



The Republic of Rwanda



SEASONAL AGRICULTURAL SURVEY

SEASON B 2022 REPORT

August 2022

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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 agriculture information mainly related to potential agricultural land use; crop area, crop yield and production; agricultural inputs and practices as well as other agricultural statistics.

The survey data are supplemented by administrative records collected by the National Agricultural Export Development Board (NAEB) through routine activities of monitoring coffee and tea production. Other agriculture data is obtained from MINAGRI and Rwanda Agriculture and Animal Resources development Board (RAB), district agronomists, and other partners working in the agriculture sector, including total quantity of agricultural inputs used, total agricultural exports, crop varieties grown, crop intensification program among others. 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 2022 season B related to:

1. Land use:
 - Agricultural land: includes land already used for farming and land that can be brought back into cultivation (fallow or pasture land). Agricultural land indicates land potential for agriculture.
 - 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

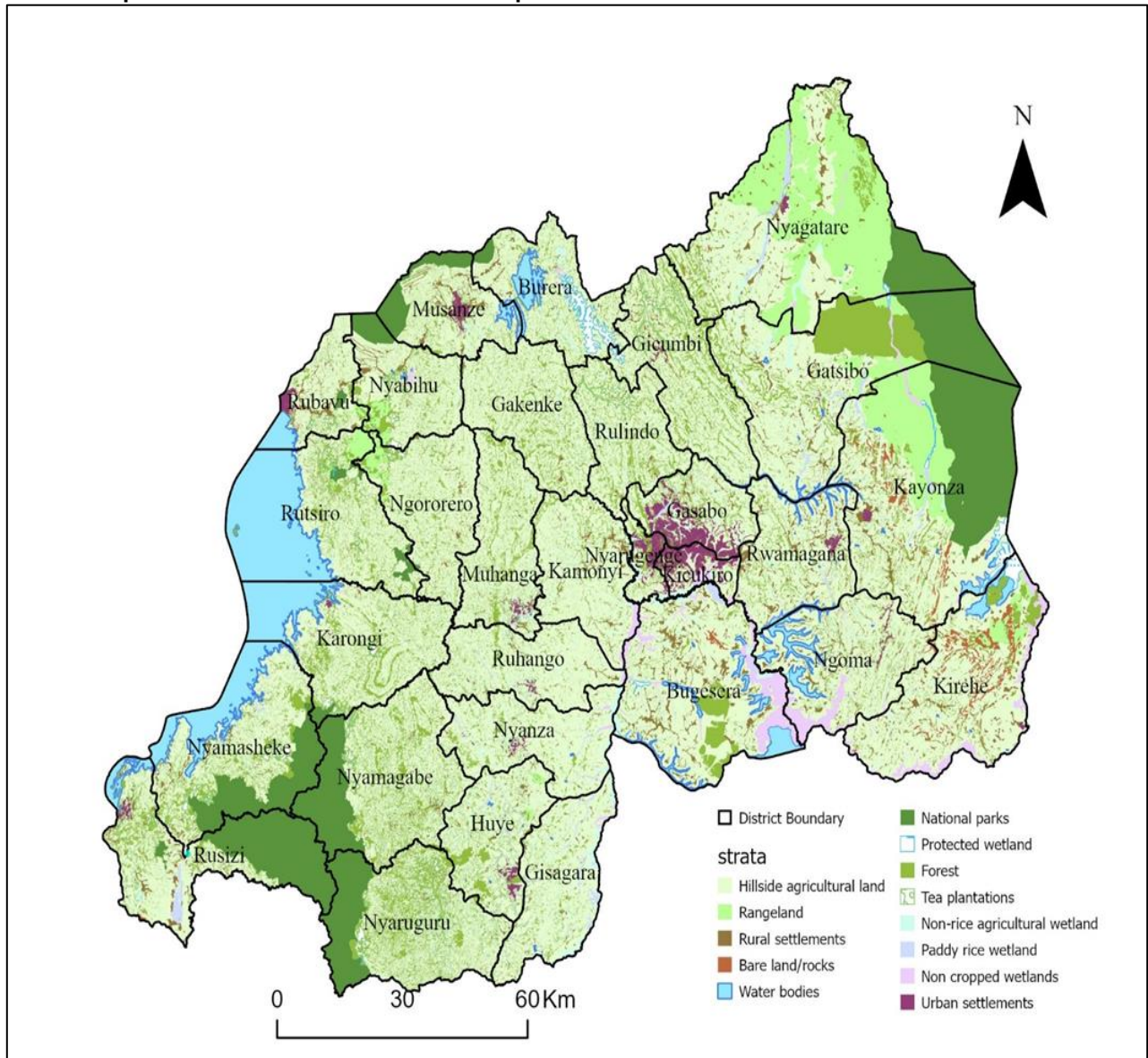
Land classification was done using Rwanda land cover map which is a combination of different layers available in the country, plus a photo interpretation of a series (2010 to 2020) of high-resolution satellite images from Worldview. The Rwanda land cover map is divided into 13 land cover classes (as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

Table 1: List of Rwanda land cover classes

Code	Land cover class name	Area (Ha)	Percentage share
1.0	Consolidated tea plantations	17,821	0.70
1.1	Hillside agricultural land	1,343,933	53.10
2.1	Non-rice agricultural wetland	55,807	2.20
2.2	Paddy rice wetland	21,848	0.90
2.3	Non cropped wetlands	37,743	1.50
3.0	Rangeland	144,490	5.70
4.1	Urban settlements	31,612	1.20
4.2	Rural settlements	78,928	3.10
5.0	Bare land/rocks	15,404	0.60
6.0	Water bodies	135,295	5.30
7.0	National parks	241,455	9.50
8.0	Protected wetland	12,201	0.50
9.0	Forest plantations	395,001	15.60

Source: NISR, SAS 2022

Map 1: Rwanda land classification map done in 2020



Source: NISR, SAS 2022

Among 13 land cover classes, only 5 are related to agricultural activities. The next step of building the area sample frame is 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 tea plantation, hillside agricultural land, non-rice agricultural land, paddy rice agricultural wetland, and rural settlement. The remaining land cover classes are considered as excluded from the frame of land potential for agriculture. 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, basing on a defined threshold as follow:

Table 2: List of strata

Stratum code	Stratum name	Definition
1.0	Dominant hill crop land	Clusters with Hillside agricultural land cover class greater or equal to 60 percent of the total area of the cluster
2.0	Dominant Wetland crops	Clusters with non-rice wetland land cover class greater than 25 percent of total area of the cluster
3.0	Dominant rangeland	Clusters with rangeland land cover class greater or equal to 60 percent of the total area of the cluster
4.0	Mixed	The rest of other possible combinations
9.0	Excluded	All clusters with excluded land cover classes greater or equal to 50 percent of the total area of the cluster

Source: NISR, SAS 2022

In addition, tea plantation class data recorded by the National Agricultural Export Development Board (NAEB) 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

District	Stratum					Total
	Dominant hill crop land	Dominant wetland crops	Dominant rangeland	Mixed stratum	Excluded stratum	
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
National	148,119	7,508	15,494	23,433	75,435	269,989

Source: NISR, SAS 2022

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.

