



The Republic of Rwanda



SEASONAL AGRICULTURAL SURVEY SEASON B 2023 REPORT

September 2023

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SEASON B 2023 REPORT

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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 2023Season B 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 crops¹ 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.

¹ 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

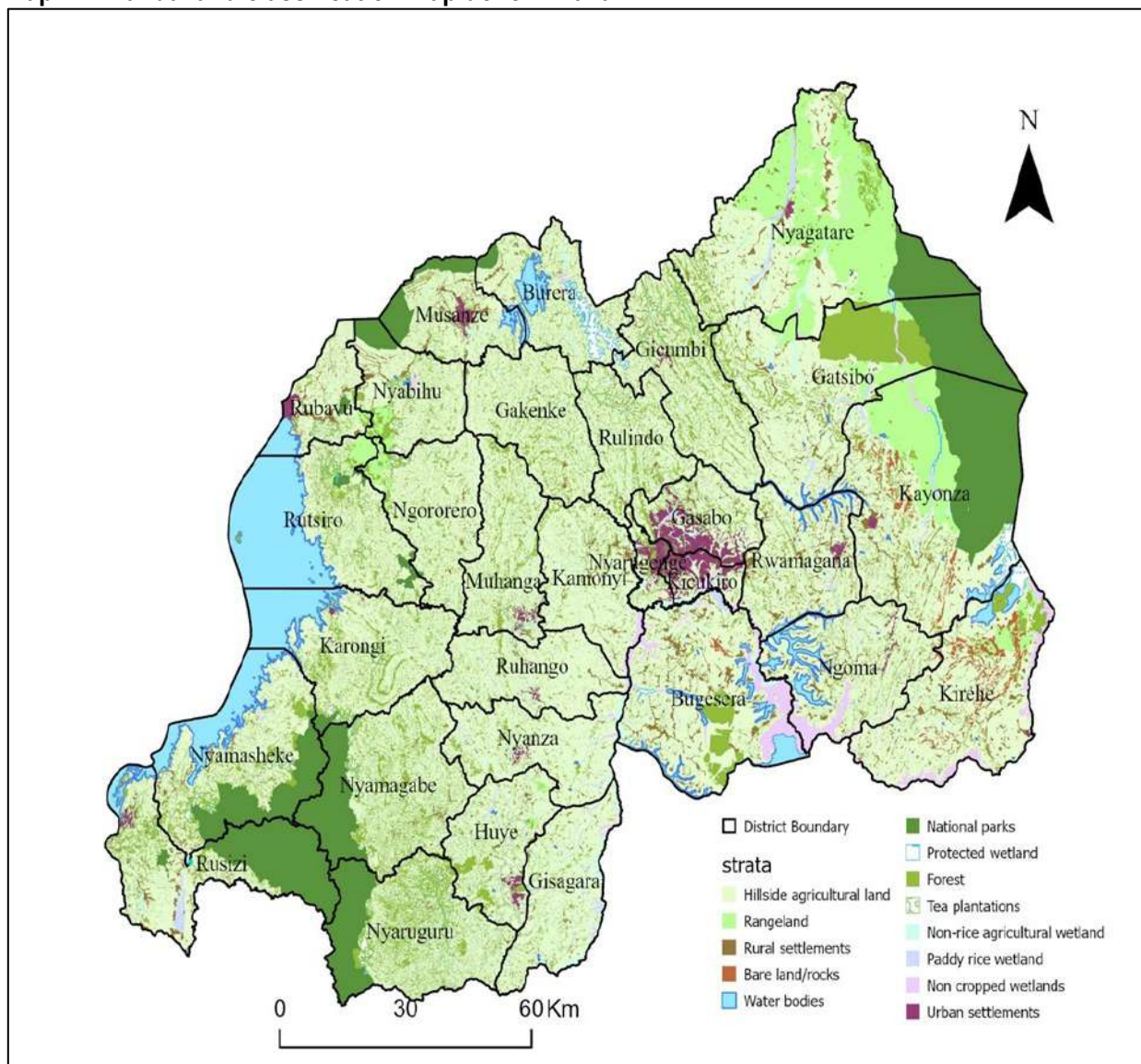
Land classification was done using Rwanda land cover map which is a combination of different layers available in the country, plus a photo interpretation of a series (2010 to 2020) of high-resolution satellite images from Worldview. The Rwanda land cover map is divided into 13 land cover classes (as 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
Kayanza	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
National	148,119	7,508	15,494	23,433	75,435	269,989

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, 1988²). 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
Kayanza	32	2	13	5	52
Kirehe	45	-	3	6	54
Ngoma	39	-	-	6	45
Bugesera	45	3	-	8	56
National	942	75	52	131	1200

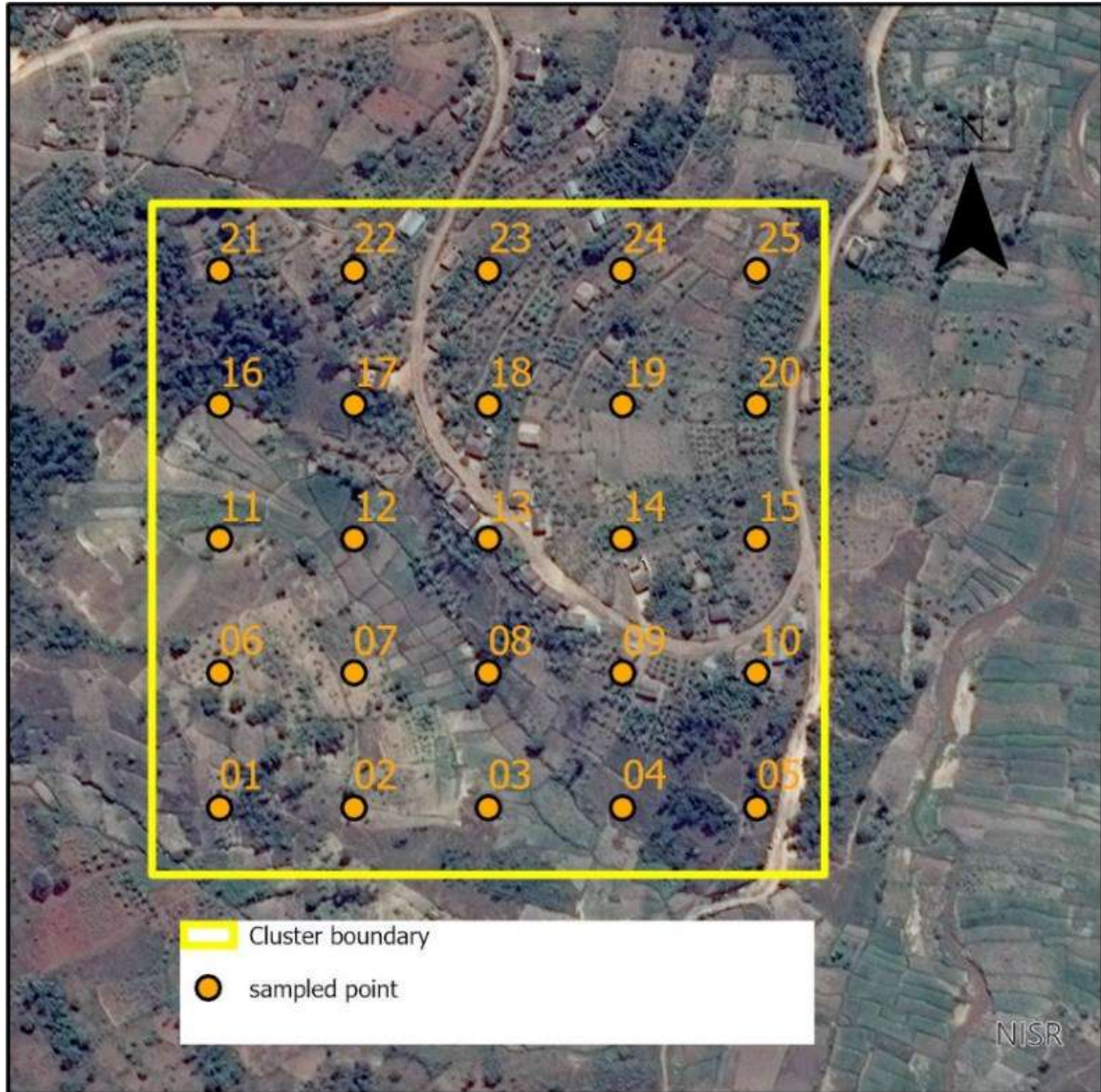
Source: NISR, SAS 2023

² 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:

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

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 137 Enumerators and 23 Team Leaders, graduates 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 2nd May and ended on 30th June 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 CPro 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 permanent³ 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).

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.

³ 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.

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.

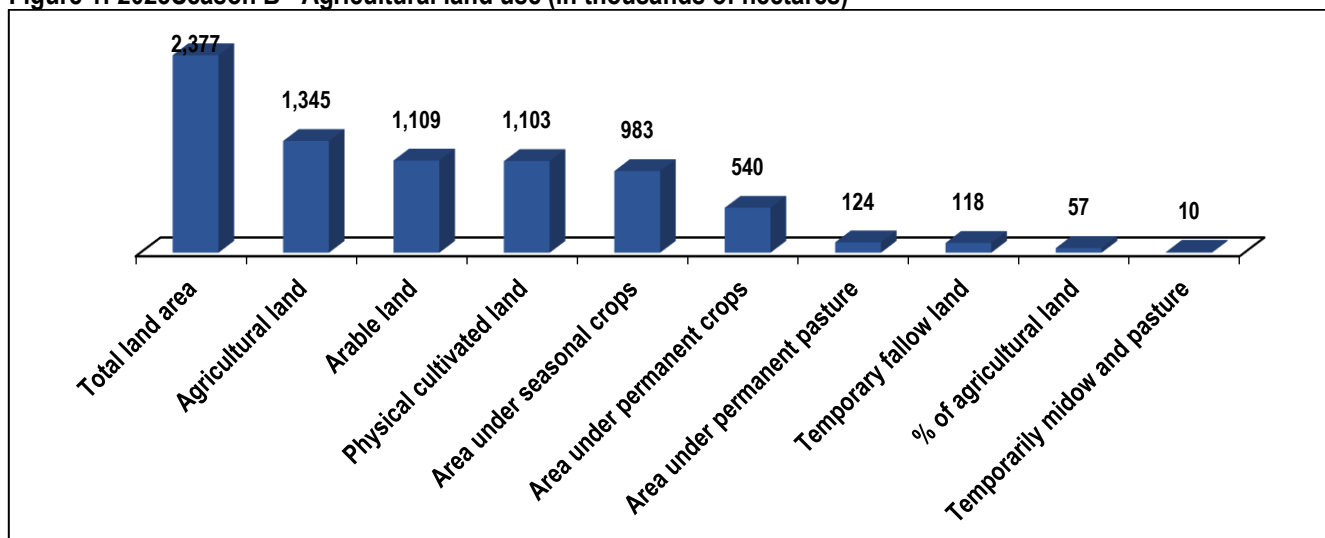
III. SURVEY FINDINGS

This section summarizes key survey results about crop area (physical land use, cultivated area, and harvested area), yield, production, agricultural inputs (seeds, fertilizers and pesticides) used, and main agricultural practices (irrigation and erosion control measures) applied by farmers during the 2023 Season B.

3.1. Agricultural land use

The total country land area is estimated at 2.377 million of hectares for which 1.345 million hectares (56.6% of total country land) is used for agriculture. In 2023Season B, 983,000 hectares were used for Seasonal crops, 540,000 hectares were covered by permanent crops, while 124,000 hectares were used for permanent pasture. (See district details in Table 6).

Figure 1: 2023Season B - 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 93,927 hectares, up 15 percent from the 2022 Season B estimates.
- The maize production reached 117,613 metric tons, a 7.3 percent increase when compared to the 2022 Season B estimates
- The national average maize yield was 1.3 tons per hectare, with small-scale farmers averaging 1.2 tons per hectare and large-scale farmers achieving 4.1 tons per hectare (Refer to district-specific details in Tables 5, 8-12).

Sweet potato:

- The cultivated area was estimated at 96,231 hectares, showing a 5 percent increase compared to the 2022 Season B figures.
- The production marked a decrease of 4.5 percent when compared to Season B of 2022 production estimates, reaching 620,185 metric tons.
- The national average yield of sweet potato was 7.4 tons per hectare (See district details in Tables 5, 8-12).

Irish potato:

- The Irish potato cultivation area was estimated at 48,210 hectares, indicating a 9 percent reduction compared to the 2022 Season B figures.
- In terms of production, 326,677 metric tons were produced, showing a 1.3 percent decline compared to the 2022 Season B data.
- The average yield of Irish potato was 6,7 tons per hectare, with an average yield of 6,7 and 15,9 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).

Cassava:

- The cultivated area was estimated at 159,089 hectares, a 4 percent increase from 2022 season B, while the harvested area reached 49,655 hectares, showing a 2 percent increase from the 2022 season B.
- The production of cassava was at 736,686 metric tons, a slight change (-0.1%) from 2022 Season B.
- The national average yield of cassava was 14,8 tons per hectare (See district details in Tables 5, 8-12).

Paddy rice:

- The cultivated area for paddy rice was estimated at 16,678 hectares, an increase of 1 percent when compared to the 2022 Season B figures.
- The production of paddy rice was estimated at 69,940 metric tons, a decrease of 2.7 percent when compared to the 2022 Season B data.
- The national average yield of paddy rice was 4.2 tons per hectare, with an average yield of 2.2 and 4.2 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).

