	82.1	57.4	57.9	48.4
Kirehe	84.0	83.8	100.0	0.2	0.2	-	9.1	8.3	75.0	50.3	50.5	33.3
Ngoma	91.0	90.8	100.0	1.4	0.7	29.4	10.3	8.3	82.4	50.9	51.4	31.6
Bugesera	77.6	78.0	70.6	0.8	0.5	5.9	21.0	18.9	55.9	53.7	52.9	67.5
National	92.1	92.1	94.1	1.2	0.7	21.7	10.3	9.0	66.5	46.0	46.0	48.8

Source : NISR, SAS 2023

**Table 29: 2023 Season A Percentage of plots by types of irrigation used.**

District	Modern irrigation					Traditional techniques
	Surface irrigation	Flood irrigation	Drip irrigation	Sprinkler irrigation	Pivot irrigation	
Nyarugenge	33.3	-	-	-	-	66.7
Gasabo	-	6.1	-	-	-	93.9
Kicukiro	33.3	8.3	-	-	-	58.3
Nyanza	39.1	21.7	-	-	-	39.1
Gisagara	7.3	58.5	-	-	-	34.2
Nyaruguru	33.3	-	-	22.2	-	44.4
Huye	35.9	3.8	-	-	-	60.4
Nyamagabe	62.5	-	-	-	-	37.5
Ruhango	13.0	34.8	-	-	-	52.2
Muhanga	32.4	8.8	-	-	-	58.8
Kamonyi	6.3	6.3	-	9.4	-	78.1
Karongi	18.2	-	9.1	-	-	72.7
Rutsiro						
Rubavu						
Nyabihu						
Ngororero	33.3	-	-	-	-	66.7
Rusizi	12.5	50.0	-	-	-	37.5
Nyamasheke	-	66.7	-	-	-	33.3
Rulindo	7.4	3.7	18.5	-	-	70.4
Gakenke	22.2	-	-	-	-	77.8
Musanze						
Burera	100.0	-	-	-	-	-
Gicumbi	-	-	-	-	-	100.0
Rwamagana	8.8	10.3	26.5	1.5	-	52.9
Nyagatare	41.2	20.6	-	-	29.4	8.8
Gatsibo	7.7	18.0	-	-	15.4	59.0
Kayonza	42.4	14.1	3.3	2.2	1.1	37.0
Kirehe	13.0	17.4	-	21.7	26.1	21.7
Ngoma	-	22.9	-	-	40.0	37.1
Bugesera	30.0	17.8	1.1	26.7	5.6	18.9
National	22.2	16.9	3.8	5.0	5.7	46.4

Source: NISR, SAS 2023

**Table 30: 2023 Season A Percentage of plots by source of water used and district.**

District	Source of water used				
	Rainwater	Water treatment	Underground	Lake / streams	Water catchment
Nyarugenge	-	-	33.3	66.7	-
Gasabo	-	15.2	27.3	57.6	-
Kicukiro	-	7.7	15.4	61.5	15.4
Nyanza	-	-	41.9	51.6	6.5
Gisagara	2.0	2.0	51.0	44.9	-
Nyaruguru	-	-	-	100.0	-
Huye	-	5.1	32.2	50.9	11.9
Nyamagabe	-	-	25.0	75.0	-
Ruhango	6.7	-	36.7	53.3	3.3
Muhanga	2.9	-	37.1	51.4	8.6
Kamonyi	-	3.1	46.9	40.6	9.4
Karongi	-	-	27.3	72.7	-
Rutsiro	-	-	-	-	-
Rubavu	-	-	-	-	-
Nyabihu	-	-	-	-	-
Ngororero	-	-	33.3	66.7	-
Rusizi	-	6.3	6.3	87.5	-
Nyamasheke	-	11.1	33.3	44.4	11.1
Rulindo	-	3.6	32.1	46.4	17.9
Gakenke	-	-	44.4	55.6	-
Musanze	-	-	-	-	-
Ngororero	-	-	100.0	-	-
Gicumbi	-	-	-	100.0	-
Rwamagana	-	29.0	13.0	24.6	33.3
Nyagatare	-	2.3	9.1	54.6	34.1
Gatsibo	-	-	34.1	52.3	13.6
Kayonza	-	1.8	23.9	33.9	40.4
Kirehe	-	4.0	24.0	64.0	8.0
Ngoma	12.5	15.0	17.5	50.0	5.0
Bugesera	5.4	1.1	27.2	60.9	5.4
National	1.7	5.6	27.8	49.9	15.0