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

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

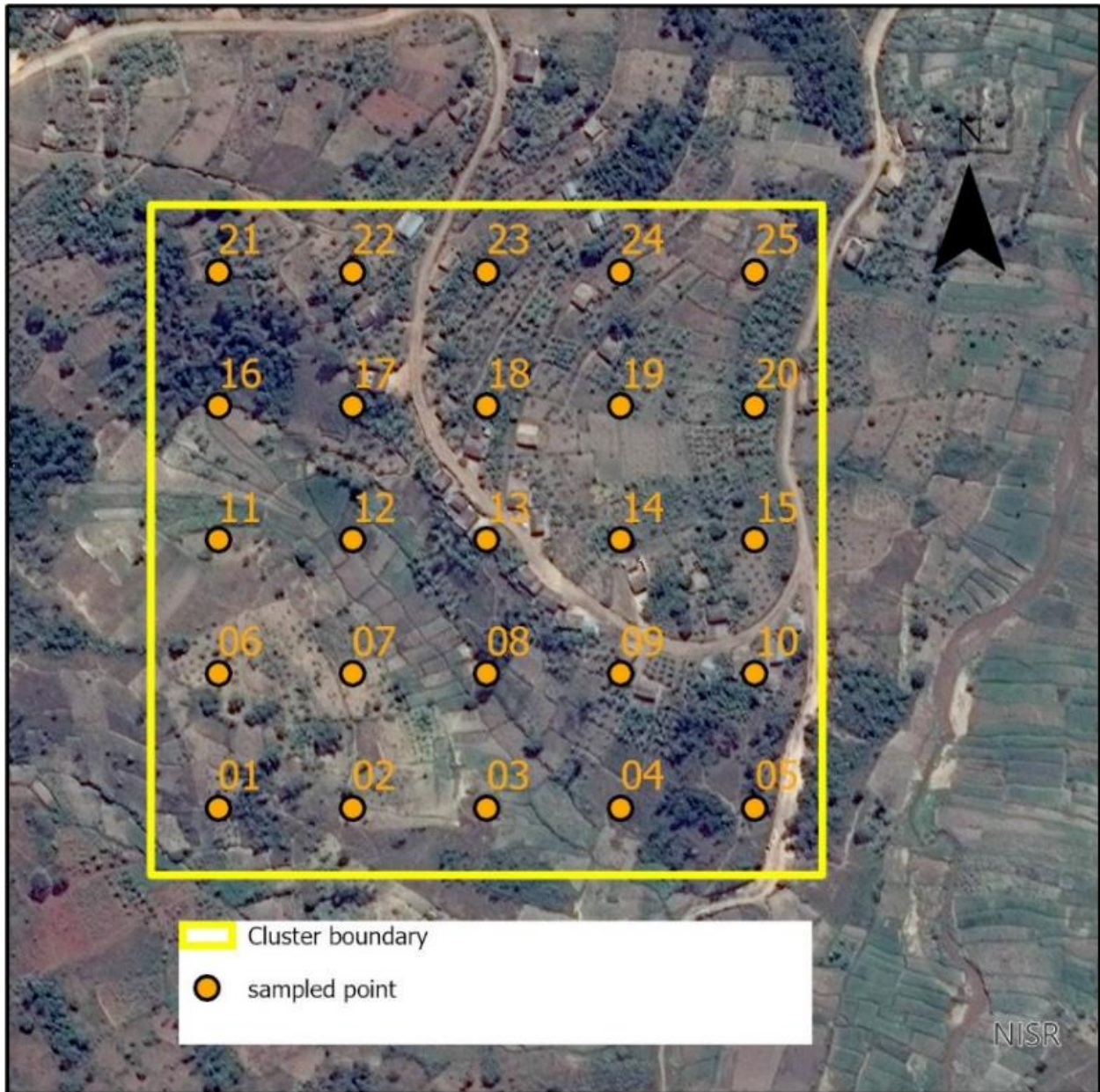
District	Stratum				Total
	Dominant hill crop land	Dominant wetland crops	Dominant rangeland	Mixed stratum	
Nyarugenge	12	6	-	2	20
Gasabo	22	4	-	3	29
Kicukiro	13	5	-	2	20
Nyanza	37	4	-	2	43
Gisagara	33	5	-	3	41
Nyaruguru	25	3	-	7	35
Huye	27	3	-	5	35
Nyamagabe	36	2	-	6	44
Ruhango	36	3	-	3	42
Muhanga	33	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
National	942	75	52	131	1200

Source: NISR, SAS 2022

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 2022

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:

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

Where:

W_{Phij} = weight for the j^{th} sample plot in the i^{th} sample segment in stratum h

2.3. Data collection design

SAS data collection is carried out into two distinct phases: the first phase, known as screening, consists of delineating all plots containing the sampled points in all sampled segments and recording the related information. Generally, during screening activity, the information gathered includes agricultural land use, crop area, and expected harvesting period for grown crops. The second phase involves collecting data in the agricultural plots identified during screening activity, which relates to crop production, agricultural inputs, and the best agricultural practices. Additionally, the aforementioned information is also gathered from all large-scale farmers (LSF) who have grown crops in the current season. During this season, experienced 127 enumerators and 29 team leaders served in data collection after a refresher training conducted by NISR staff at headquarter office. To ensure data quality, a high-level supervision was conducted throughout the data collection activities.

2.3.1. Time frame

The data collection activities started on 24th April and ended on 30th June 2022 covering 1,200 segments and 331 large scale farmers' holdings across the country, while the analysis and reporting were completed by August.

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 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

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.

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.

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 a given 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. In agriculture season B, 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.

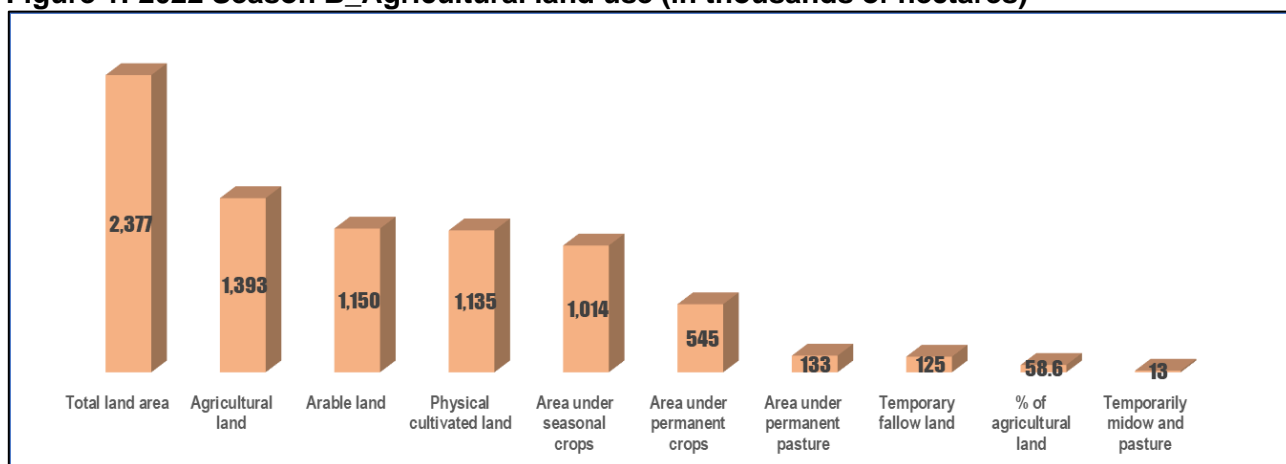
III. SURVEY FINDINGS

This section highlights key results of SAS 2022 Season B related to crop area (physical land use, cultivated area, and harvested area), yield, production, agricultural inputs, and agricultural practices in Rwanda.