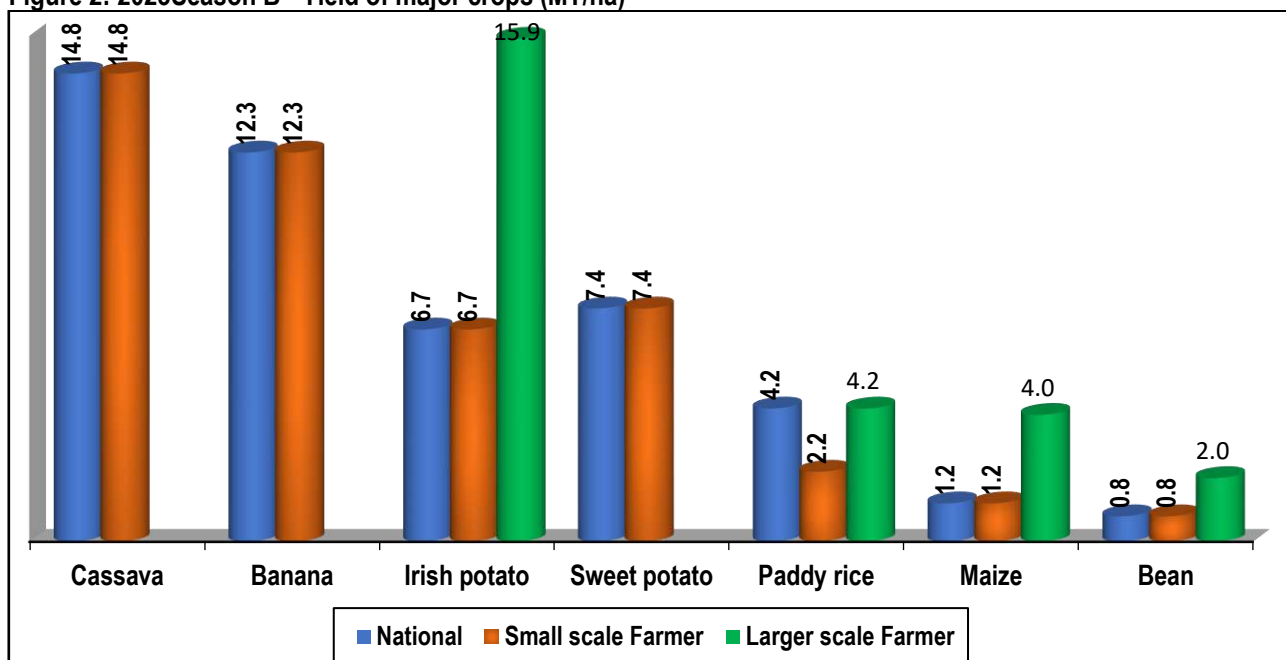
Banana:

- The cultivated area for Banana was estimated at 258,094 hectares, an increase of 21 percent when compared to Season B of 2022. The harvested area was estimated at 88,361 hectares.
- The production of banana was estimated at 1,089,377 metric tons, an increase of 7.2 percent when compared to 2022 Season B.
- The average yield of banana was 12,3 tons per hectare (See district details in Tables 5, 8-12).

Beans:

- The cultivated area was estimated at 309,489 hectares, an increase of 15 percent when compared to Season B of 2022 estimates.
- Bean's production was estimated at 244,194 metric tons, an increase of 16.1 percent when compared to Season B of 2022.
- The national average yield of beans was 789 kilograms per hectare, with an average yield of 786 and 2,040 kilograms for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).

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



Source: NISR, SAS 2023

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

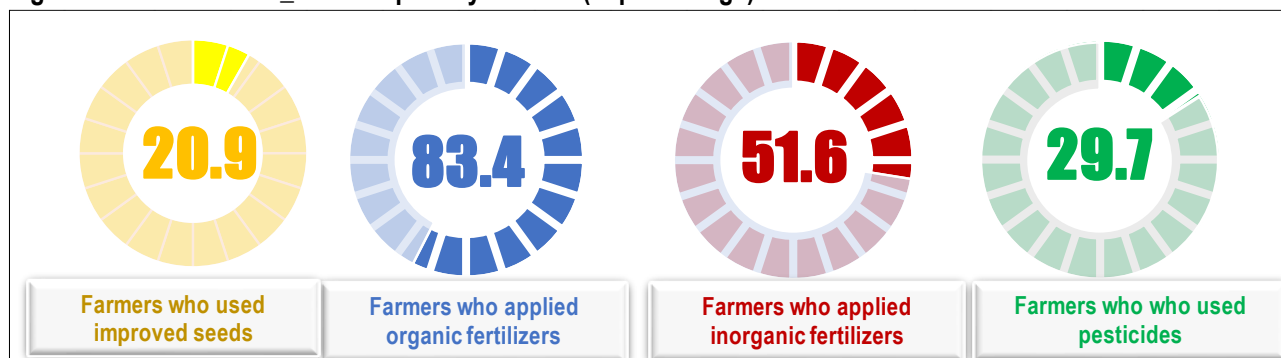
Crop/crop groups	Cultivated area (Ha)		Harvested area (Ha)		Production (MT)		Yield (MT/ha)	
	2023 B	2022 B	2023 B	2022 B	2023 B	2022 B	2023 B	2022 B
Maize	93,927	81,339	93,816	81,282	117,613	109,615	1.3	1.3
Sorghum	121,079	139,793	121,054	139,792	139,425	147,411	1.2	1.1
Paddy rice	16,678	16,517	16,603	16,474	69,940	68,072	4.2	4.1
Wheat	10,375	8,482	10,375	8,482	13,129	9,858	1.3	1.2
Other cereals	3,073	13,718	3,073	13,715	1,646	6,934	0.5	0.5
Cassava	159,089	152,470	49,655	48,494	736,686	737,284	14.8	15.2
Sweet potato	96,231	92,056	83,212	86,589	620,185	649,445	7.4	7.4
Irish potato	48,210	52,858	48,205	52,844	326,677	331,016	6.8	6.3
Taro &Yams	16,015	19,245	13,621	15,928	106,665	117,647	7.8	7.4
Banana	258,094	213,322	88,361	83,314	1,089,377	1,016,137	12.3	12.2
Cooking banana	87,735	73,554	28,294	24,565	493,865	450,427	17.5	18.3
Dessert banana	54,000	37,511	13,068	12,513	149,266	145,753	11.4	11.6
Banana for beer	116,359	102,257	46,998	46,236	446,246	419,956	9.5	9.1
Beans	309,489	268,634	309,410	268,628	244,194	210,290	0.7	0.7
Bush bean	192,994	170,666	192,965	170,661	138,870	118,843	0.7	0.7
Climbing bean	116,496	97,968	116,445	97,967	105,324	91,446	0.9	0.9
Pea	8,383	7,034	8,383	7,034	4,822	5,373	0.6	0.8
Groundnut	17,745	19,545	17,745	19,545	8,509	10,172	0.5	0.5
Soybean	40,235	37,251	40,231	37,229	17,288	19,530	0.4	0.5
Vegetables	19,164	16,473	17,854	15,777	171,530	175,205	9.6	11.1
Fruits	10,507	10,373	4,625	4,213	26,084	26,872	5.6	6.4
Fodder crops	8,627	10,651	8,503	10,129	102,445	106,966	12.0	10.6
Other crops	57,896	56,302	27,848	28,754	122,632	132,048	4.0	5.0

Source: NISR, SAS 2023

3.3. Use of inputs

This section provides a summary of agricultural input usage, including seeds, fertilizers, and pesticides, and presents the percentage of farmers who utilized these inputs during the season.

Figure 3: 2023Season B_Use of inputs by farmers (in percentage)



Source: NISR, SAS 2023

3.3.1. Use of seeds

Results show that 20.9 percent of farmers used improved seeds. In regard to farmer type⁴, 19.6 percent of small-scale farmers (SSF) and 78.2 percent of Large-scale farmers (LSF) used improved seeds. The major sources of improved seed include agro-dealers (41.6%) and NGO/companies (26.3%) (See details in Tables, 17-20).

3.3.2. Use of fertilizers

During the 2023 Season B, 83.4 percent of farmers used organic fertilizer, with 83.7 percent of small-scale farmers and 69.8 percent being large-scale farmers. Additionally, 51.6 percent of farmers applied inorganic fertilizer with 50.9 percent of small-scale farmers and 84.2 percent of large-scale farmers applied inorganic fertilizer. The main sources of inorganic fertilizers were NGOs/companies and agro dealers, accounting for 47.0 percent and 38.5 percent respectively. DAP, UREA and NPK are inorganic fertilizers mostly used in this season with 41.6 percent, 34.3 percent and 19.9 percent respectively (See details in Tables 7,21-25).

3.3.3. Use of pesticides

Results show that, 29.7 percent of farmers applied pesticides. According to farmer type, 28.6 percent of small-scale farmers and 79.9 percent of large-scale farmers applied pesticides respectively. Rocket, Dithane and Cypermethrin were the most used pesticides with 27.8 percent of farmers, 26.9 percent and 17.1 percent respectively (See details in Tables 26 & 27).

3.4. Agricultural practices

This section highlights farmers' engagement in agricultural practices, including irrigation, erosion control, and agroforestry, during the 2023 Season B. The results are presented in terms of percentage of farmers involved in such practices during the 2023 Season B.

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

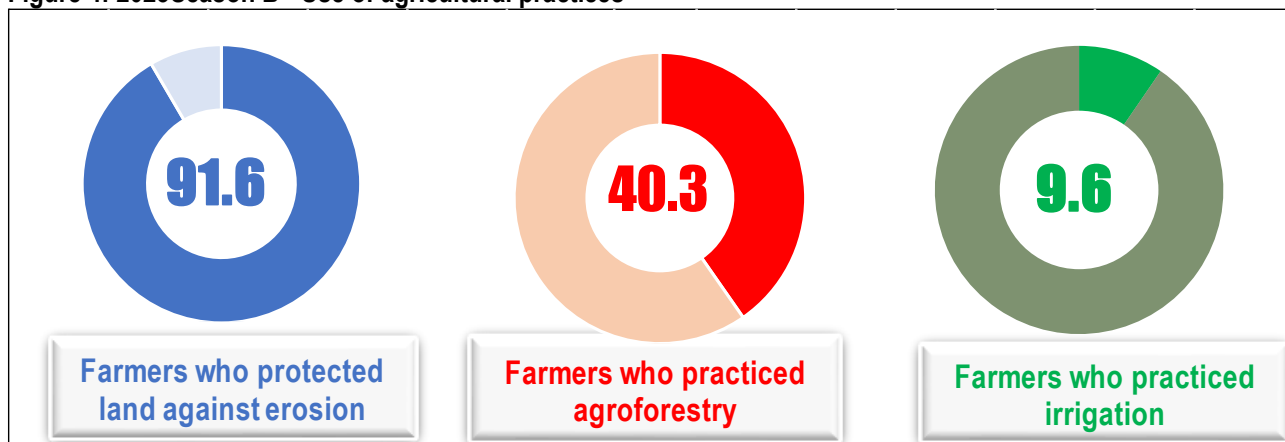
3.4.1. Irrigation practices

Results show that, 9.6 percent of farmers practiced irrigation. The irrigation was practiced by 8.4 percent of small-scale farmers and 64.8 percent for large-scale farmers. Out of farmers who practiced irrigation 54.3 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 48.9 percent and 28.3 percent respectively (See details in Tables 7,28-30).

3.4.2. Erosion control measures

Results indicate that, 91.6 percent of farmers practiced anti-erosion activities. Cover plants was the most used type of anti-erosion with 58.9 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 42.1 percent (See details in Tables 7, 28, 31 and 32). Furthermore, 40.3 percent of farmers practiced agroforestry, while 0.7 percent of farmers used mechanical equipment in their agricultural activities (See table 28).

Figure 4: 2023Season B - Use of agricultural practices



Source: NISR, SAS 2023

IV. MAIN TABLES

Table 6: 2023 Season B_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	5.4	41.0	4.6	4.9	4.1	2.8	0.0	0.4	0.1
Gasabo	42.7	19.1	44.8	17.7	16.9	15.3	7.3	0.4	1.8	0.6
Kicukiro	16.6	5.6	33.5	4.9	4.5	4.1	1.8	0.3	0.8	0.1
Nyanza	67.1	42.6	63.5	40.1	39.1	36.4	15.0	0.1	3.4	0.3
Gisagara	67.3	38.8	57.6	37.1	35.5	33.7	14.4	-	3.3	0.1
Nyaruguru	100.7	34.1	33.8	29.7	29.9	24.9	11.6	0.1	4.1	0.7
Huye	58.1	31.7	54.6	30.3	29.5	28.0	13.6	-	2.2	0.2
Nyamagabe	109.1	43.3	39.7	38.2	37.2	31.7	12.0	0.0	6.1	0.4
Ruhango	62.6	46.3	74.0	42.2	40.8	36.0	13.8	-	5.6	0.8
Muhanga	64.4	38.7	60.0	33.5	32.4	26.8	18.1	-	6.3	0.5
Kamonyi	65.8	42.8	65.0	37.9	39.0	33.8	17.2	0.1	3.7	0.4
Karongi	78.9	41.8	53.0	34.9	33.9	26.6	15.5	-	8.0	0.4
Rutsiro	66	39.1	59.2	27.2	25.2	19.6	17.4	6.2	7.6	-
Rubavu	33.8	23.2	68.6	21.7	22.0	20.5	5.7	0.4	0.8	0.6
Nyabihu	53.6	34.7	64.8	30.4	24.0	23.7	6.0	4.0	6.7	0.2
Ngororero	67.5	44.4	65.7	37.8	35.4	30.9	17.5	2.3	6.7	0.2
Rusizi	91.4	35.9	39.3	33.2	34.2	31.3	13.2	-	1.7	0.1
Nyamasheke	94.8	39.2	41.4	30.0	37.2	27.9	21.3	-	2.0	-
Rulindo	56.7	36.2	63.8	32.5	32.3	29.3	12.9	0.8	3.0	0.3
Gakenke	70.1	48.7	69.5	41.1	41.8	33.9	21.1	0.1	6.8	0.3
Musanze	50.9	27.8	54.5	26.9	25.3	24.4	4.0	-	2.5	0.0
Burera	58.4	35.4	60.6	35.0	31.6	31.1	4.1	-	3.7	0.2
Gicumbi	82.5	49.1	59.6	47.0	45.0	41.7	12.3	-	4.1	1.3
Rwamagana	65.3	45.3	69.4	40.0	41.6	37.4	22.4	1.7	2.0	0.5
Nyagatare	191.1	140.6	73.6	71.9	73.0	68.9	84.7	65.3	2.3	0.7
Gatsibo	153.6	72.6	47.3	57.5	62.7	54.2	37.0	6.6	3.2	0.1
Kayonza	179.2	89.7	50.1	62.8	61.0	58.3	43.7	24.2	4.5	0.1
Kirehe	114.9	70.6	61.5	57.7	63.1	54.9	29.7	4.9	2.7	0.1
Ngoma	80.5	50.9	63.3	44.4	46.5	40.7	20.2	1.1	3.3	0.4
Bugesera	120.4	70.9	58.9	61.0	57.3	52.5	23.6	5.7	8.0	0.6
National	2,377	1,344.6	56.6	1,109.3	1,102.7	982.7	540.0	124.3	117.6	10.2