Source: NISR, SAS 2023

**Table 31: 2023 Season A Percentage of plots by type of anti-erosion activities and district**

District	Type of anti-erosion activities									
	Ditches	Trees/Windbreak/ shelterbelt	Bench terraces	Progressive terraces	Cover plants	Water drainage	Mulching	Beds/ridges	Water channels	Others
Nyarugenge	38.6	1.5	-	4.2	50.2	-	4.2	0.8	0.5	-
Gasabo	2.8	15.6	0.5	12.0	58.8	2.6	0.3	0.4	7.0	-
Kicukiro	0.9	12.1	0.4	8.5	12.0	2.0	11.1	32.7	20.3	-
Nyanza	8.5	5.2	2.4	2.5	55.1	0.0	1.3	11.1	14.0	-
Gisagara	19.3	4.4	2.0	7.7	47.1	0.3	1.4	2.6	14.4	0.9
Nyaruguru	2.7	9.2	3.2	10.0	62.4	0.5	0.4	0.8	10.5	0.4
Huye	8.2	9.4	1.5	19.1	46.4	0.1	2.0	1.0	12.3	0.1
Nyamagabe	3.7	8.2	11.8	6.7	61.1	0.0	1.4	0.9	6.0	-
Ruhango	6.6	8.1	0.9	8.8	51.1	0.6	2.4	6.8	14.5	-
Muhanga	1.4	3.1	3.1	19.0	61.8	0.0	3.4	1.9	6.0	0.3
Kamonyi	7.9	2.1	0.1	4.7	67.1	0.0	6.2	0.6	11.3	-
Karongi	2.7	11.2	4.2	3.1	69.2	-	0.9	0.9	7.3	0.6
Rutsiro	5.9	3.4	7.8	6.0	60.4	0.1	7.9	0.4	8.1	-
Rubavu	1.3	15.0	7.5	-	29.9	-	0.6	39.8	0.1	5.9
Nyabihu	5.5	4.9	12.4	10.8	53.6	-	0.1	11.8	0.8	0.1
Ngororero	2.1	5.9	6.7	12.2	64.8	-	2.1	0.2	5.8	0.3
Rusizi	2.4	20.6	1.3	10.1	54.9	0.1	5.2	1.0	3.8	0.6
Nyamasheke	2.1	9.9	4.4	10.0	61.4	0.1	4.5	1.1	6.3	0.4
Rulindo	8.0	0.8	7.1	22.0	52.7	0.0	0.1	2.8	6.5	0.1
Gakenke	4.4	6.0	3.4	6.5	62.5	0.6	2.0	0.9	13.4	0.3
Musanze	4.7	8.9	4.8	4.2	30.7	-	1.0	41.7	3.9	0.2
Burera	0.5	3.6	2.5	12.2	60.4	-	0.3	18.7	1.8	-
Gicumbi	0.7	2.0	15.6	19.0	56.7	-	0.7	0.8	4.5	-
Rwamagana	0.6	6.8	2.1	14.0	66.6	0.0	5.0	3.8	1.1	0.0
Nyagatare	2.6	15.4	-	22.3	46.1	1.3	3.9	3.3	5.1	-
Gatsibo	3.3	12.2	0.8	14.2	55.0	0.4	6.9	0.1	7.1	0.1
Kayonza	4.1	17.9	9.6	3.0	41.9	0.4	6.4	7.5	9.2	-
Kirehe	5.2	4.3	0.7	8.6	71.2	0.1	6.7	-	2.6	0.7
Ngoma	3.0	11.3	5.0	0.6	67.6	0.1	9.5	2.2	0.1	0.7
Bugesera	12.0	22.9	1.0	17.3	33.5	0.7	1.6	1.5	9.6	-
National	4.6	7.6	5.1	10.5	56.7	0.2	2.6	5.2	7.3	0.3

Source: NISR, SAS 2023

**Table 32: 2023 Season A\_Percentage of plots by degree of erosion per district**

District	Degree of erosion			
	Severe (Rill erosion, Gully erosion, Mass movement/Landslides)	Moderate (Diffuse overland flow erosion, overland flow erosion)	Low (Wind erosion)	Very Low (Splash erosion)
Nyarugenge	0.0	1.7	12.8	85.6
Gasabo	0.0	24.3	32.9	42.8
Kicukiro	0.4	0.0	4.3	95.4
Nyanza	1.0	45.5	17.8	35.7
Gisagara	0.2	5.1	35.9	58.9
Nyaruguru	1.1	22.1	43.0	33.9
Huye	2.3	12.7	62.5	22.5
Nyamagabe	2.3	12.3	53.5	31.9
Ruhango	2.7	14.9	43.2	39.1
Muhanga	2.2	8.4	16.5	72.8
Kamonyi	0.4	26.5	30.7	42.5
Karongi	1.2	33.1	43.0	22.7
Rutsiro	4.8	18.7	16.4	60.2
Rubavu	3.4	18.5	9.1	69.0
Nyabihu	2.9	20.3	55.1	21.7
Ngororero	3.5	32.6	42.1	21.9
Rusizi	2.7	13.6	43.5	40.2
Nyamasheke	1.5	14.5	14.6	69.4
Rulindo	0.3	12.6	33.0	54.1
Gakenke	2.1	11.9	50.9	35.1
Musanze	0.9	6.4	19.2	73.6
Burera	3.3	9.0	29.6	58.2
Gicumbi	1.4	43.4	35.8	19.4
Rwamagana	0.2	24.8	50.2	24.8
Nyagatare	0.5	9.5	16.8	73.2
Gatsibo	4.0	11.9	44.7	39.4
Kayonza	0.3	7.9	7.4	84.4
Kirehe	0.1	3.5	17.5	79.0
Ngoma	0.0	5.1	46.7	48.2
Bugesera	0.0	12.5	47.5	40.0
National	1.7	17.7	35.3	45.4

Source: NISR, SAS 2023



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