3.1. Agricultural land use

The total country land area is estimated at 2.377 million of hectares for which 1.393 million hectares (58.6% of total country land) is used for agriculture. Out of the total agricultural land, 1.014 million hectares were used for Seasonal crops in season B, 0.5 million hectares are area under permanent crops, while 0.133 million ha under permanent pasture. (See district details in Table 6).

Figure 1: 2022 Season B_Agricultural land use (in thousands of hectares)



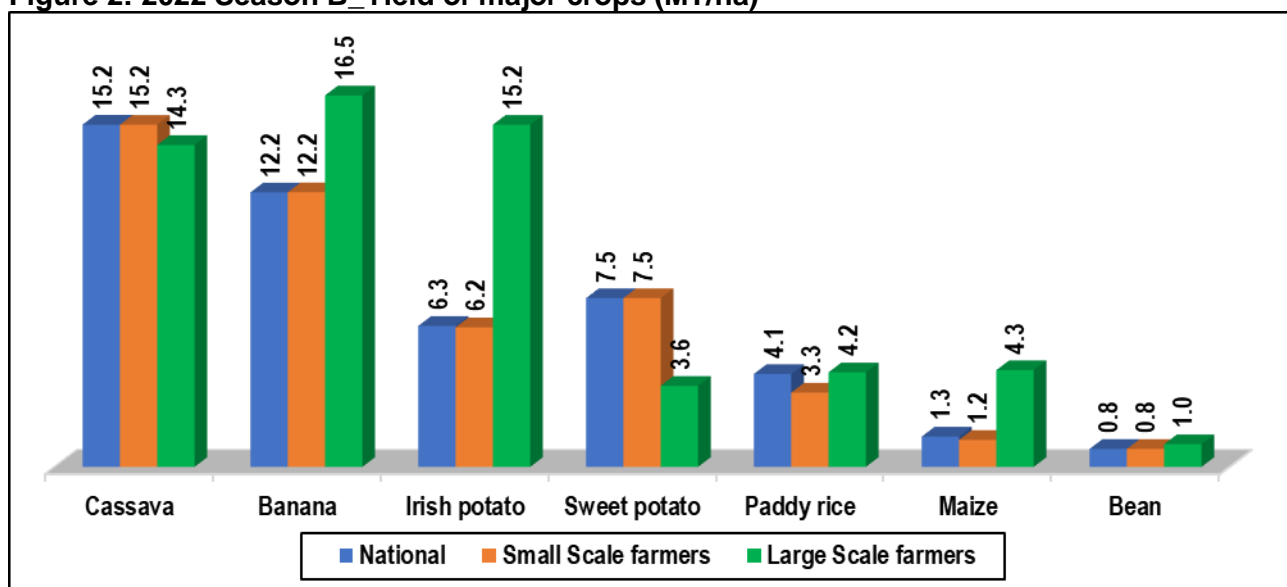
Source: NISR, SAS 2022

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

- **Maize:** In 2022 season B, the cultivated area for Maize was estimated at 81,339 ha, an increase of 1 percent when compared to 2021 season B. The production was estimated at 109,615 MT, an increase of 5 percent when compared to 2021 season B. In this season the national average yield was 1.3 tons per hectare, with an average yield of 1,2 tons and 4.3 tons for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12)
- **Sweet potato:** In 2022 season B, the cultivated area for Sweet potato was estimated at 92,056 ha, an increase of 5 percent when compared to 2021 season B. Sweet potato production was estimated at 649,445 MT, an increase of 3 percent when compared to 2021 season B. The national average yield was 7.5 tons per hectare (See district details in Tables 5, 8-12).
- **Irish potato:** In 2022 season B, the cultivated area for Irish potato was estimated at 52,858 ha, an increase of 2 percent when compared to 2021 season B. The production was estimated at 331,016 MT, a decrease of 16 percent compared to 2021 season B. The average yield of Irish potato was 6.3 tons per hectare, with an average yield of 6.2 and 15.2 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).

- **Cassava:** In 2022 season B, the cultivated area for Cassava was estimated at 152,470 ha, an increase of 3 percent when compared to 2021 season B, while the harvested area was estimated at 48,494 ha. The production was 737,284 MT, an increase of 3 percent when compared to 2021 season B. The national average yield of cassava was 15.2 tons per hectare (See district details in Tables 5, 8-12).
- **Paddy rice:** In 2022 season B, the cultivated area for Paddy rice was estimated at 16,517 ha, an increase of 1 percent when compared to 2021 season B. The production was 68,072 MT, almost the same when compared to the 2021 season B. The average yield was 4.1 tons per hectare, with an average yield of 3.2 and 4.1 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).
- **Banana:** In 2022 season B, the cultivated area for Banana was estimated at 213,322 ha, an increase of 5 percent when compared to 2021 season B. The harvested area was estimated at 83,314 ha. The production was estimated at 1,016,137 MT, an increase of 2 percent when compared to 2021 season B. The average yield of banana was 12.2 tons per hectare (See district details in Tables 5, 8-12).
- **Beans:** In 2022 season B, the cultivated area for Beans was estimated at 268,634 ha, a decrease of 11 percent when compared to 2021 season B. Bean's production was estimated at 210,290 MT, a decrease of 8 percent change from 2021 season B. The national average yield of beans was 783 kilograms per hectare, with an average yield of 782 and 1,010 kilograms for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).

Figure 2: 2022 Season B Yield of major crops (MT/ha)



Source: NISR, SAS 2022

Table 5: 2022 Season B_Cultivated area, harvested area, production and yield by crop