Source: NISR, SAS 2023

Table 7: 2023 Season B_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	18	2,179	2,109	339	2,428
Gasabo	264	12,293	8,910	3,188	10,037
Kicukiro	114	1,790	2,619	1,718	1,865
Nyanza	1,169	29,295	12,456	6,261	19,907
Gisagara	1,943	19,616	15,076	8,760	17,810
Nyaruguru	279	29,102	9,999	13,619	20,377
Huye	721	24,200	12,664	6,649	17,867
Nyamagabe	80	37,504	13,009	10,682	26,450
Ruhango	896	31,095	6,951	4,167	21,005
Muhanga	148	30,657	13,343	5,253	19,464
Kamonyi	436	30,946	11,616	3,914	20,871
Karongi	150	31,431	13,382	8,254	19,865
Rutsiro	-	23,505	13,177	8,220	14,332
Rubavu	-	18,506	9,345	10,560	9,323
Nyabihu	-	29,697	16,672	15,787	16,405
Ngororero	117	36,114	18,967	12,345	26,830
Rusizi	1,483	19,336	17,198	10,326	16,427
Nyamasheke	521	33,665	18,098	13,948	21,574
Rulindo	174	33,120	15,628	10,527	24,508
Gakenke	-	45,838	16,339	18,215	29,546
Musanze	-	22,857	8,155	12,452	16,092
Burera	56	29,445	11,871	13,003	21,582
Gicumbi	-	42,644	10,329	9,842	34,229
Rwamagana	570	31,548	22,043	10,517	18,077
Nyagatare	2,709	77,192	42,268	40,362	27,622
Gatsibo	1,554	62,988	37,115	20,180	40,067
Kayonza	2,651	47,096	28,821	18,269	20,267
Kirehe	2,581	42,129	27,936	13,841	21,292
Ngoma	967	30,197	21,195	5,900	13,962
Bugesera	2,870	36,041	34,986	17,796	21,822
National	22,470	942,025	492,293	334,893	591,903

Source: NISR, SAS 2023

Table 8: 2023 Season B_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	414	363	-	-	-	732	169	38	104	2,069	590	432	1,047	1,464	1,406	58	6	25	235	178	46	68	236	6,149
Gasabo	1,199	3,589	256	-	-	2,564	1,135	372	61	3,885	1,202	1,255	1,429	3,822	3,410	412	56	192	625	820	7	476	418	19,478
Kicukiro	566	718	83	-	-	394	275	-	191	888	264	190	435	1,316	1,291	26	-	26	301	141	44	38	205	5,186
Nyanza	2,751	4,482	714	-	62	8,676	2,084	285	634	6,155	1,542	1,806	2,806	12,436	10,451	1,985	102	769	2,307	688	219	273	1,377	44,013
Gisagara	2,695	3,985	2,953	-	307	7,026	2,794	50	343	7,286	1,306	2,027	3,953	12,055	10,557	1,498	6	379	3,110	544	929	103	449	45,014
Nyaruguru	286	2,980	-	357	-	4,163	5,211	1,736	531	4,612	1,105	1,581	1,926	6,683	938	5,745	346	15	1,561	643	182	553	4,468	34,328
Huye	988	6,190	692	-	163	5,037	3,199	447	625	5,953	1,857	1,681	2,415	7,930	5,124	2,806	157	42	2,592	301	176	125	1,447	36,065
Nyamagabe	1,127	4,059	21	2,641	-	6,025	6,799	2,421	630	5,610	839	1,007	3,764	6,496	814	5,682	1,229	-	733	205	107	313	3,337	41,752
Ruhango	1,117	2,685	878	-	71	18,105	3,028	189	627	9,080	1,434	2,413	5,233	10,358	7,692	2,666	78	1,855	4,226	546	-	595	1,756	55,192
Muhanga	1,134	55	121	3	-	7,789	5,986	104	1,901	18,129	3,124	3,270	11,735	6,302	2,284	4,018	35	-	1,973	577	172	424	921	45,626
Kamonyi	1,983	3,336	192	-	-	12,202	3,747	452	1,109	11,908	2,338	2,290	7,279	9,401	7,849	1,551	46	707	4,378	840	887	310	1,611	53,108
Karongi	737	1,894	-	304	-	6,386	3,889	995	1,271	9,604	1,208	1,833	6,562	7,161	1,596	5,565	327	-	1,488	757	80	416	4,029	39,339
Rutsiro	1,374	75	-	496	-	1,308	3,557	3,635	850	6,345	1,413	1,747	3,185	4,723	640	4,082	573	-	1,408	117	656	-	4,240	29,356
Rubavu	1,993	460	-	-	-	397	849	6,153	153	2,885	656	421	1,808	5,174	695	4,479	448	44	551	2,219	136	609	1,073	23,144
Nyabihu	3,658	-	-	1,924	-	378	2,364	8,270	26	955	243	323	390	2,589	83	2,506	556	-	132	772	217	131	652	22,623
Ngororero	4,063	24	-	1,899	-	2,723	6,653	1,365	845	10,945	1,572	2,201	7,172	4,875	543	4,332	210	-	1,252	346	165	193	1,971	37,531
Rusizi	1,309	175	1,423	-	5	15,766	2,840	72	789	4,090	1,335	548	2,206	10,895	7,940	2,955	50	248	1,086	447	670	90	2,994	42,947
Nyamasheke	628	22	363	30	60	10,732	4,362	81	470	6,905	1,841	1,500	3,564	6,143	1,215	4,928	193	1,105	1,536	401	285	-	8,596	41,913
Rulindo	1,239	4,898	18	94	6	4,671	3,612	1,268	208	7,497	2,204	1,914	3,379	10,305	3,623	6,681	370	-	591	809	154	182	2,016	37,936
Gakenke	1,517	668	-	416	-	5,161	6,062	1,057	1,802	15,138	3,887	3,001	8,250	12,418	1,056	11,362	168	-	898	166	244	250	1,966	47,930
Musanze	2,825	952	-	1,343	-	94	2,150	5,063	190	1,864	834	416	614	6,994	281	6,713	558	-	7	791	521	10	991	24,353
Burera	2,170	6,487	-	709	-	105	3,826	4,245	56	2,183	919	269	994	12,346	425	11,921	996	-	-	915	138	152	343	34,670
Gicumbi	2,423	12,449	-	159	22	2,270	7,787	2,551	86	8,324	2,841	2,439	3,044	13,109	3,032	10,077	1,146	349	161	490	121	1,093	1,264	53,805
Rwamagana	4,621	10,183	491	-	300	3,430	1,775	924	144	12,685	6,714	3,058	2,912	10,754	10,483	271	243	1,347	547	1,188	524	517	1,640	51,311
Nyagatare	22,767	4,483	1,843	-	269	2,292	1,711	620	77	11,804	6,652	1,384	3,768	29,084	27,660	1,424	39	1,795	1,138	699	81	683	538	79,922
Gatsibo	9,536	7,283	1,667	-	153	1,797	1,950	1,715	460	19,744	10,464	3,549	5,732	18,456	16,168	2,288	96	2,979	2,119	704	407	72	3,559	72,696
Kayanza	7,669	12,326	1,814	-	452	10,493	1,957	1,819	634	12,986	7,780	2,508	2,698	18,864	18,561	303	68	1,033	559	762	1,328	56	1,315	74,135
Kirehe	2,700	13,273	949	-	92	4,846	1,706	1,268	727	19,792	9,486	3,725	6,580	21,109	13,700	7,409	233	883	1,363	976	1,305	31	1,743	72,996
Ngoma	2,161	6,906	861	-	1,024	4,721	1,545	729	137	15,983	8,035	2,523	5,425	17,316	14,700	2,616	26	887	1,564	342	468	383	1,127	56,180
Bugesera	6,277	6,082	1,340	-	86	8,808	3,209	285	335	12,792	4,051	2,687	6,053	18,912	18,778	134	23	3,066	1,790	778	237	481	1,614	66,118
National	93,927	121,079	16,678	10,375	3,073	159,089	96,231	48,210	16,015	258,094	87,735	54,000	116,359	309,489	192,994	116,496	8,383	17,745	40,235	19,164	10,507	8,627	57,896	1,294,818
SSF	92,198	120,997	196	10,306	3,031	159,043	96,205	47,857	16,014	257,959	87,628	53,983	116,349	308,743	192,313	116,431	8,363	17,742	39,441	18,930	10,116	8,133	57,024	1,272,297
LSF	1,730	82	16,482	70	42	46	26	353	0	135	107	18	10	746	681	65	20	4	794	234	392	494	871	22,521

Source: NISR, SAS 2023

Table 9: 2023 Season B_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	414	363	-	-	-	197	163	38	84	695	139	93	463	1,464	1,406	58	6	25	235	161	17	68	90	4,020
Gasabo	1,199	3,589	256	-	-	425	1,116	372	30	1,255	368	388	499	3,822	3,410	412	56	192	625	800	0	476	181	14,395
Kicukiro	564	718	83	-	-	114	268	-	171	381	100	84	198	1,316	1,291	26	-	26	301	139	23	26	97	4,226
Nyanza	2,751	4,482	639	-	62	1,738	2,061	285	551	1,542	422	421	699	12,436	10,451	1,985	102	769	2,307	688	88	273	1,178	31,953
Gisagara	2,695	3,985	2,953	-	307	2,713	2,685	50	326	1,845	335	564	947	12,055	10,557	1,498	6	379	3,110	544	95	103	225	34,075
Nyaruguru	286	2,980	-	357	-	1,546	4,127	1,736	265	816	219	223	374	6,683	938	5,745	346	15	1,561	643	51	553	794	22,759
Huye	988	6,190	692	-	163	1,259	2,841	447	557	1,247	344	329	574	7,930	5,124	2,806	157	42	2,592	301	141	125	1,122	26,794
Nyamagabe	1,127	4,059	21	2,641	-	1,267	5,900	2,421	586	1,762	146	150	1,466	6,496	814	5,682	1,229	-	733	186	71	313	942	29,753
Ruhango	1,117	2,685	878	-	71	4,663	2,670	189	534	2,070	149	285	1,636	10,347	7,681	2,666	78	1,855	4,226	546	58	394	976	33,355
Muhanga	1,134	55	121	3	-	2,464	5,526	104	1,810	6,916	628	645	5,643	6,302	2,284	4,018	35	-	1,973	536	141	424	743	28,288
Kamonyi	1,983	3,336	192	-	-	1,592	3,399	452	938	5,211	644	730	3,838	9,333	7,832	1,501	46	707	4,378	736	802	310	1,212	34,629
Karongi	737	1,894	-	304	-	1,876	3,374	995	954	4,621	388	342	3,890	7,161	1,596	5,565	327	-	1,488	757	26	416	977	25,908
Rutsiro	1,317	75	-	496	-	839	2,770	3,635	708	2,534	409	670	1,455	4,723	640	4,082	573	-	1,408	117	328	278	1,918	21,719
Rubavu	1,993	460	-	-	-	233	805	6,153	140	1,051	313	152	586	5,174	695	4,479	448	44	551	2,172	52	609	841	20,725
Nyabihu	3,611	-	-	1,924	-	89	2,110	8,270	26	324	86	125	113	2,589	83	2,506	556	-	132	772	119	131	97	20,751
Ngororero	4,063	24	-	1,899	-	479	5,738	1,365	822	3,638	210	384	3,044	4,875	543	4,332	210	-	1,252	326	100	114	584	25,489
Rusizi	1,309	153	1,423	-	5	10,006	2,432	72	765	1,539	604	184	751	10,895	7,940	2,955	50	248	1,086	426	357	40	2,356	33,161
Nyamasheke	628	22	363	30	60	3,746	4,055	81	412	1,665	410	221	1,033	6,143	1,215	4,928	193	1,105	1,536	401	203	-	3,228	23,872
Rulindo	1,239	4,898	18	94	6	973	3,099	1,268	106	2,528	527	663	1,338	10,305	3,623	6,681	370	-	591	760	44	182	1,006	27,486
Gakenke	1,517	668	-	416	-	1,300	5,703	1,057	1,705	5,866	819	1,182	3,865	12,418	1,056	11,362	168	-	898	166	206	250	1,125	33,463
Musanze	2,825	952	-	1,343	-	24	1,872	5,063	140	662	275	191	197	6,994	281	6,713	558	-	7	781	238	6	902	22,369
Burera	2,170	6,487	-	709	-	35	3,214	4,245	11	672	318	45	309	12,346	425	11,921	996	-	-	915	112	101	118	32,132
Gicumbi	2,423	12,449	-	159	22	664	5,317	2,551	70	2,326	607	616	1,104	13,109	3,032	10,077	1,146	349	161	395	64	1,093	150	42,449
Rwamagana	4,621	10,183	491	-	300	1,764	1,413	924	103	4,392	2,640	704	1,048	10,754	10,482	271	243	1,347	543	1,140	311	517	980	40,025
Nyagatare	22,763	4,483	1,843	-	269	960	1,511	615	77	4,816	2,577	435	1,804	29,084	27,660	1,424	39	1,795	1,138	678	79	683	223	71,056
Gatsibo	9,534	7,279	1,667	-	153	741	1,922	1,715	370	6,459	3,357	995	2,108	18,456	16,167	2,288	96	2,979	2,119	637	219	65	2,665	57,077
Kayanza	7,669	12,326	1,814	-	452	2,992	1,582	1,819	358	3,733	2,554	378	800	18,864	18,561	303	68	1,033	559	762	198	56	734	55,019
Kirehe	2,700	13,273	949	-	92	1,838	1,413	1,268	654	5,616	3,241	394	1,982	21,109	13,700	7,409	233	883	1,363	267	44	31	1,169	52,902
Ngoma	2,160	6,906	861	-	1,024	1,613	1,246	729	61	6,378	3,786	574	2,019	17,316	14,700	2,616	26	887	1,564	342	391	383	837	42,723
Bugesera	6,277	6,082	1,340	-	86	1,503	2,883	285	289	5,799	1,680	901	3,217	18,912	18,778	134	23	3,066	1,790	759	44	481	379	49,999
National	93,816	121,054	16,603	10,375	3,073	49,655	83,212	48,205	13,621	88,361	28,294	13,068	46,998	309,410	192,965	116,445	8,383	17,745	40,231	17,854	4,625	8,503	27,848	962,573
SSF	92,094	120,975	196	10,306	3,031	49,631	83,190	47,857	13,621	88,300	28,246	13,063	46,992	308,732	192,301	116,431	8,363	17,742	39,441	17,644	4,523	8,019	27,377	941,040
LSF	1,722	79	16,408	70	42	24	23	348	-	60	48	6	6	678	664	14	20	4	790	210	102	483	471	21,533