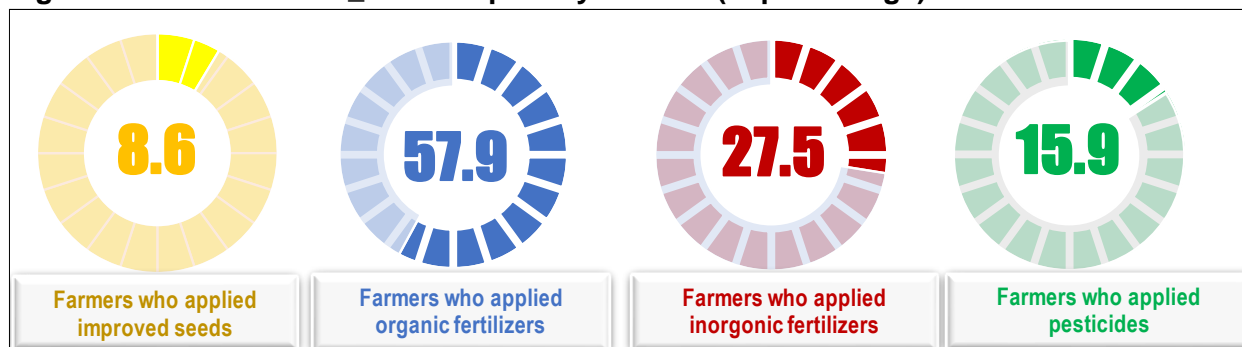
Crop/crop groups	Cultivated area (Ha)		Harvested area (Ha)		Production (MT)		Yield (MT/ha)	
	2021 B	2022 B	2021 B	2022 B	2021 B	2022 B	2021 B	2022 B
Cereals	240,314	259,848	240,314	259,745	(NA)	(NA)	(NA)	(NA)
Maize	80,570	81,339	80,570	81,282	104,041	109,615	1.3	1.3
Sorghum	133,033	139,793	133,033	139,792	134,331	147,411	1.0	1.1
Paddy rice	16,302	16,517	16,302	16,474	67,808	68,072	4.2	4.1
Wheat	8,749	8,482	8,749	8,482	9,184	9,858	1.0	1.2
Other cereals	1,660	13,718	1,660	13,715	1,600	6,934	1.0	0.5
Tubers and Roots	301,765	316,628	202,211	203,856	(NA)	(NA)	(NA)	(NA)
Cassava	147,320	152,470	47,837	48,494	718,584	737,284	15.0	15.2
Sweet potato	87,762	92,056	87,762	86,589	632,614	649,445	7.2	7.5
Irish potato	51,595	52,858	51,595	52,844	393,371	331,016	7.6	6.3
Taro &Yams	15,088	19,245	15,017	15,928	107,037	117,647	7.1	7.4
Banana	202,807	213,322	82,137	83,314	991,501	1,016,137	12.1	12.2
Cooking banana	71,262	73,554	24,193	24,565	439,405	450,427	18.2	18.3
Dessert banana	37,668	37,511	12,174	12,513	142,487	145,753	11.7	11.6
Banana for beer	93,877	102,257	45,770	46,236	409,609	419,956	8.9	9.1
Legumes and Pulses	356,288	332,464	356,213	332,436	(NA)	(NA)	(NA)	(NA)
Beans	301,658	268,634	301,584	268,628	229,559	210,290	0.8	0.8
Bush bean	199,864	170,666	201,783	170,661	138,659	118,843	0.7	0.7
Climbing bean	101,795	97,968	99,801	97,967	90,899	91,446	0.9	0.9
Pea	7,521	7,034	7,521	7,034	6,549	5,373	0.9	0.8
Groundnut	21,534	19,545	21,534	19,545	10,763	10,172	0.5	0.5
Soybean	25,574	37,251	25,574	37,229	12,194	19,530	0.5	0.5
Vegetables & Fruits	79,222	26,847	53,284	19,990	(NA)	(NA)	(NA)	(NA)
Vegetables	15,574	16,473	15,574	15,777	172,936	175,205	11.1	11.1
Fruits	8,371	10,373	4,429	4,213	25,340	26,872	5.7	6.4
Fodder crops	8,260	10,651	8,249	10,129	109,181	106,966	13.2	10.6
Other crops	47,017	56,302	25,032	28,754	124,188	132,048	5.0	4.6
Total Developed Crop area	1,180,396	1,216,060	934,159	938,223	(NA)	(NA)	(NA)	(NA)

Source: NISR, SAS 2022

3.3. Use of inputs

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

Figure 3: 2022 Season B_Use of inputs by farmers (in percentage)



Source: NISR, SAS 2022

3.3.1. Use of seeds

Results show that 8.6 percent of farmers used improved seeds. In regard to farmer type⁴, 7.5 percent of small-scale farmers (SSF) and 64.6 percent of Large-scale farmers (LSF) used improved seeds (See Figure 3). The major sources of improved seed were agro-dealers and NGO/companies accounting for 66.6 percent (See details in Tables, 17-20).

3.3.2. Use of fertilizers

Results show that 57.9 percent of farmers applied organic fertilizer with 57.9 percent of small-scale farmers and 58.7 percent of large-scale farmers applied organic fertilizer. In regard to inorganic fertilizers, 27.5 percent of farmers applied inorganic fertilizer with 26.6 percent of small-scale farmers and 72.4 percent of large-scale farmers applied inorganic fertilizer (See figure 3). The main sources of fertilizers were agro-dealers and NGOs/companies account for over 87.6 percent of inorganic fertilizers provisions. DAP, UREA and NPK are inorganic fertilizers mostly used in 2022 Season B with 40.7 percent, 34.8 percent and 21.4 percent respectively (See details in Tables 7,21-25).

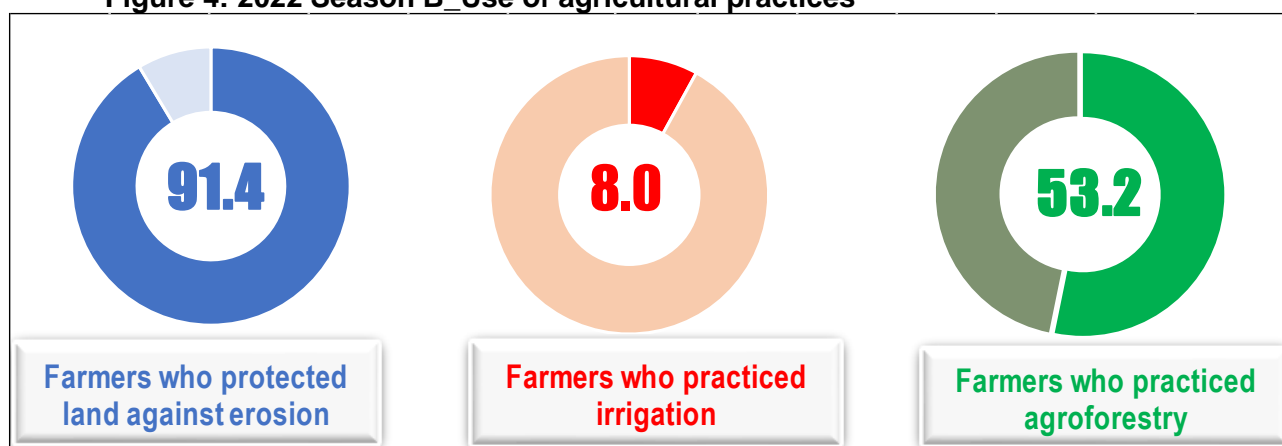
3.3.3. Use of pesticides

The results revealed that 15.9 percent of farmers applied pesticides. According to farmer type, 14.7 percent of small-scale farmers and 74.9 percent of large-scale farmers applied pesticides respectively (See figure 3). Dithane, Rocket and Cypermethrin were the most used pesticides with 43.1 percent of farmers, 29.8 percent and 14.2 percent respectively (See details in Tables 26 & 27).

3.4. Agricultural practices

The survey covered information related to agricultural practices used by farmers (irrigation, anti-erosion activities mechanization and agroforestry). Results are presented in terms of percentage of farmers involved in such practices throughout the 2022 season B.