Source: NISR, SAS 2023

Table 10: 2023 Season B 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	980	794	-	-	-	11,760	5,213	2,976	7,510	11,101	17,592	9,077	9,560	704	711	546	-	368	502	5,472	3,891	11,885	16,682
Gasabo	1,265	1,100	4,917	-	-	12,451	6,823	3,520	3,990	13,329	17,291	14,687	9,346	764	761	785	466	603	383	12,008	2,015	9,912	906
Kicukiro	728	1,306	3,433	-	-	12,230	7,650	-	6,083	13,044	17,794	13,932	10,275	800	803	644	-	343	401	11,379	3,124	7,143	7,432
Nyanza	1,193	1,033	2,645	-	1,068	16,175	7,171	3,558	6,696	9,990	11,430	9,465	9,437	624	620	641	359	340	374	8,110	3,483	8,661	1,080
Gisagara	1,061	912	3,361	-	476	18,223	6,869	3,521	8,953	10,958	15,639	9,745	10,025	706	681	881	415	627	435	7,357	22,629	2,085	1,183
Nyaruguru	992	643	-	642	-	13,745	9,240	6,615	8,759	10,252	14,815	8,795	8,452	759	541	795	470	474	388	9,980	7,292	4,919	1,282
Huye	952	1,009	3,189	-	199	19,643	7,142	3,210	7,557	10,418	12,456	10,949	8,893	640	615	686	576	475	390	7,878	2,093	2,448	1,262
Nyamagabe	1,098	903	1,758	1,216	-	12,961	7,171	7,543	7,535	7,028	9,680	12,923	6,162	609	495	625	506	-	427	10,320	6,088	7,337	894
Ruhango	1,052	914	4,691	-	203	18,798	4,594	2,805	7,354	9,079	14,470	11,228	8,214	693	733	577	399	396	413	6,492	6,011	10,529	10,581
Muhanga	1,081	1,195	2,095	1,315	-	15,635	6,875	3,894	7,979	9,509	14,007	10,968	8,841	607	648	584	405	-	419	9,478	3,858	10,782	6,819
Kamonyi	1,139	982	3,915	-	-	16,330	6,394	3,417	9,112	9,323	14,606	9,980	8,312	596	602	563	544	565	383	5,663	7,087	12,177	1,101
Karongi	1,207	1,223	-	708	-	14,987	9,039	3,509	9,799	11,015	15,588	13,617	10,330	1,080	750	1,174	720	-	533	9,265	8,136	13,354	1,504
Rutsiro	1,215	812	-	734	-	14,744	6,840	4,723	8,943	12,170	17,949	14,989	9,246	797	659	818	534	-	422	12,666	4,946	13,642	5,974
Rubavu	1,302	626	-	-	-	12,094	7,103	8,353	5,434	12,652	16,191	12,075	10,913	761	549	794	510	637	648	12,063	6,790	30,353	7,838
Nyabihu	1,253	-	-	1,472	-	10,049	6,277	9,152	8,952	10,094	15,623	8,609	7,547	1,200	764	1,214	671	-	684	18,073	7,009	6,074	6,252
Ngororero	1,117	428	-	1,236	-	12,157	6,521	5,281	8,861	11,055	14,129	12,782	10,624	873	559	912	523	-	435	10,873	8,307	5,582	6,706
Rusizi	1,008	918	5,102	-	270	10,239	7,941	6,532	8,282	12,925	16,777	13,504	9,683	802	736	977	527	469	472	7,110	6,985	3,047	3,056
Nyamashoke	886	1,181	4,675	741	294	12,870	7,485	2,633	7,696	11,774	12,892	12,588	11,155	842	567	910	611	566	410	8,106	5,601	-	3,319
Rulindo	1,023	1,083	3,635	1,231	541	15,927	7,977	4,634	6,521	12,212	17,723	12,107	10,095	838	700	913	507	-	529	9,250	6,671	4,036	7,051
Gakenke	852	961	-	936	-	16,232	9,888	4,593	7,541	11,469	18,121	14,541	9,119	858	710	872	515	-	391	13,780	6,492	17,165	4,537
Musanze	1,523	1,364	-	1,628	-	12,201	9,798	9,189	10,328	10,918	14,165	7,911	9,303	1,265	836	1,283	583	-	499	10,812	4,840	10,088	9,054
Burera	1,252	1,560	-	1,490	-	11,264	8,883	7,703	7,646	12,989	17,848	13,855	7,871	1,093	589	1,111	606	-	-	11,381	5,272	26,299	316
Gicumbi	1,050	1,423	-	982	359	15,086	8,043	6,018	7,144	11,746	18,451	9,453	9,341	921	737	976	704	523	555	7,907	3,486	12,048	3,149
Rwamagana	859	1,141	5,350	-	762	17,429	7,348	3,564	6,461	14,557	18,408	9,750	8,083	632	633	617	702	450	559	7,416	1,255	6,907	3,802
Nyagatare	1,497	1,381	4,393	-	-	20,468	4,632	3,940	9,411	14,919	19,202	8,757	10,286	877	869	1,030	406	413	372	6,641	5,783	1,989	26,878
Gatsibo	1,351	1,306	4,998	-	722	18,241	9,495	4,522	7,050	13,969	16,726	11,173	10,898	694	670	867	477	520	552	8,723	5,486	3,775	1,955
Kayanza	1,233	1,221	4,220	-	456	15,783	5,831	3,796	5,713	15,750	18,292	12,671	9,094	723	718	1,022	526	645	491	9,252	5,438	4,387	8,124
Kirehe	2,269	1,082	4,716	-	553	16,658	6,688	3,594	5,064	16,186	20,306	10,491	10,579	735	722	759	501	443	410	7,416	4,393	9,726	3,285
Ngoma	766	1,195	3,614	-	625	15,262	6,238	5,186	3,695	15,503	18,530	8,518	11,812	847	829	943	470	488	439	8,090	3,087	22,076	8,226
Bugesera	909	898	4,551	-	777	14,090	5,344	2,651	6,199	10,935	14,214	11,592	9,039	684	685	559	355	449	400	8,277	4,524	24,616	11,219
National	1,254	1,152	4,212	1,265	527	14,836	7,453	6,777	7,831	12,329	17,455	11,422	9,495	789	720	904	575	480	430	9,607	5,640	12,048	4,404
SSF	1,201	1,152	2,272	1,263	527	14,842	7,454	6,710	7,831	12,331	17,470	11,424	9,495	786	715	904	576	480	425	9,663	5,681	10,933	4,392
LSF	4,071	1,107	4,236	1,625	789	3,006	4,194	15,972	-	8,580	8,329	6,095	12,768	2,040	2,050	1,576	272	135	650	4,927	3,812	30,548	5,053

Source: NISR, SAS 2023

Table 11: 2023 Season B 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	1,612	983	4,917	-	-	14,898	-	-	5,981	5,574	44,253	-	447	447	-	-	-	-	53,033	2,015
Kicukiro	-	-	3,433	-	-	-	-	-	12,056	6,514	64,639	-	697	697	-	-	-	-	-	6,326
Nyanza	-	-	2,745	-	-	-	8,041	-	10,574	3,100	9,617	20,399	-	-	-	-	-	-	5,538	-
Gisagara	4,084	-	3,361	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nyaruguru	-	-	-	911	-	-	17,679	-	10,744	11,078	11,049	4,177	1,500	-	1,500	-	-	1,416	1,525	-
Huye	2,000	-	3,250	-	6,665	-	-	-	10,314	10,314	-	-	-	-	-	-	-	371	24,252	-
Nyamagabe	2,759	-	-	2,000	-	-	15,419	-	-	-	-	-	46	-	46	424	-	-	-	-
Ruhango	1,902	-	4,721	-	22,120	-	-	-	-	-	-	-	1,571	1,571	-	-	-	-	-	-
Muhanga	-	-	2,095	1,315	-	-	14,500	-	-	-	-	-	-	-	-	-	-	-	-	-
Kamonyi	2,146	-	3,915	-	-	-	-	-	-	-	-	-	463	463	-	-	-	596	-	-
Karongi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rutsiro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubavu	3,130	-	-	-	-	-	11,351	-	6,481	6,504	2,496	-	445	-	445	198	-	-	-	-
Nyabihu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ngororero	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rusizi	-	-	5,102	-	5,495	-	-	-	-	-	-	-	714	714	-	-	-	-	-	2,985
Nyamasheke	-	-	4,675	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rulindo	1,714	4,487	3,635	2,065	-	-	29,157	-	-	-	-	-	2,497	-	2,497	-	-	-	1,171	-
Gakenke	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Musanze	-	-	-	1,585	-	-	13,656	-	-	-	-	-	-	-	-	-	-	-	-	-
Burera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gicumbi	-	-	-	1,604	-	-	3,769	-	-	-	-	-	-	-	-	-	-	-	9,136	-
Rwamagana	1,971	1,090	5,350	-	-	4,799	446	-	10,934	11,146	9,323	5,319	570	569	694	-	-	179	2,617	566
Nyagatare	1,747	1,995	4,393	-	-	3,973	3,244	-	12,089	11,306	28,335	-	853	853	-	-	-	369	1,964	4,372
Gatsibo	2,081	2,881	5,010	-	-	4,659	-	-	14,753	15,496	6,344	11,662	904	907	398	-	395	1,405	284	-
Kayanza	3,632	528	4,220	-	908	670	11,744	-	6,616	6,583	7,126	10,531	819	819	-	879	177	564	5,977	5,095
Kirehe	6,366	-	4,789	-	-	-	-	-	-	-	-	-	9,502	9,502	-	-	-	351	4,200	-
Ngoma	2,829	4,235	3,634	-	-	4,069	-	-	4,044	4,951	1,293	21,616	524	524	-	-	29	72	3,209	3,963
Bugesera	905	105	4,561	-	-	3,673	5,851	-	10,654	5,975	6,008	12,131	834	799	1,471	207	349	158	2,403	1,305
LSF	4,071	1,107	4,236	1,625	3,006	4,194	15,972	-	8,580	8,329	6,095	12,768	2,040	2,050	1,576	272	135	650	4,927	3,812