Figure 4: 2022 Season B Use of agricultural practices



Source : NISR, SAS 2022

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

The survey results revealed that 8.0 percent of farmers practiced irrigation, with 6.9 percent of small-scale farmers and 61.8 percent for large-scale farmers. Modern irrigation accounts for 62 percent practices by farmers. Lakes/stream and underground water were the most used sources of water for irrigation with 53.1 percent and 27 percent respectively (See details in Tables 7,28-30).

3.4.2. Erosion control measures

In 2022 season B, 91.4 percent of farmers practiced anti-erosion activities where 91.3 percent of small-scale farmers and 95.1 percent were large-scale farmers protected their land against erosion. Cover plants was the most used type of anti-erosion with 58.2 percent of farmers. The farmland was less eroded where the major erosion type was very low degree of erosion (splash erosion and wind erosion) appeared the most with 86.4percent (See details in Tables 7, 28, 31 and 32). The use of mechanical equipment was estimated at less than 1 percent of farmers utilising them, while 53.2 percent of farmers practiced agroforestry.

IV. MAIN TABLES

Table 6: 2022 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	Temporary fallow land	Temporarily midow and pasture	Area under permanent pasture
Nyarugenge	13.1	5.5	42.1	4.7	4.8	4.1	2.5	0.6	0.1	0.1
Gasabo	42.7	20.2	47.3	18.7	17.4	15.6	7.1	2.4	0.8	0.4
Kicukiro	16.6	5.9	35.5	5.2	4.7	4.2	1.9	0.9	0.0	0.3
Nyanza	67.1	42.8	63.8	40.4	38.4	36.2	14.9	4.0	0.3	0.3
Gisagara	67.3	44.1	65.5	42.1	38.0	35.8	14.8	6.1	0.3	-
Nyaruguru	100.7	34.5	34.3	30.5	28.5	23.7	11.7	6.0	0.9	-
Huye	58.1	33.2	57.1	31.4	30.8	29.0	13.8	2.3	0.2	0.1
Nyamagabe	109.1	46.5	42.6	41.5	39.1	34.1	12.7	7.3	0.2	0.0
Ruhango	62.6	47.1	75.3	44.2	43.7	40.2	14.2	3.4	0.7	0.1
Muhanga	64.4	42.0	65.2	36.9	36.1	30.5	16.9	5.8	0.5	-
Kamonyi	65.8	45.4	69.0	39.9	42.1	36.0	18.0	3.3	0.7	0.1
Karongi	78.9	42.0	53.2	35.9	34.2	27.5	14.6	7.8	0.6	-
Rutsiro	66.0	39.0	59.0	27.2	26.9	20.6	16.8	6.3	0.3	5.8
Rubavu	33.8	23.8	70.3	22.4	22.7	21.2	5.7	0.7	0.7	0.3
Nyabihu	53.6	34.8	64.8	30.0	26.0	25.3	6.4	4.6	0.9	4.1
Ngororero	67.5	45.8	67.8	38.5	35.3	29.9	15.8	8.3	0.3	2.1
Rusizi	91.4	36.1	39.4	33.7	34.5	32.1	12.3	1.5	0.1	-
Nyamasheke	94.8	39.4	41.6	30.1	37.5	28.2	21.5	1.9	-	-
Rulindo	56.7	36.2	63.9	32.4	31.7	29.0	13.0	3.2	0.2	1.2
Gakenke	70.1	48.8	69.6	41.8	44.3	37.2	21.3	4.5	0.1	0.1
Musanze	50.9	29.3	57.5	28.4	25.8	24.8	3.9	3.5	0.4	-
Burera	58.4	36.8	62.9	36.1	31.7	30.7	3.0	5.1	0.4	-
Gicumbi	82.5	48.4	58.6	45.6	46.0	42.2	11.5	2.3	1.1	-
Rwamagana	65.3	46.2	70.8	42.2	42.3	39.3	23.5	2.2	0.7	1.7
Nyagatare	191.1	148.1	77.5	74.2	74.1	69.1	87.9	4.6	0.6	69.4
Gatsibo	153.6	74.9	48.7	58.9	63.1	53.9	37.4	4.8	0.3	7.0
Kayonza	179.2	96.4	53.8	63.7	62.4	58.7	48.1	4.8	0.2	29.2
Kirehe	114.9	73.1	63.6	60.1	64.7	57.1	31.6	2.9	0.1	5.4
Ngoma	80.5	53.2	66.1	47.2	47.9	42.1	19.9	4.7	0.6	0.6
Bugesera	120.4	74.0	61.4	65.5	60.2	55.7	21.7	9.0	0.8	4.7
National	2,377	1,393.2	58.6	1,150	1,135	1,014	545	125	13	133

Source: NISR, SAS 2022

Table 7: 2022 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		3,283	3,130	375	2,150
Gasabo	325	15,705	12,843	2,647	9,678
Kicukiro	155	3,847	3,641	1,520	2,085
Nyanza	697	31,161	17,034	3,989	18,965
Gisagara	2,174	24,291	18,899	8,512	16,239
Nyaruguru	116	33,260	16,659	10,883	17,753
Huye	1,013	27,057	15,834	5,454	16,359
Nyamagabe	15	41,504	19,005	8,771	21,201
Ruhango	1,036	34,256	21,398	3,593	19,550
Muhanga	186	35,668	14,539	3,969	19,227
Kamonyi	188	35,046	16,745	3,202	20,629
Karongi	6	29,979	18,874	6,133	18,827
Rutsiro		28,914	15,640	8,708	15,900
Rubavu		20,352	9,887	9,878	6,291
Nyabihu		28,708	24,809	13,529	15,213
Ngororero		37,536	16,344	10,410	23,529
Rusizi	1,509	23,760	20,741	11,258	14,728
Nyamasheke	360	32,693	26,242	13,378	20,663
Rulindo	115	33,058	20,318	9,553	24,070
Gakenke	61	46,100	28,479	16,249	32,483
Musanze		24,434	13,829	11,027	15,617
Burera		31,333	11,070	9,824	20,877
Gicumbi	80	43,627	21,258	9,521	31,045
Rwamagana	654	37,616	35,386	8,703	17,762
Nyagatare	2,697	70,338	76,015	23,125	23,379
Gatsibo	2,399	53,532	41,016	14,289	36,613
Kayonza	2,355	32,172	29,022	16,045	21,657
Kirehe	2,536	38,006	40,336	14,555	20,408
Ngoma	886	31,829	34,679	3,949	12,889
Bugesera	1,533	38,159	41,249	14,500	19,654
National	21,096	967,224	684,921	277,549	555,443

Source: NISR, SAS 2022

Table 8: 2022 Season B_Cultivated area by crop type and district (Ha)