Source: NISR, SAS 2023

Table 12: 2023 Season B 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	406	288	-	-	-	2,320	849	112	632	7,717	2,445	843	4,429	1,031	1,000	32	-	9	118	879	65	805	1,499	16,730
Gasabo	1,517	3,946	1,261	-	-	5,295	7,612	1,309	119	16,724	6,363	5,701	4,660	2,919	2,595	323	26	116	240	9,611	0	4,721	164	55,579
Kicukiro	410	938	285	-	-	1,397	2,052	-	1,040	4,969	1,771	1,168	2,030	1,053	1,037	17	-	9	121	1,578	73	182	720	14,826
Nyanza	3,282	4,631	1,690	-	67	28,108	14,779	1,015	3,689	15,404	4,822	3,988	6,594	7,756	6,484	1,272	37	261	862	5,578	308	2,367	1,273	91,107
Gisagara	2,859	3,633	9,925	-	146	49,446	18,442	177	2,923	20,214	5,232	5,493	9,489	8,513	7,193	1,319	3	238	1,354	4,002	2,144	214	266	124,497
Nyaruguru	284	1,918	-	230	-	21,254	38,132	11,483	2,324	8,364	3,241	1,958	3,164	5,073	507	4,565	163	7	605	6,421	372	2,719	1,018	100,365
Huye	941	6,248	2,206	-	32	24,727	20,294	1,434	4,207	12,991	4,280	3,604	5,107	5,076	3,152	1,924	90	20	1,012	2,372	296	306	1,416	83,667
Nyamagabe	1,238	3,666	37	3,212	-	16,420	42,307	18,262	4,414	12,384	1,415	1,933	9,037	3,955	403	3,552	622	-	313	1,920	433	2,297	842	112,322
Ruhango	1,175	2,453	4,117	-	15	87,659	12,265	530	3,925	18,796	2,154	3,205	13,437	7,169	5,631	1,538	31	735	1,743	3,545	348	4,153	10,323	158,981
Muhanga	1,225	66	254	4	-	38,522	37,991	406	14,442	65,767	8,803	7,076	49,888	3,828	1,481	2,347	14	-	827	5,085	545	4,577	5,064	178,615
Kamonyi	2,260	3,277	750	-	-	26,004	21,734	1,544	8,545	48,583	9,401	7,283	31,899	5,559	4,714	845	25	399	1,678	4,170	5,687	3,778	1,335	135,327
Karongi	890	2,317	-	215	-	28,111	30,495	3,492	9,352	50,899	6,050	4,660	40,190	7,733	1,197	6,536	235	-	794	7,013	215	5,555	1,469	148,785
Rutsiro	1,601	61	-	364	-	12,376	18,949	17,166	6,328	30,837	7,343	10,042	13,451	3,763	422	3,341	305	-	594	1,484	1,622	3,799	11,461	110,709
Rubavu	2,595	288	-	-	-	2,815	5,716	51,390	758	13,297	5,067	1,832	6,398	3,936	381	3,555	228	28	357	26,206	353	18,488	6,593	133,049
Nyabihu	4,525	-	-	2,833	-	899	13,243	75,683	234	3,275	1,341	1,080	855	3,106	63	3,043	373	-	91	13,948	836	795	609	120,450
Ngororero	4,538	10	-	2,347	-	5,825	37,412	7,206	7,282	40,219	2,972	4,911	32,335	4,256	303	3,952	110	-	545	3,544	831	637	3,919	118,679
Rusizi	1,319	141	7,261	-	1	102,447	19,313	467	6,336	19,886	10,133	2,485	7,268	8,733	5,844	2,888	26	116	512	3,026	2,494	122	7,202	179,401
Nyamasheke	557	26	1,699	22	18	48,206	30,355	214	3,168	19,604	5,291	2,787	11,527	5,172	689	4,483	118	625	630	3,248	1,139	-	10,714	125,515
Rulindo	1,268	5,303	64	116	3	15,499	24,720	5,873	689	30,873	9,335	8,028	13,509	8,635	2,537	6,099	188	-	313	7,029	293	735	7,094	108,694
Gakenke	1,292	642	-	389	-	21,095	56,388	4,856	12,859	67,283	14,850	17,187	35,246	10,655	750	9,905	87	-	351	2,292	1,334	4,285	5,102	188,911
Musanze	4,303	1,299	-	2,185	-	295	18,347	46,524	1,449	7,232	3,891	1,509	1,832	8,846	235	8,611	326	-	4	8,443	1,153	60	8,164	108,629
Burera	2,718	10,118	-	1,056	-	397	28,551	32,704	86	8,727	5,675	617	2,435	13,494	250	13,244	604	-	-	10,415	593	2,659	37	112,158
Gicumbi	2,544	17,714	-	156	8	10,014	42,766	15,354	500	27,325	11,192	5,825	10,309	12,074	2,235	9,839	806	182	89	3,124	222	13,173	473	146,525
Rwamagana	3,967	11,620	2,626	-	198	30,750	10,380	3,294	664	63,935	48,600	6,865	8,470	6,798	6,631	167	171	606	303	8,453	390	3,568	3,726	151,448
Nyagatare	34,073	6,191	8,095	-	157	19,657	6,997	2,422	728	71,852	49,491	3,809	18,552	25,501	24,033	1,467	16	741	424	4,505	459	1,359	6,003	189,179
Gatsibo	12,885	9,506	8,331	-	111	13,525	18,248	7,755	2,605	90,232	56,147	11,118	22,968	12,809	10,825	1,983	46	1,548	1,170	5,555	1,204	247	5,210	190,988
Kayanza	9,456	15,046	7,654	-	206	47,225	9,224	6,906	2,044	58,793	46,722	4,793	7,278	13,639	13,329	310	36	666	275	7,051	1,079	245	5,965	185,510
Kirehe	6,125	14,362	4,477	-	62	30,618	9,448	4,558	3,309	90,902	65,806	4,130	20,966	15,520	9,896	5,625	117	391	559	1,982	192	304	3,841	186,767
Ngoma	1,655	8,255	3,110	-	555	24,611	7,771	3,783	226	98,881	70,149	4,889	23,843	14,660	12,192	2,468	12	432	687	2,768	1,206	8,463	6,882	183,958
Bugesera	5,706	5,464	6,099	-	67	21,172	15,406	756	1,789	63,413	23,885	10,447	29,081	12,934	12,859	75	8	1,378	717	6,283	199	11,831	4,250	157,472
National	117,613	139,425	69,940	13,129	1,646	736,686	620,185	326,677	106,665	1,089,377	493,865	149,266	446,246	244,194	138,870	105,324	4,822	8,509	17,288	171,530	26,084	102,445	122,632	3,918,845

Source: NISR, SAS 2023

Table 13: 2023 Season B Use of production by farmers (in percentage)

Crops	Sold	Own consumption	Wages for hired labour	Farm rent	Offered as gift	Barter trade/Exchanged with other things	Seeds	Fodder purpose	Stored	Post harvesting losses	Other usage
Maize	22.8	68.8	0.5	1.3	4.6	0.0	0.6	0.3	0.5	0.1	0.4
Sorghum	45.2	39.5	0.8	2.0	7.4	0.0	3.9	0.1	0.8	0.2	0.2
Paddy rice	79.6	18.7	0.1	0.0	0.4	0.0	0.5	0.0	0.0	0.6	0.1
Wheat	47.2	37.6	0.1	0.0	5.2	0.0	9.2	0.1	0.2	0.1	0.3
Other cereals	40.8	45.8	0.9	1.6	1.8	0.0	7.9	0.0	0.7	0.4	0.1
Sweet potato	23.5	68.0	1.1	0.8	4.6	0.0	0.0	1.9	0.0	0.0	0.1
Irish potato	40.8	42.6	0.5	0.2	3.6	0.0	12.1	0.0	0.0	0.1	0.1
Yam & Taro	23.2	67.9	0.4	0.6	4.4	0.0	3.3	0.0	0.0	0.0	0.2
Cassava	33.5	62.2	0.5	1.0	2.4	0.0	0.0	0.1	0.2	0.0	0.1
Bush bean	19.4	58.9	1.0	2.0	4.1	0.1	12.8	0.0	1.2	0.2	0.2
Climbing bean	13.8	61.9	0.7	0.5	6.5	0.1	15.2	0.0	1.0	0.1	0.3
Pea	32.1	54.2	0.0	0.2	2.6	0.0	10.7	0.1	0.2	0.0	0.0
Groundnut	27.1	55.1	0.2	0.6	2.7	0.0	13.8	0.0	0.3	0.0	0.1
Soybean	19.7	60.5	0.5	0.7	2.9	0.2	14.7	0.2	0.4	0.0	0.2
Cooking banana	36.7	58.7	0.7	0.2	3.1	0.0	0.0	0.0	0.0	0.0	0.4
Dessert banana	65.9	30.5	0.2	0.0	2.4	0.0	0.0	0.0	0.0	0.2	0.7
Banana for beer	77.4	16.2	0.1	0.1	5.0	0.0	0.0	0.0	0.0	0.9	0.3
Vegetables	82.4	13.3	0.1	0.0	2.9	0.0	0.3	0.0	0.0	0.7	0.2
Fruits	80.8	14.4	0.1	1.1	2.9	0.0	0.0	0.0	0.0	0.0	0.8
Fodder crops	4.2	0.0	0.4	0.0	0.8	0.5	0.0	93.6	0.0	0.0	0.4
Other crops	91.1	5.3	0.1	0.2	0.9	0.0	0.0	0.0	0.2	0.0	2.2

Source : NISR, SAS 2023

Table 14: 2023 Season B_Cultivated area by cropping system and district (Percentage)

District	Cropping system	
	Pure Cropping	Mixed Cropping
Nyarugenge	18.31	81.69
Gasabo	31.03	68.97
Kicukiro	23.97	76.03
Nyanza	31.90	68.10
Gisagara	31.21	68.79
Nyaruguru	47.39	52.61
Huye	21.12	78.88
Nyamagabe	50.39	49.61
Ruhango	34.82	65.18
Muhanga	26.49	73.51
Kamonyi	23.08	76.92
Karongi	44.28	55.72
Rutsiro	53.46	46.54
Rubavu	47.63	52.37
Nyabihu	53.26	46.74
Ngororero	33.57	66.43
Rusizi	36.93	63.07
Nyamasheke	39.67	60.33
Rulindo	35.61	64.39
Gakenke	32.28	67.72
Musanze	54.35	45.65
Burera	48.33	51.67
Gicumbi	40.00	60.00
Rwamagana	24.51	75.49
Nyagatare	23.61	76.39
Gatsibo	25.21	74.79
Kayonza	21.42	78.58
Kirehe	32.73	67.27
Ngoma	32.62	67.38
Bugesera	18.04	81.96
National	33.30	66.70
SSF	31.90	68.10
LSF	95.48	4.52

Source: NISR, SAS 2023

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

District	Before 01/01	Between 01-15/01	Between 16-31/01	Between 01-15/02	Between 16-28/02	Between 01- 15/03	Between 16-31/03	After 31/03	Total
Nyarugenge	0.1	3.7	1.8	10.9	24.3	16.5	1.5	0.7	100
Gasabo	3.2	8.8	2.9	10.7	20.2	14.8	7.0	3.2	100
Kicukiro	1.3	6.7	3.0	5.7	14.9	16.8	17.0	1.8	100
Nyanza	0.8	7.8	6.4	16.7	22.6	7.8	3.3	4.5	100
Gisagara	1.2	4.9	3.4	11.7	21.1	17.0	4.0	4.7	100
Nyaruguru	4.7	8.6	2.4	10.1	16.2	11.6	6.2	12.0	100
Huye	1.7	8.6	6.8	17.2	13.2	5.6	1.5	5.6	100
Nyamagabe	3.2	6.3	8.8	21.2	10.3	10.4	6.6	10.0	100
Ruhango	1.5	6.7	4.6	32.8	12.0	5.8	2.7	5.0	100
Muhanga	1.6	2.6	2.6	5.7	13.9	12.1	5.4	11.4	100
Kamonyi	1.0	6.7	3.5	17.4	18.8	10.6	2.1	7.1	100
Karongi	1.0	6.8	3.9	14.3	17.9	11.0	2.6	5.6	100
Rutsiro	3.2	2.8	1.9	13.4	13.6	10.0	2.9	7.5	100
Rubavu	1.5	8.2	4.1	14.0	7.0	14.2	14.7	8.1	100
Nyabihu	3.3	4.4	2.4	14.0	23.5	17.7	11.8	5.9	100
Ngororero	1.9	4.6	3.4	18.7	17.3	7.7	6.1	7.0	100
Rusizi	0.5	2.3	1.6	5.6	18.7	11.1	4.6	3.1	100
Nyamasheke	0.1	3.5	1.7	14.0	14.2	9.5	5.3	2.9	100
Rulindo	1.8	10.0	6.7	7.9	10.3	22.8	9.1	5.5	100
Gakenke	3.6	4.9	3.1	3.9	10.2	14.8	11.9	5.7	100
Musanze	3.0	5.2	1.7	9.2	7.4	22.9	13.7	14.2	100
Burera	1.5	9.3	5.8	15.1	12.9	16.4	14.4	8.1	100
Gicumbi	1.8	6.7	6.9	9.5	17.1	17.8	7.0	10.0	100
Rwamagana	1.6	7.3	3.7	13.1	18.0	11.1	2.5	2.9	100
Nyagatare	0.5	1.2	1.2	4.5	22.4	44.2	6.1	0.8	100
Gatsibo	0.8	2.6	2.5	4.6	13.2	28.7	4.9	1.1	100
Kayonza	3.2	6.4	1.7	8.6	17.2	26.9	5.2	1.6	100
Kirehe	0.9	5.8	4.9	12.5	20.1	12.5	2.5	0.3	100
Ngoma	0.8	5.6	2.2	5.9	22.5	17.9	2.1	1.8	100
Bugesera	0.8	3.6	2.0	4.7	12.0	35.8	8.7	3.1	100
National	1.7	5.8	3.8	12.1	15.7	15.8	5.9	5.7	100