District	Maize	Sorghum	Paddy rice	Wheat	Chia seeds	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	328	441			13	-	552	144	32	69	1,539	334	318	887	1,367	1,328	39		27	162	250	8	41	250	5,223
Gasabo	1,010	3,566	253			-	2,811	1,009	748	141	2,854	907	871	1,076	3,542	3,245	296	39	209	444	758	19	679	319	18,400
Kicukiro	546	796	70		5	-	291	373	22	75	832	230	210	392	1,276	1,253	23		55	287	63	23	26	195	4,935
Nyanza	2,137	4,629	655		57	80	10,080	2,518	449	667	3,951	768	1,373	1,811	10,429	8,433	1,995	38	997	1,701	373	316	227	1,528	40,832
Gisagara	2,393	4,571	2,972			171	5,278	2,320	239	261	5,232	780	1,568	2,883	11,849	10,203	1,646	30	563	3,830	375	1,015	154	497	41,750
Nyaruguru	399	3,499		431	2	-	3,271	4,198	1,535	553	2,047	453	503	1,090	4,525	839	3,686	200	7	1,274	272	61	821	4,751	27,845
Huye	767	6,507	950			187	5,598	2,643	468	610	3,661	1,039	872	1,750	6,929	4,169	2,760	94	222	2,656	212	126	160	1,564	33,352
Nyamagabe	887	4,370	23	1,956		-	5,486	7,283	2,702	474	4,834	449	597	3,788	6,297	940	5,357	1,418		1,138	426	119	100	3,234	40,748
Ruhango	783	3,020	932			166	21,297	2,815	366	680	6,559	871	1,327	4,360	10,163	6,597	3,566	74	1,364	2,828	373	58	598	1,682	53,758
Muhanga	483	186	137	3		-	9,596	5,903	92	2,273	14,902	1,861	2,096	10,945	7,976	4,521	3,455	73		1,928	484	130	385	1,120	45,673
Kamonyi	1,718	4,375	189		42	5	10,183	3,022	532	1,528	10,170	1,380	1,611	7,180	9,519	7,944	1,575	105	525	3,672	743	660	625	2,429	50,042
Karongi	541	1,864		228		-	7,367	4,110	964	1,055	8,512	759	1,206	6,547	6,647	2,010	4,637	445		1,686	630	69	537	3,250	37,904
Rutsiro	1,462	109		389		6	1,805	3,167	3,797	1,384	5,529	1,037	1,880	2,612	4,288	598	3,690	594		1,316	224	700	278	3,711	28,760
Rubavu	1,935	378				-	469	755	6,613	268	2,330	564	316	1,450	3,713	622	3,091	171		421	2,658	89	688	1,182	21,670
Nyabihu	3,344			1,435		-	402	3,546	7,602	35	707	176	269	262	1,906	16	1,890	250		79	949	552	785	2,340	23,930
Ngororero	3,167	70		1,345		-	2,640	6,872	1,422	971	8,893	814	1,150	6,928	3,931	570	3,360	138		1,142	301	150	218	1,285	32,545
Rusizi	1,183	143	1,414		55	-	14,654	2,109	78	734	3,545	1,217	382	1,946	9,569	6,594	2,976	99	313	1,148	302	372	80	3,004	38,800
Nyamasheke	619	21	344			-	9,108	3,696	94	1,137	5,078	1,239	968	2,870	5,513	1,215	4,298	208	890	2,312	429	668		8,038	38,155
Rulindo	1,005	5,032	17	23		6	4,409	3,745	1,220	310	5,736	1,532	1,241	2,964	9,665	4,222	5,443	234	10	300	506	268	159	1,644	34,287
Gakenke	1,324	484	17	416		-	3,453	7,198	1,234	1,600	12,705	2,110	3,223	7,371	11,040	881	10,159	235	40	1,223	408	305	122	1,885	43,691
Musanze	2,579	1,060		732		-	95	1,643	5,727	190	1,432	463	406	563	4,882	266	4,616	304		13	847	461	272	1,914	22,152
Burera	2,045	7,178		1,337		34	97	3,157	4,141	175	1,741	713	191	837	10,126	419	9,706	613			387	135	360	56	31,580
Gicumbi	2,346	15,944		186	213	-	1,548	7,948	2,811	198	6,471	2,299	1,885	2,287	9,974	2,623	7,351	960	335	134	364	456	965	1,099	51,951
Rwamagana	4,234	11,512	496		1,112	33	3,660	1,597	1,895	972	11,007	6,735	2,105	2,167	10,190	9,877	312	145	1,529	379	1,057	506	654	1,331	52,308
Nyagatare	18,450	7,691	1,640		361	12	2,291	1,555	649	120	10,523	5,751	1,322	3,450	26,182	25,186	996	64	3,320	1,861	902	270	443	949	77,283
Gatsibo	8,533	8,981	1,594		1,018	248	2,312	1,739	1,888	532	18,830	10,000	3,087	5,743	16,330	14,477	1,853	61	3,246	1,575	377	115	92	3,031	70,502
Kayonza	7,069	15,832	1,697		1,977	429	9,090	1,766	2,735	442	9,612	6,240	1,438	1,935	14,391	14,169	222	106	941	344	565	961	153	787	68,899
Kirehe	2,722	15,049	959	1	1,521	192	4,267	1,380	1,333	1,045	15,732	9,242	1,798	4,693	16,896	10,344	6,552	170	815	1,208	340	1,109	58	1,039	65,835
Ngoma	2,396	5,500	848		5,127	493	4,133	1,395	811	365	16,486	10,303	1,555	4,628	14,966	12,705	2,261	126	886	922	407	421	432	935	56,650
Bugesera	4,935	6,986	1,309		78	75	6,227	2,449	660	380	11,872	3,288	1,744	6,840	14,552	14,397	155	42	3,253	1,265	492	230	539	1,254	56,599
National	81,339	139,793	16,517	8,482	11,581	2,136	152,470	92,056	52,858	19,245	213,322	73,554	37,511	102,257	268,634	170,666	97,968	7,034	19,545	37,251	16,473	10,373	10,651	56,302	1,216,060
SSF	79,626	139,706	316	8,456	11,264	2,135	152,418	92,039	52,646	19,243	213,184	73,433	37,500	102,251	268,188	170,238	97,950	7,026	19,543	36,267	16,379	9,972	10,123	55,435	1,193,968
LSF	1,713	86	16,200	26	317	1	51	17	211	2	138	122	10	6	446	429	18	8	2	984	94	401	528	867	22,092

Source: NISR, SAS 2022

Table 9: 2022 Season B_Harvested area by crop type and district (Ha)

District	Maize	Sorghum	Paddy rice	Wheat	Chia seeds	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	328	441	-	-	13	-	174	137	32	41	602	91	86	425	1,367	1,328	39	-	27	162	233	5	41	45	3,650
Gasabo	1,010	3,566	253	-	-	-	329	859	748	85	1,249	381	390	477	3,542	3,245	296	39	209	444	700	8	640	163	13,844
Kicukiro	546	796	44	-	5	-	91	373	22	74	393	113	89	191	1,276	1,253	23	-	55	287	63	15	26	174	4,240
Nyanza	2,137	4,629	655	-	57	80	1,601	2,167	449	569	1,100	205	370	524	10,429	8,433	1,995	38	997	1,701	373	79	227	1,383	28,670
Gisagara	2,393	4,571	2,970	-	-	171	2,524	2,320	239	240	1,637	293	502	842	11,849	10,203	1,646	30	563	3,830	375	89	154	339	34,293
Nyaruguru	399	3,499	-	431	2	-	1,300	4,078	1,535	323	683	174	168	341	4,525	839	3,686	200	7	1,274	272	37	821	1,109	20,495
Huye	767	6,507	950	-	-	187	962	2,643	468	509	1,016	235	244	537	6,929	4,169	2,760	94	222	2,656	212	27	160	1,274	25,582
Nyamagabe	887	4,370	23	1,956	-	-	1,020	7,283	2,702	396	1,510	109	123	1,278	6,297	940	5,357	1,418	-	1,138	426	79	100	902	30,507
Ruhango	783	3,020	932	-	-	166	6,368	2,815	366	614	1,960	136	218	1,606	10,163	6,597	3,566	74	1,364	2,828	336	58	592	1,146	33,585
Muhanga	483	186	137	3	-	-	2,743	5,903	92	2,103	6,613	447	571	5,595	7,976	4,521	3,455	73	-	1,928	429	130	333	814	29,948
Kamonyi	1,718	4,375	182	-	42	5	1,813	3,022	532	1,108	4,662	403	727	3,531	9,519	7,944	1,575	105	525	3,672	710	570	625	1,749	34,934
Karongi	541	1,864	-	228	-	-	1,789	3,727	954	960	4,608	198	326	4,083	6,647	2,010	4,637	445	-	1,686	615	51	475	961	25,551
Rutsiro	1,462	109	-	389	-	6	1,018	3,167	3,797	1,168	2,428	286	855	1,287	4,288	598	3,690	594	-	1,316	176	432	278	2,267	22,896
Rubavu	1,935	378	-	-	-	-	212	755	6,613	173	858	171	134	552	3,713	622	3,091	171	-	421	2,658	-	688	884	19,458
Nyabihu	3,344	-	-	1,435	-	-	77	2,898	7,602	35	281	41	134	106	1,906	16	1,890	250	-	79	875	128	785	461	20,153
Ngororero	3,167	70	-	1,345	-	-	364	6,872	1,422	904	3,847	201	336	3,311	3,931	570	3,360	138	-	1,142	301	13	99	273	23,888
Rusizi	1,183	143	1,414	-	55	-	9,327	2,109	78	684	1,251	390	139	721	9,569	6,594	2,976	99	313	1,148	302	217	80	2,562	30,535
Nyamasheke	619	20	343	-	-	-	3,676	3,696	94	925	1,320	206	172	943	5,513	1,215	4,297	208	890	2,310	257	254	-	3,130	23,255
Rulindo	1,005	5,032	17	23	-	6	1,025	3,090	1,220	136	2,492	488	638	1,366	9,665	4,222	5,443	234	10	300	453	103	100	555	25,465
Gakenke	1,324	484	17	416	-	-	1,191	7,198	1,234	1,449	5,639	725	1,386	3,528	11,040	881	10,159	235	40	1,223	393	184	122	1,219	33,409
Musanze	2,529	1,060	-	732	-	-	20	1,501	5,727	171	465	115	173	177	4,882	266	4,616	304	-	13	847	117	272	937	19,577
Burera	2,045	7,178	-	1,337	-	34	31	3,157	4,141	133	665	265	110	290	10,126	419	9,706	613	-	-	387	112	304	56	30,318
Gicumbi	2,346	15,944	-	186	213	-	554	6,064	2,811	145	2,127	520	580	1,027	9,974	2,623	7,351	960	335	134	300	233	965	271	43,560
Rwamagana	4,234	11,512	496	-	1,112	33	1,570	1,116	1,895	728	4,618	2,975	682	961	10,190	9,877	312	145	1,529	379	1,051	336	626	819	42,389
Nyagatare	18,450	7,691	1,640	-	361	12	1,538	1,555	649	120	4,690	2,315	403	1,972	26,182	25,186	996	64	3,320	1,861	902	127	443	748	70,353
Gatsibo	8,531	8,981	1,594	-	1,018	248	616	1,430	1,888	439	5,897	2,762	921	2,214	16,327	14,475	1,853	61	3,246	1,575	377	111	92	2,288	54,718
Kayonza	7,069	15,832	1,697	-	1,977	429	2,338	1,567	2,735	363	3,293	2,240	325	728	14,391	14,169	222	106	941	344	565	207	151	436	54,444
Kirehe	2,718	15,049	959	1	1,518	192	1,650	1,380	1,330	773	4,649	2,789	360	1,500	16,896	10,344	6,552	170	815	1,189	340	51	58	700	50,437
Ngoma	2,396	5,500	841	-	5,127	493	1,369	1,395	811	256	6,121	3,661	535	1,926	14,964	12,703	2,261	125	886	922	406	300	432	519	42,864
Bugesera	4,935	6,986	1,309	-	78	75	1,205	2,311	660	308	6,638	1,630	816	4,193	14,552	14,397	155	42	3,253	1,265	445	136	438	569	45,205
National	81,282	139,792	16,474	8,482	11,578	2,136	48,494	86,589	52,844	15,928	83,314	24,565	12,513	46,236	268,628	170,661	97,967	7,034	19,545	37,229	15,777	4,213	10,129	28,754	938,223
SSF	79,577	139,706	315	8,456	11,264	2,135	48,480	86,573	52,636	15,927	83,283	24,538	12,511	46,234	268,188	170,238	97,950	7,026	19,543	36,267	15,683	4,109	9,739	28,251	917,158
LSF	1,706	86	16,159	26	314	1	15	16	208	1	31	27	2	2	441	423	17	7	2	962	94	104	390	502	21,065

Source : NISR, SAS 2022

Table 10: 2022 Season B Average yield by crop type and district (Kg/Ha)