Source: NISR, SAS 2023

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

Crops	Before 01/01	Between 01-15/01	Between 16-31/01	Between 01-15/02	Between 16-28/02	Between 01- 15/03	Between16- 31/03	After 31/03
Maize	0.8	3.1	5.3	19.8	31.3	30.8	7.2	1.59
Sorghum	5.9	45.6	25.9	15.9	4.7	1.6	0.5	0.09
Paddy rice	4.8	20.2	46.2	8.6	10.5	3.0	0.5	6.15
Wheat	1.8	0.3	1.3	2.2	4.3	25.1	31.2	33.84
Other cereals	0.0	0.0	2.0	19.6	40.5	29.7	8.3	0
Sweet potato	20.8	9.5	5.3	12.8	9.2	12.9	8.5	21.18
Irish potato	1.6	4.9	4.0	17.0	20.2	19.5	13.3	19.46
Taro & Yams	56.7	12.2	2.0	10.5	4.5	4.6	1.9	7.61
Cassava	1.4	4.6	2.2	7.7	6.3	4.9	2.5	5.62
Bush bean	0.0	0.5	1.3	19.6	34.8	35.4	7.4	1.03
Climbing bean	0.1	1.6	1.4	18.2	30.8	32.9	12.7	2.32
Pea	0.3	1.1	1.1	15.5	22.2	22.4	19.0	18.47
Groundnut	0.2	2.1	2.1	25.3	32.9	34.1	3.2	0
Soybean	0.0	1.3	4.1	24.8	34.8	25.7	8.1	1.3
Cooking banana	0.1	0.4	0.1	0.1	0.2	0.1	0.0	0.12
Dessert banana	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.35
Banana for beer	0.1	0.2	0.1	0.1	0.0	0.3	0.1	0
Vegetables	14.0	6.9	3.6	8.9	15.5	12.8	13.9	24.39
Fruits	0.0	3.9	1.5	0.0	0.0	2.8	0.0	2.38
Fodder crops	0.5	0.0	0.1	0.8	1.5	0.5	3.9	8.0
Other crops	1.1	0.5	0.9	2.2	0.3	1.3	0.4	1.0

Source: NISR, SAS 2023

Table 17: 2023 Season B 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	16.49	16.49	-	13.62	13.62	-	12.44	12.44	-
Gasabo	18.13	16.45	70.00	17.75	15.18	45.71	16.64	15.04	79.09
Kicukiro	31.11	31.07	33.33	28.38	28.70	16.67	31.25	31.99	6.62
Nyanza	27.38	26.75	71.43	25.12	24.72	50.00	26.26	25.13	84.49
Gisagara	18.90	17.32	66.67	16.64	15.23	66.67	23.14	14.67	93.62
Nyaruguru	8.28	7.01	50.00	8.50	6.81	44.44	7.90	7.26	62.54
Huye	13.67	11.41	85.71	12.43	10.29	58.33	12.66	10.43	92.33
Nyamagabe	9.32	8.70	100.00	9.23	7.69	81.82	8.26	7.98	98.54
Ruhango	12.55	10.48	85.71	10.66	8.63	73.68	10.50	8.10	95.80
Muhanga	13.44	12.86	75.00	10.78	10.30	60.00	10.45	10.00	94.11
Kamonyi	22.68	21.95	100.00	20.25	19.41	87.50	19.82	19.24	98.74
Karongi	14.79	14.57	100.00	12.90	12.53	100.00	12.74	12.68	100.00
Rutsiro	8.51	8.51	-	7.89	7.89		7.95	7.95	-
Rubavu	23.56	23.29	50.00	22.25	21.89	36.36	22.29	22.29	22.23
Nyabihu	28.38	28.38	-	25.06	25.06		24.46	24.46	-
Ngororero	29.31	29.31	-	26.58	26.58		27.35	27.35	-
Rusizi	6.64	5.91	40.00	5.95	5.32	33.33	10.59	6.26	85.07
Nyamasheke	14.75	13.88	55.56	13.33	12.53	55.56	14.24	13.44	67.56
Rulindo	16.31	15.55	80.00	15.85	14.05	73.33	13.75	13.54	73.53
Gakenke	8.84	8.84	-	7.88	7.88		8.02	8.02	-
Musanze	15.53	14.82	100.00	13.23	11.88	88.89	13.30	12.96	95.42
Burera	13.45	13.45	-	11.98	11.98		12.17	12.17	-
Gicumbi	12.01	11.71	100.00	11.06	10.40	100.00	10.08	10.01	100.00
Rwamagana	22.75	19.70	79.31	22.07	17.24	44.29	20.15	18.89	78.50
Nyagatare	60.24	57.92	94.59	56.04	52.50	76.11	57.71	56.34	94.86
Gatsibo	33.92	31.97	87.50	29.81	27.08	66.10	32.44	29.80	95.88
Kayanza	42.49	39.75	89.29	37.59	33.22	58.06	37.70	35.40	90.57
Kirehe	4.51	3.35	100.00	3.67	2.57	75.00	5.12	2.40	78.20
Ngoma	6.55	4.61	72.22	7.39	3.90	54.72	5.56	3.73	75.95
Bugesera	56.23	55.54	67.65	53.02	50.82	66.36	53.26	51.84	90.06
National	20.87	19.63	78.19	19.58	17.49	60.12	21.40	19.85	87.99

Source : NISR, SAS 2023

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

Crop	Traditional seeds	Improved seeds	Total
Maize	45.98	54.02	100
Sorghum	100.00	-	100
Paddy rice	95.59	4.41	100
Wheat	81.12	18.88	100
Other cereals	99.76	0.24	100
Sweet potato	99.92	0.08	100
Irish potato	97.07	2.93	100
Taro & Yams	100.00	-	100
Cassava	99.89	0.11	100
Bush bean	99.46	0.54	100
Climbing bean	99.56	0.44	100
Pea	100.00	-	100
Groundnut	100.00	-	100
Soybean	99.81	0.19	100
Cooking banana	99.95	0.05	100
Dessert banana	99.15	0.85	100
Banana for beer	99.57	0.43	100
Vegetables	61.64	38.36	100
Fruits	97.90	2.10	100
Fodder crops	99.79	0.21	100
Other crops	79.13	20.87	100
National	92.70	7.30	100

Source: NISR, SAS 2023

Table 19: 2023 Season B_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	-	-	44.44	22.22	33.33	-	-	100.00
Gasabo	16.67	10.00	46.67	3.33	16.67	6.67	-	100.00
Kicukiro	26.67	-	73.33	-	-	-	-	100.00
Nyanza	1.61	4.84	48.39	37.10	3.23	4.84	-	100.00
Gisagara	10.00	2.50	45.00	22.50	7.50	12.50	-	100.00
Nyaruguru	-	20.00	40.00	13.33	20.00	6.67	-	100.00
Huye	-	31.25	28.13	18.75	9.38	12.50	-	100.00
Nyamagabe	3.70	14.81	18.52	40.74	3.70	18.52	-	100.00
Ruhango	23.26	18.60	25.58	2.33	9.30	18.60	2.33	100.00
Muhanga	22.73	18.18	18.18	18.18	4.55	18.18	-	100.00
Kamonyi	27.78	9.26	29.63	24.07	9.26	-	-	100.00
Karongi	42.31	-	23.08	30.77	3.85	-	-	100.00
Rutsiro	36.84	-	42.11	15.79	5.26	-	-	100.00
Rubavu	1.69	3.39	88.14	5.08	1.69	-	-	100.00
Nyabihu	4.29	7.14	47.14	27.14	12.86	-	1.43	100.00
Ngororero	-	3.23	64.52	29.03	-	1.61	1.61	100.00
Rusizi	-	25.00	25.00	43.75	6.25	-	-	100.00
Nyamasheke	68.29	14.63	4.88	4.88	2.44	2.44	2.44	100.00
Rulindo	3.23	12.90	58.06	6.45	19.35	-	-	100.00
Gakenke	8.70	13.04	26.09	34.78	17.39	-	-	100.00
Musanze	10.20	8.16	30.61	8.16	34.69	6.12	2.04	100.00
Burera	6.25	6.25	34.38	12.50	15.63	12.50	12.50	100.00
Gicumbi	2.78	2.78	50.00	36.11	5.56	2.78	-	100.00
Rwamagana	5.17	18.97	18.97	27.59	12.07	10.34	6.90	100.00
Nyagatare	5.03	4.52	61.81	24.62	1.51	1.51	1.01	100.00
Gatsibo	2.97	6.93	33.66	48.51	1.98	1.98	3.96	100.00
Kayonza	2.53	16.46	36.71	40.51	1.27	2.53	-	100.00
Kirehe	20.00	6.67	6.67	40.00	-	26.67	-	100.00
Ngoma	34.78	4.35	4.35	17.39	17.39	21.74	-	100.00
Bugesera	0.72	2.16	38.85	41.01	6.47	10.79	-	100.00
National	9.53	8.34	41.63	26.35	7.29	5.54	1.33	100.00

Source: NISR, SAS 2023

Table 20: 2023 Season B_Percentage of crops by source of seeds

Crop	Government (MINAGRI/RAB/	Recognized seed multipliers	Agro dealers	NGOs/	Market	Agriculture cooperative	Other source	Total
Maize	1.74	1.94	50.77	38.25	4.64	2.14	0.52	100.00
Sorghum	-	-	-	100.00	-	-	-	100.00
Paddy rice	2.80	43.93	4.67	0.93	0.93	44.86	1.87	100.00
Wheat	15.63	3.13	54.69	12.50	6.25	7.81	-	100.00
Other cereals	-	-	-	60.00	-	-	40.00	100.00
Sweet potato	75.00	-	-	25.00	-	-	-	100.00
Irish potato	16.87	48.19	8.43	2.41	14.46	9.64	-	100.00
Cassava	33.33	44.44	-	-	-	22.22	-	100.00
Bush bean	48.15	18.52	11.11	18.52	-	3.70	-	100.00
Climbing bean	23.53	11.76	23.53	35.29	-	-	5.88	100.00
Pea	100.00	-	-	-	-	-	-	100.00
Soybean	21.74	17.39	21.74	13.04	17.39	4.35	4.35	100.00
Cooking banana	66.67	33.33	-	-	-	-	-	100.00
Dessert banana	23.08	64.10	2.56	5.13	2.56	-	2.56	100.00
Banana for beer	26.32	68.42	-	-	5.26	-	-	100.00
Vegetables	1.54	6.48	52.78	5.56	30.86	0.62	2.16	100.00
Fruits	26.09	52.17	8.70	-	4.35	8.70	-	100.00
Fodder crops	54.24	18.64	18.64	-	8.47	-	-	100.00
Other crops	71.43	12.86	1.90	3.81	2.38	5.71	1.90	100.00

Source: NISR, SAS 2023

Table 21: 2023 Season B 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	71.8	71.8	-	67.6	67.6	-	73.0	73.0	-
Gasabo	86.0	86.8	60.0	75.7	75.7	77.8	71.6	71.0	97.6
Kicukiro	60.6	59.9	100.0	76.4	76.4	50.0	70.6	72.9	24.9
Nyanza	85.4	85.2	100.0	61.8	61.8	80.0	64.0	63.3	98.9
Gisagara	80.7	81.6	53.3	65.6	65.6	100.0	66.8	64.2	100.0
Nyaruguru	93.2	93.0	100.0	84.2	84.2	94.4	84.6	84.4	99.4
Huye	93.5	93.3	100.0	65.7	65.7	75.0	67.4	66.6	95.3
Nyamagabe	96.1	96.1	100.0	83.2	83.2	90.9	81.8	81.7	98.7
Ruhango	85.9	85.9	85.7	68.9	68.9	76.5	67.8	66.8	99.3
Muhanga	95.5	95.5	100.0	70.5	70.5	100.0	69.3	69.1	100.0
Kamonyi	83.2	83.0	100.0	67.7	67.7	100.0	68.5	68.2	100.0
Karongi	94.0	94.0	100.0	73.7	73.7	100.0	73.8	73.8	100.0
Rutsiro	89.4	89.4	-	70.9	70.9	-	71.8	71.8	-
Rubavu	83.0	83.0	75.0	49.5	49.5	44.4	50.9	50.9	43.3
Nyabihu	94.6	94.6	-	67.0	67.0	-	73.5	73.5	-
Ngororero	97.0	97.0	-	81.7	81.7	-	85.2	85.2	-
Rusizi	77.5	78.8	20.0	74.8	74.8	100.0	69.9	69.9	100.0
Nyamasheke	97.0	97.2	88.9	75.6	75.6	100.0	74.7	74.4	100.0
Rulindo	95.3	95.7	60.0	90.1	90.1	90.9	89.3	89.3	94.4
Gakenke	98.4	98.4	-	73.7	73.7	-	74.1	74.1	-
Musanze	91.9	91.9	100.0	70.0	70.0	44.4	69.8	69.8	54.5
Burera	93.4	93.4	-	77.6	77.6	-	73.5	73.5	-
Gicumbi	94.4	94.4	100.0	83.9	83.9	100.0	84.1	84.1	100.0
Rwamagana	77.1	76.0	96.6	56.4	56.4	60.1	58.9	58.1	86.6
Nyagatare	63.8	65.6	37.8	60.9	60.9	81.1	59.6	59.4	90.7
Gatsibo	86.5	87.3	66.7	73.1	73.1	92.3	76.4	75.9	98.6
Kayonza	68.4	69.0	57.1	52.1	52.1	64.0	52.4	52.5	48.3
Kirehe	64.2	64.5	37.5	52.9	52.9	71.4	53.9	52.7	92.0
Ngoma	52.2	51.3	83.3	50.3	50.3	66.7	58.1	56.6	95.8
Bugesera	65.8	66.1	61.8	57.3	57.3	91.5	60.5	58.6	99.5
National	83.4	83.7	69.8	71.7	71.7	75.1	69.7	69.3	94.4

Source : NISR, SAS 2023

Table 22: 2023 Season B 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	20.5	20.5	-	5.5	5.5	-	7.4	7.4	-
Gasabo	37.7	37.3	50.0	16.1	16.1	17.1	19.8	18.3	76.2
Kicukiro	45.6	44.6	100.0	26.3	26.3	33.3	40.2	38.7	90.1
Nyanza	40.4	39.7	85.7	12.0	12.0	60.0	17.3	15.8	98.6
Gisagara	39.9	37.9	100.0	16.9	16.9	100.0	25.8	16.9	100.0
Nyaruguru	66.9	65.9	100.0	43.6	43.6	88.9	51.8	51.3	99.1
Huye	49.2	47.7	100.0	18.6	18.6	58.3	23.4	21.3	98.1
Nyamagabe	57.7	57.4	100.0	25.0	25.0	90.9	31.9	31.6	98.7
Ruhango	19.4	17.3	92.9	5.3	5.3	84.2	11.4	9.0	98.4
Muhanga	46.2	45.7	100.0	16.2	16.2	100.0	17.7	17.3	100.0
Kamonyi	22.7	22.1	80.0	9.0	9.0	50.0	10.6	10.0	93.1
Karongi	55.4	55.5	0.0	27.7	27.7	0.0	28.9	28.9	0.0
Rutsiro	56.2	56.2	-	28.5	28.5	-	36.8	36.8	-
Rubavu	66.4	66.6	50.0	37.6	37.6	18.2	48.5	48.6	13.3
Nyabihu	87.3	87.3	-	56.0	56.0	-	66.3	66.3	-
Ngororero	63.2	63.2	-	34.1	34.1	-	38.3	38.3	-
Rusizi	51.0	50.1	90.0	24.9	24.9	91.7	32.5	29.3	88.5
Nyamasheke	76.3	76.0	88.9	42.6	42.6	88.9	46.8	46.0	98.3
Rulindo	61.0	60.5	100.0	32.3	32.3	93.3	36.7	36.5	99.6
Gakenke	85.3	85.3	-	42.6	42.6	-	45.1	45.1	-
Musanze	77.4	77.2	100.0	42.9	42.9	66.7	49.9	49.7	89.9
Burera	67.1	67.1	-	35.7	35.7	-	41.4	41.4	-
Gicumbi	40.1	39.9	100.0	24.3	24.3	60.0	22.7	22.6	87.2
Rwamagana	46.0	44.8	69.0	19.2	19.2	37.1	26.2	25.1	76.6
Nyagatare	68.9	67.4	91.9	41.5	41.5	69.0	55.7	54.2	95.5
Gatsibo	49.1	47.7	87.5	21.2	21.2	67.8	32.5	30.0	92.0
Kayonza	47.6	45.4	85.7	21.1	21.1	40.3	31.3	28.8	88.2
Kirehe	33.5	32.9	87.5	17.2	17.2	83.3	22.6	19.8	98.1
Ngoma	30.0	28.1	94.4	8.4	8.4	37.7	13.0	11.0	88.6
Bugesera	47.8	47.0	61.8	26.3	26.3	49.1	32.9	31.0	81.3
National	51.6	50.9	84.2	26.2	26.2	53.6	32.2	30.8	92.4

Source: NISR, SAS 2023

Table 23: 2023 Season B_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	-	65.0	15.0	15.0	-	5.0	100
Gasabo	3.3	90.9	0.8	0.8	1.7	-	100
Kicukiro	22.0	70.7	1.2	-	4.9	1.2	100
Nyanza	14.6	37.2	39.2	-	8.0	0.5	100
Gisagara	-	43.1	36.7	8.0	11.2	0.5	100
Nyaruguru	1.8	39.4	56.2	0.4	0.9	0.9	100
Huye	4.9	40.5	35.2	7.5	10.6	-	100
Nyamagabe	4.3	37.4	50.4	4.7	3.2	-	100
Ruhango	6.1	57.6	13.1	3.0	17.2	1.0	100
Muhanga	5.6	8.2	66.3	11.7	2.0	2.0	100
Kamonyi	6.7	28.3	50.0	6.7	7.5	0.8	100
Karongi	3.2	37.1	54.3	1.8	1.4	0.5	100
Rutsiro	0.5	64.9	33.0	0.5	1.1	-	100
Rubavu	0.4	88.7	10.9	-	-	-	100
Nyabihu	-	77.7	21.4	0.9	-	-	100
Ngororero	0.7	53.9	36.5	6.1	1.4	-	100
Rusizi	0.4	23.5	68.1	5.5	2.5	-	100
Nyamasheke	6.0	18.7	74.0	0.3	0.3	-	100
Rulindo	0.4	74.4	14.3	10.5	0.4	-	100
Gakenke	1.6	19.7	49.4	7.3	0.4	0.4	100
Musanze	0.5	53.2	20.6	13.4	-	-	100
Burera	-	74.0	19.2	0.3	4.8	-	100
Gicumbi	0.4	57.4	36.3	0.8	1.3	1.3	100
Rwamagana	0.8	32.2	44.1	8.8	13.4	0.8	100
Nyagatare	0.5	70.8	25.5	1.2	1.7	0.3	100
Gatsibo	7.8	31.9	47.5	5.7	3.6	-	100
Kayanza	2.5	43.2	45.6	2.9	3.7	0.4	100
Kirehe	4.9	27.4	52.5	10.3	4.0	-	100
Ngoma	6.9	27.1	43.6	3.7	18.6	-	100
Bugesera	0.7	49.7	38.4	5.3	5.6	0.4	100
National	2.9	47.0	38.5	4.7	3.7	0.3	100

Source: NISR, SAS 2023

Table 24: 2023 Season B_ 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	1.44	67.60	20.81	5.26	3.10	0.29	100
NPK 20-10-10	62.03	10.13	7.59	-	16.46	-	100
NPK 25-5-5	42.31	23.08	7.69	-	15.38	-	100
NPK 22-6-12	66.67	4.76	-	4.76	9.52	-	100
Other NPK	3.57	89.29	3.57	1.79	1.79	-	100
Urea	1.27	49.92	39.21	5.08	2.93	0.54	100
liquid urea (Mbonea M)	-	77.36	16.98	5.66	-	-	100
DAP	1.34	45.01	44.08	4.03	1.88	0.47	100
KCL/MOP	-	66.67	16.67	-	16.67	-	100
Omax	-	75.00	17.86	7.14	-	-	100
Winner	-	83.33	-	16.67	-	-	100
Yara Viva	-	50.00	-	16.67	25.00	-	100
Amidas	4.17	66.67	8.33	-	20.83	-	100
Cereal	2.33	74.42	2.33	2.33	18.60	-	100
Boaster	-	50.00	50.00	-	-	-	100
DI Grow	-	66.67	7.41	3.70	18.52	-	100
Other type of fertilizer	-	71.74	18.48	6.52	2.17	-	100
Total	2.29	51.50	36.22	4.57	2.90	0.42	100
NPK 17-17-17	1.44	67.60	20.81	5.26	3.10	0.29	100

Source: NISR, SAS 2023

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

District	NPK	Urea	DAP	KCL/MOP	Lime	Others	Total
Nyarugenge	4.2	54.2	41.7	-	-	4.2	100
Gasabo	19.6	44.9	32.7	-	2.8	19.6	100
Kicukiro	6.3	45.5	47.3	-	0.9	6.3	100
Nyanza	20.0	39.4	38.2	-	1.8	20.0	100
Gisagara	19.7	37.7	37.2	-	5.5	19.7	100
Nyaruguru	14.8	24.2	51.5	-	-	14.8	100
Huye	19.7	47.2	30.9	-	2.3	19.7	100
Nyamagabe	25.8	31.8	35.2	-	2.3	25.8	100
Ruhango	28.1	42.1	28.1	0.9	0.9	28.1	100
Muhanga	10.3	37.2	51.7	-	-	10.3	100
Kamonyi	26.3	40.4	31.3	-	2.0	26.3	100
Karongi	17.1	27.8	54.6	-	0.6	17.1	100
Rutsiro	36.5	20.3	34.9	-	-	36.5	100
Rubavu	52.8	20.3	21.9	-	4.7	52.8	100
Nyabihu	42.8	26.7	21.9	-	8.6	42.8	100
Ngororero	14.8	36.0	48.2	-	0.7	14.8	100
Rusizi	15.7	24.0	58.1	-	2.2	15.7	100
Nyamasheke	14.4	22.9	49.4	-	0.6	14.4	100
Rulindo	22.9	41.2	32.4	-	2.5	22.9	100
Gakenke	7.7	24.0	67.8	-	0.5	7.7	100
Musanze	40.1	19.5	33.4	-	6.4	40.1	100
Burera	32.9	25.0	36.8	-	5.4	32.9	100
Gicumbi	21.1	34.2	43.2	-	1.5	21.1	100
Rwamagana	17.8	41.7	39.8	-	0.6	17.8	100
Nyagatare	3.4	47.9	45.0	0.5	3.2	3.4	100
Gatsibo	15.7	42.3	40.5	-	1.6	15.7	100
Kayonza	14.0	44.5	39.0	-	2.6	14.0	100
Kirehe	9.4	33.6	52.8	-	4.2	9.4	100
Ngoma	16.4	44.5	32.2	0.7	5.5	16.4	100
Bugesera	12.5	37.6	48.7	-	1.0	12.5	100
National	19.9	34.3	41.6	0.1	2.6	19.9	100

Source: NISR, SAS 2023

Table 26: 2023 Season B 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	21.0	21.0	-	31.8	31.8	-	40.1	40.1	-
Gasabo	29.6	28.0	80.0	48.8	48.8	43.8	51.6	48.2	87.3
Kicukiro	20.6	19.2	100.0	66.8	66.8	20.0	80.0	79.4	87.2
Nyanza	36.5	35.6	100.0	32.4	32.4	80.0	34.9	31.3	98.9
Gisagara	20.4	17.8	100.0	46.5	46.5	100.0	66.4	41.5	100.0
Nyaruguru	26.9	26.2	50.0	44.0	44.0	66.7	45.2	44.5	71.0
Huye	31.0	29.1	92.9	26.4	26.4	100.0	35.4	29.6	100.0
Nyamagabe	30.9	30.4	100.0	41.3	41.3	100.0	49.3	48.9	100.0
Ruhango	14.3	12.5	78.6	48.0	48.0	90.9	61.2	52.9	97.8
Muhanga	27.4	26.7	100.0	33.1	33.1	80.0	36.2	35.0	97.7
Kamonyi	21.0	20.2	100.0	42.3	42.3	100.0	42.0	39.8	100.0
Karongi	26.6	26.4	100.0	41.0	41.0	100.0	43.6	43.5	100.0
Rutsiro	26.8	26.8	-	53.3	53.3	-	62.0	62.0	-
Rubavu	63.7	63.5	75.0	62.4	62.4	44.4	75.0	75.1	43.8
Nyabihu	76.2	76.2	-	65.1	65.1	-	73.8	73.8	-
Ngororero	25.0	25.0	-	45.0	45.0	-	58.2	58.2	-
Rusizi	13.5	12.0	80.0	62.7	62.7	100.0	76.7	66.1	100.0
Nyamasheke	12.7	11.1	88.9	44.1	44.1	100.0	59.3	54.1	100.0
Rulindo	30.5	29.7	100.0	57.4	57.3	100.0	63.6	63.3	100.0
Gakenke	39.9	39.9	-	28.8	28.8	-	38.3	38.3	-
Musanze	81.4	81.2	100.0	56.5	56.5	55.6	60.9	60.8	75.6
Burera	55.4	55.4	-	49.9	49.9	-	53.1	53.1	-
Gicumbi	27.1	26.8	100.0	48.2	48.2	100.0	47.8	47.7	100.0
Rwamagana	33.0	30.5	79.3	38.8	38.8	50.4	47.2	44.9	84.6
Nyagatare	20.3	16.0	83.8	53.6	53.6	80.3	72.5	66.6	98.1
Gatsibo	20.8	19.4	58.3	39.6	39.6	74.1	53.5	45.3	98.7
Kayonza	25.7	22.0	89.3	42.1	42.1	43.7	56.6	50.5	90.8
Kirehe	11.7	10.8	87.5	50.9	50.9	90.0	62.6	50.7	99.9
Ngoma	18.5	16.8	77.8	23.3	23.3	52.6	35.3	27.2	95.3
Bugesera	19.5	17.3	55.9	40.3	40.3	86.4	58.4	50.5	99.8
National	29.7	28.6	79.9	45.7	45.7	66.1	54.7	51.3	97.0

Source : NISR, SAS 202

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

District	Type of pesticides								Total
	Dithane	Ridomil	Dimethoate	Cypermethrin	Dursiban	Rocket	Beam	Other	
Nyarugenge	24.2	-	12.1	6.1	-	39.4	-	18.2	100.0
Gasabo	23.2	3.2	6.3	9.5	-	44.2	3.2	10.5	100.0
Kicukiro	13.6	-	6.8	13.6	-	50.0	2.3	13.6	100.0
Nyanza	10.6	1.1	-	14.9	-	61.7	5.3	6.4	100.0
Gisagara	9.9	-	5.5	19.8	-	44.0	12.1	8.8	100.0
Nyaruguru	38.7	-	3.2	9.7	-	25.8	-	22.6	100.0
Huye	11.1	-	1.4	25.0	-	45.8	12.5	4.2	100.0
Nyamagabe	32.8	1.6	0.8	26.2	-	35.3	-	3.3	100.0
Ruhango	12.3	4.6	3.1	7.7	-	56.9	9.2	6.2	100.0
Muhanga	8.6	1.7	5.2	15.5	1.7	63.8	3.5	-	100.0
Kamonyi	23.3	1.2	5.8	7.0	-	50.0	1.2	11.6	100.0
Karongi	19.1	4.4	5.9	27.9	-	38.2	-	4.4	100.0
Rutsiro	65.9	9.1	2.3	6.8	-	10.2	-	5.7	100.0
Rubavu	33.2	21.9	13.7	22.4	-	7.5	-	1.2	100.0
Nyabihu	33.4	18.5	15.5	16.3	-	6.6	-	9.8	100.0
Ngororero	36.1	4.8	2.4	4.8	-	47.0	-	4.8	100.0
Rusizi	12.3	-	12.3	35.4	-	16.9	4.6	16.9	100.0
Nyamasheke	9.8	5.9	5.9	47.1	-	11.8	5.9	13.7	100.0
Rulindo	33.1	3.7	4.4	3.7	-	44.1	0.7	10.3	100.0
Gakenke	10.2	6.8	0.9	37.3	-	36.4	-	8.5	100.0
Musanze	37.7	7.1	13.6	17.3	-	16.9	-	7.4	100.0
Burera	38.1	4.9	4.5	27.2	0.4	17.0	-	7.9	100.0
Gicumbi	44.7	1.8	-	5.3	-	40.4	-	7.9	100.0
Rwamagana	18.3	1.7	12.6	6.1	-	41.3	3.9	16.1	100.0
Nyagatare	9.4	0.6	10.5	12.2	-	39.2	4.4	23.8	100.0
Gatsibo	12.1	0.9	2.6	15.5	0.9	49.1	3.5	15.5	100.0
Kayonza	16.3	0.6	8.1	13.8	-	40.0	6.9	14.4	100.0
Kirehe	24.3	2.9	5.7	18.6	-	32.9	5.7	10.0	100.0
Ngoma	22.1	1.0	10.6	15.4	-	22.1	5.8	23.1	100.0
Bugesera	11.8	-	8.2	14.7	-	43.5	8.2	13.5	100.0
National	26.9	7.4	8.8	17.1	0.1	27.8	2.3	9.6	100.0

Source: NISR, SAS 2023

Table 28: 2023 Season B 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	77.4	77.4	-	-	-	-	6.2	6.2	-	42.4	42.4	-
Gasabo	94.4	94.2	100.0	1.9	0.6	40.0	8.1	6.8	50.0	46.6	46.1	63.6
Kicukiro	42.8	42.4	66.7	0.6	-	33.3	8.9	7.9	66.7	44.9	44.6	66.7
Nyanza	95.1	95.1	100.0	-	-	-	15.4	14.2	100.0	32.1	32.0	37.5
Gisagara	92.6	93.0	80.0	0.2	0.2	-	22.1	20.6	66.7	42.0	43.5	-
Nyaruguru	97.9	97.9	100.0	0.3	-	10.0	10.4	8.5	70.0	33.5	32.3	80.0
Huye	96.5	96.4	100.0	0.2	0.2	-	28.6	26.4	100.0	41.4	41.5	40.0
Nyamagabe	97.1	97.0	100.0	0.2	0.2	-	10.2	10.3	-	33.5	33.1	100.0
Ruhango	86.3	85.9	100.0	-	-	-	8.2	6.5	71.4	17.8	17.8	20.0
Muhanga	88.9	88.8	100.0	-	-	-	11.1	10.5	75.0	37.7	36.9	87.5
Kamonyi	94.3	94.3	100.0	0.2	0.2	-	7.9	7.4	60.0	29.8	30.2	-
Karongi	97.0	97.0	100.0	-	-	-	10.8	10.6	100.0	37.2	37.1	100.0
Rutsiro	91.5	91.5	-	-	-	-	0.3	0.3	-	42.0	42.0	-
Rubavu	96.0	96.2	75.0	-	-	-	0.3	0.3	-	42.9	42.3	100.0
Nyabihu	96.8	96.8	-	-	-	-	1.1	1.1	-	51.5	51.5	-
Ngororero	98.3	98.3	-	0.4	0.4	-	6.5	6.5	-	45.5	45.5	-
Rusizi	79.2	79.0	90.0	-	-	-	1.7	0.9	40.0	50.6	51.0	30.0
Nyamasheke	97.7	97.7	100.0	-	-	-	4.4	3.1	66.7	46.6	46.8	33.3
Rulindo	97.2	97.1	100.0	1.0	0.7	20.0	15.8	15.6	40.0	46.9	46.7	60.0
Gakenke	99.3	99.3	-	0.2	0.2	-	2.8	2.8	-	35.0	35.0	-
Musanze	91.1	91.0	100.0	0.2	-	25.0	2.9	2.9	-	30.7	30.2	100.0
Burera	94.6	94.6	-	-	-	-	2.0	2.0	-	35.2	35.2	-
Gicumbi	97.1	97.1	100.0	0.2	0.2	-	5.3	5.3	-	22.1	21.8	100.0
Rwamagana	93.7	93.5	96.6	0.4	0.4	-	15.7	13.0	65.5	52.4	51.5	72.4
Nyagatare	84.0	83.4	91.9	6.8	3.6	54.1	9.2	4.9	73.0	42.2	43.1	28.6
Gatsibo	97.4	97.3	100.0	2.8	1.2	45.8	11.6	10.0	54.2	52.5	51.6	76.0
Kayanza	85.8	85.4	92.9	2.2	-	39.3	18.4	14.2	89.3	43.8	44.2	36.7
Kirehe	87.8	87.7	100.0	0.3	-	25.0	4.5	3.7	75.0	42.0	42.2	25.0
Ngoma	90.4	90.1	100.0	0.8	0.3	16.7	11.3	9.5	72.2	45.3	45.7	33.3
Bugesera	78.6	78.6	79.4	0.7	0.2	8.8	17.7	15.9	47.1	49.3	48.9	56.4
National	91.6	91.5	93.6	0.7	0.3	19.5	9.6	8.4	64.8	40.3	40.2	46.8

Source : NISR, SAS 2023

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

District	Modern irrigation					Traditional techniques
	Surface irrigation	Flood irrigation	Drip irrigation	Sprinkler irrigation	Pivot irrigation	
Nyarugenge	16.7	-	-	-	-	83.3
Gasabo	-	17.7	-	-	-	82.4
Kicukiro	41.7	-	-	-	-	58.3
Nyanza	44.0	20.0	-	-	-	36.0
Gisagara	12.9	41.9	-	3.2	-	41.9
Nyaruguru	5.3	-	-	5.3	-	89.5
Huye	-	60.9	-	-	-	39.1
Nyamagabe	55.6	-	-	-	-	44.4
Ruhango	24.0	28.0	-	-	-	48.0
Muhanga	-	27.3	-	-	-	72.7
Kamonyi	22.7	9.1	-	-	-	68.2
Karongi	33.3	-	16.7	-	-	50.0
Nyabihu	-	-	-	-	-	100.0
Ngororero	50.0	-	-	-	-	50.0
Rusizi	-	80.0	-	-	-	20.0
Nyamasheke	14.3	85.7	-	-	-	-
Rulindo	9.1	-	9.1	4.6	-	77.3
Gakenke	-	-	-	-	-	100.0
Musanze	-	-	-	-	-	100.0
Burera	50.0	-	-	-	-	50.0
Gicumbi	-	-	-	-	-	100.0
Rwamagana	1.5	12.3	21.5	9.2	-	55.4
Nyagatare	57.9	12.3	-	-	14.0	15.8
Gatsibo	-	18.2	-	-	3.0	78.8
Kayonza	51.4	16.2	-	5.4	2.7	24.3
Kirehe	21.1	26.3	-	-	31.6	21.1
Ngoma	20.0	32.0	4.0	-	-	44.0
Bugesera	39.7	36.2	3.5	3.5	3.5	13.8
National	24.8	20.5	3.3	2.5	3.2	45.7

Source: NISR, SAS 2023

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

District	Source of water used				
	Rainwater	Water treatment	Underground	Lake / streams	Water catchment
Nyarugenge	-	16.7	50.0	16.7	16.7
Gasabo	-	-	35.3	58.8	5.9
Kicukiro	-	7.7	30.8	53.9	7.7
Nyanza	-	-	56.0	28.0	16.0
Gisagara	6.3	6.3	43.8	43.8	-
Nyaruguru	-	-	5.3	94.7	-
Huye	-	4.2	33.3	54.2	8.3
Nyamagabe	-	-	-	100.0	-
Ruhango	-	3.3	40.0	53.3	3.3
Muhanga	-	-	63.6	18.2	18.2
Kamonyi	4.4	-	26.1	56.5	13.0
Karongi	-	14.3	14.3	71.4	-
Nyabihu	50.0	-	50.0	-	-
Rusizi	-	-	25.0	75.0	-
Nyamasheke	-	-	20.0	80.0	-
Rulindo	-	11.1	22.2	33.3	33.3
Gakenke	-	13.6	27.3	54.6	4.6
Musanze	-	-	40.0	60.0	-
Burera	-	-	16.7	66.7	16.7
Ngororero	-	-	50.0	50.0	-
Gicumbi	-	14.3	35.7	42.9	-
Rwamagana	-	17.1	26.3	42.1	14.5
Nyagatare	4.5	-	14.9	43.3	37.3
Gatsibo	2.9	2.9	35.3	41.2	17.7
Kayonza	1.3	1.3	27.6	35.5	34.2
Kirehe	-	-	20.0	65.0	15.0
Ngoma	-	12.0	32.0	48.0	8.0
Bugesera	1.5	4.4	19.1	58.8	16.2
National	1.5	5.2	28.3	48.9	16.0

Source: NISR, SAS 2023

Table 31: 2023 Season B 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	9.8	6.4	-	19.8	60.0	-	3.3	-	-	9.8
Gasabo	0.4	5.4	0.6	3.4	74.9	1.0	-	0.4	-	0.4
Kicukiro	-	20.2	0.8	13.6	20.5	5.1	9.8	21.3	-	-
Nyanza	8.4	3.1	3.0	1.9	63.3	0.0	1.1	7.8	-	8.4
Gisagara	20.0	1.2	1.7	3.6	45.6	0.2	0.7	2.8	-	20.0
Nyaruguru	6.1	6.7	3.5	14.3	56.0	-	0.6	2.1	0.2	6.1
Huye	8.8	8.1	1.6	20.4	47.1	0.0	1.8	0.5	0.0	8.8
Nyamagabe	2.0	9.8	9.5	6.2	60.2	0.4	1.0	2.5	-	2.0
Ruhango	12.0	12.1	1.0	2.3	60.5	0.0	0.3	1.3	-	12.0
Muhanga	3.2	1.7	3.3	13.8	64.9	0.0	3.1	2.4	0.4	3.2
Kamonyi	4.9	1.3	0.1	5.4	68.7	0.2	6.2	2.4	-	4.9
Karongi	1.4	8.4	4.7	2.1	72.3	-	0.8	0.1	0.2	1.4
Rutsiro	4.8	2.6	5.9	5.8	62.9	-	5.4	0.1	-	4.8
Rubavu	0.2	15.6	7.4	0.9	29.7	-	0.7	44.5	0.4	0.2
Nyabihu	3.6	5.7	12.2	6.3	58.6	-	-	13.2	0.4	3.6
Ngororero	4.4	2.5	7.1	5.9	73.9	-	1.9	0.4	0.3	4.4
Rusizi	2.1	18.8	0.1	9.9	55.9	0.1	6.1	3.1	0.6	2.1
Nyamasheke	3.6	14.6	4.0	7.2	60.3	0.1	5.6	0.6	-	3.6
Rulindo	5.5	1.3	6.2	25.8	50.6	0.6	0.7	2.4	-	5.5
Gakenke	6.3	6.4	4.1	6.0	61.2	-	2.9	0.7	0.1	6.3
Musanze	2.6	11.3	5.4	2.1	28.2	-	2.1	43.3	-	2.6
Burera	1.0	1.8	2.5	12.5	61.7	0.0	0.1	18.7	-	1.0
Gicumbi	1.6	1.5	8.1	17.9	64.5	0.1	0.9	0.6	-	1.6
Rwamagana	1.8	8.6	0.8	8.7	73.4	0.0	2.7	2.9	0.0	1.8
Nyagatare	1.5	16.5	1.3	24.1	42.9	1.2	4.4	1.7	-	1.5
Gatsibo	5.7	13.9	1.8	3.0	61.9	0.0	5.9	0.9	0.2	5.7
Kayonza	4.2	13.3	9.5	1.7	45.5	0.0	5.1	4.2	3.3	4.2
Kirehe	4.8	6.2	0.6	5.7	71.9	0.4	5.9	-	0.5	4.8
Ngoma	2.0	5.9	5.5	0.9	76.5	0.2	6.5	2.5	0.1	2.0
Bugesera	4.7	22.7	2.0	28.9	26.2	3.6	4.8	1.6	-	4.7
National	4.6	7.2	4.5	9.2	58.9	0.2	2.4	5.0	0.2	4.6

Source: NISR, SAS 2023

Table 32: 2023 Season B_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	0.3	12.4	21.9	65.4
Gasabo	0.5	19.0	28.5	52.0
Kicukiro	-	0.2	7.4	92.4
Nyanza	0.3	39.0	29.2	31.5
Gisagara	-	7.2	49.4	43.5
Nyaruguru	2.5	25.3	59.2	12.9
Huye	1.8	8.0	52.9	37.3
Nyamagabe	3.3	15.8	49.3	31.6
Ruhango	3.1	6.9	16.7	73.3
Muhanga	3.3	5.2	15.8	75.7
Kamonyi	0.5	8.8	54.8	35.9
Karongi	11.2	26.2	44.2	18.5
Rutsiro	11.4	21.4	32.5	34.7
Rubavu	11.7	23.6	13.7	51.0
Nyabihu	8.0	22.9	50.5	18.6
Ngororero	16.3	16.7	42.8	24.2
Rusizi	5.0	22.4	43.6	29.1
Nyamasheke	4.2	13.9	8.2	73.6
Rulindo	1.8	7.1	51.6	39.5
Gakenke	3.3	16.7	48.8	31.3
Musanze	6.5	6.8	16.2	70.5
Burera	12.6	8.0	52.4	27.0
Gicumbi	3.6	56.0	27.9	12.5
Rwamagana	-	2.4	58.2	39.5
Nyagatare	0.2	9.0	18.2	72.5
Gatsibo	0.7	4.1	67.5	27.7
Kayonza	0.6	5.5	4.4	89.5
Kirehe	0.1	1.5	15.4	83.1
Ngoma	0.1	2.6	48.4	48.9
Bugesera	-	8.9	40.8	50.3
National	4.1	15.3	38.5	42.1

Source: NISR, SAS 2023

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