District	Maize	Sorghum	Paddy rice	Wheat	Chia seeds	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	1,001	736	-	-	77	12,540	4,870	3,012	7,492	10,513	18,769	8,549	9,135	746	743	860	-	396	597	6,569	16,370	6,177	7,694
Gasabo	1,331	1,043	4,720	-	-	13,350	5,742	3,229	3,710	13,269	17,655	14,119	9,063	818	834	637	542	559	515	11,119	7,712	14,312	1,865
Kicukiro	914	1,137	4,733	-	128	14,281	10,475	3,262	5,840	13,416	18,818	14,348	9,788	821	823	715	-	478	567	8,542	1,599	4,445	6,157
Nyanza	1,049	1,154	3,649	-	578	17,096	9,487	3,138	4,120	9,700	12,270	8,953	9,219	626	584	807	528	334	502	10,798	3,709	16,841	1,616
Gisagara	1,099	896	3,992	-	-	17,996	5,710	2,047	3,679	11,285	16,987	9,925	10,108	674	658	776	657	382	489	8,836	28,029	4,648	1,283
Nyaruguru	1,622	601	-	873	723	15,230	8,085	5,786	10,298	10,077	15,007	8,175	8,490	663	508	699	941	182	523	9,248	3,078	12,029	1,514
Huye	1,026	958	3,450	-	-	18,924	8,519	2,843	4,409	9,737	11,692	10,136	8,700	608	601	618	521	329	478	11,322	1,000	7,769	1,700
Nyamagabe	1,073	801	2,273	1,236	-	14,104	6,421	6,934	8,534	7,337	9,840	14,074	6,478	531	586	521	815	-	595	12,201	4,572	4,296	1,268
Ruhango	1,269	800	3,538	-	-	17,519	4,146	2,958	7,297	9,040	17,637	12,426	7,855	663	682	629	1,139	548	677	8,016	6,011	6,948	10,278
Muhanga	1,258	729	2,020	2,457	-	16,840	7,639	3,290	7,231	8,938	16,397	10,975	8,134	559	604	499	554	-	511	8,800	3,081	8,234	12,251
Kamonyi	1,009	1,101	2,710	-	878	16,521	6,286	3,175	9,136	9,416	16,959	10,704	8,289	557	570	491	685	499	463	8,960	6,755	4,980	9,231
Karongi	1,339	896	-	806	-	15,768	10,487	3,447	9,363	10,349	14,767	12,538	9,960	1,067	835	1,167	945	-	575	9,204	8,381	14,493	939
Rutsiro	1,451	930	-	479	-	14,889	7,069	4,084	8,497	12,955	21,548	15,191	9,564	846	645	878	692	-	481	10,261	7,301	13,642	6,785
Rubavu	1,641	1,171	-	-	-	12,700	6,521	8,043	5,964	12,642	17,833	12,710	11,015	819	515	880	893	-	930	13,648	3,449	13,032	11,465
Nyabihu	1,435	-	-	1,060	-	9,713	6,123	8,949	8,836	9,571	16,746	8,949	7,549	1,404	756	1,409	747	-	582	18,511	5,012	3,731	700
Ngororero	1,163	364	-	1,142	-	12,782	6,881	4,455	9,560	10,565	15,628	13,408	9,970	911	551	972	727	-	359	9,834	3,670	9,284	8,039
Rusizi	1,082	686	5,228	-	113	9,504	8,754	6,502	7,587	13,053	19,128	14,798	9,428	867	797	1,022	574	373	557	7,419	5,081	8,914	3,641
Nyamasheke	847	848	3,931	-	-	12,410	8,561	2,498	7,224	12,041	14,598	13,622	11,177	796	642	840	717	464	468	13,574	5,408	-	2,876
Rulindo	1,164	1,128	3,894	1,530	-	15,609	7,194	4,814	6,782	12,593	19,066	13,230	9,985	914	702	1,078	642	439	666	10,187	6,814	24,454	6,957
Gakenke	915	841	3,942	1,201	-	18,448	11,120	4,402	7,479	11,513	19,244	13,498	9,144	1,066	697	1,098	593	377	440	8,632	10,595	10,692	4,894
Musanze	1,476	1,229	-	1,237	-	13,049	9,266	8,717	10,784	9,934	13,953	7,763	9,455	1,315	818	1,343	940	-	651	9,452	7,469	9,305	8,678
Burera	1,115	1,403	-	1,502	-	11,815	8,001	7,710	7,696	12,961	19,099	12,187	7,647	1,258	851	1,276	824	-	-	9,783	2,855	9,345	161
Gicumbi	1,012	1,157	-	971	541	15,490	7,183	6,344	7,886	12,025	19,482	10,416	9,161	1,010	671	1,131	831	528	445	12,504	2,618	13,860	1,888
Rwamagana	865	1,197	4,887	-	461	17,897	4,937	3,847	6,677	14,583	17,869	9,635	7,891	627	615	1,013	289	384	434	9,917	6,232	8,871	1,732
Nyagatare	1,654	1,028	3,921	-	521	19,689	4,837	4,184	5,770	14,128	19,327	8,514	9,175	826	820	974	479	589	754	11,977	5,283	1,143	9,928
Gatsibo	1,507	1,248	3,533	-	856	16,733	8,938	4,324	7,789	13,893	17,891	10,828	10,180	644	645	632	577	619	596	10,924	5,650	11,901	2,163
Kayonza	1,224	1,139	3,952	-	295	17,798	5,523	3,117	5,779	16,687	19,667	13,692	8,855	678	673	965	699	567	557	7,402	5,130	27,724	2,601
Kirehe	2,141	906	4,430	2,280	570	18,210	5,913	3,084	5,116	16,406	21,064	10,456	9,177	602	615	582	578	437	411	7,807	5,708	17,111	1,568
Ngoma	930	1,036	3,587	-	381	17,225	6,704	5,331	3,869	15,793	19,351	8,251	11,097	862	856	894	560	599	530	10,359	6,011	11,897	2,703
Bugesera	1,222	758	5,874	-	484	16,348	4,155	1,992	6,747	9,978	13,458	12,547	8,124	680	678	862	444	519	353	11,341	5,702	16,407	2,781
National	1,349	1,055	4,132	1,162	450	15,204	7,500	6,263	7,386	12,200	18,337	11,648	9,083	783	696	933	764	520	525	10,969	6,334	10,561	4,591
SSF	1,285	1,055	3,257	867	2,376	15,204	7,501	6,228	7,386	12,198	18,339	11,648	9,083	782	696	933	764	520	520	11,009	6,379	10,125	4,642
LSF	4,302	870	4,149	2,230	477	14,304	3,634	15,202	3,073	16,489	16,613	12,829	18,519	1,010	986	1,578	268	341	695	4,271	4,555	21,443	1,718

Source: NISR, SAS 2022

Table 11: 2022 Season B Average yield of large-scale farmers by crop type and district (Kg/Ha)

District/Crop	Maize	Sorghum	Paddy rice	Wheat	Chia seeds	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	734	2,231	4,720	-	-	18,449	-	-	-	21,968	21,968	-	-	-	-	-	-	-	1,648	-	16,916	
Kicukiro	-	350	4,733	-	249	-	-	-	-	13,459	6,577	19,547	-	211	211	-	-	-	840	-	-	
Nyanza	-	-	3,648	-	-	-	-	9,623	-	20,115	17,516	21,948	21,637	155	155	-	-	-	-	6,242	-	
Gisagara	3,737	-	4,021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,145	-	-	
Nyaruguru	-	-	-	-	723	-	-	20,134	-	15,955	17,515	14,177	17,459	1,939	-	1,939	-	-	-	-	6,653	
Huye	1,000	-	3,450	-	-	20,001	-	-	-	17,516	17,516	-	-	-	-	-	-	-	411	17,504	-	
Nyamagabe	257	-	-	2,863	-	-	-	10,024	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ruhango	3,750	1,383	3,537	-	-	11,312	-	-	-	21,345	19,116	22,165	17,459	204	204	-	-	-	-	7	-	
Muhanga	6,281	-	2,020	2,457	-	-	-	4,914	-	-	-	-	-	473	-	473	-	-	-	-	-	
Kamonyi	3,273	-	2,710	-	-	-	-	-	-	-	-	-	-	366	366	-	-	-	706	-	-	
Karongi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rutsiro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rubavu	-	-	-	-	-	-	-	19,796	939	17,516	17,516	-	-	707	707	-	332	-	-	-	-	
Nyabihu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ngororero	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rusizi	947	-	5,228	-	-	9,952	-	-	-	-	-	-	-	270	270	-	-	-	-	-	12,156	
Nyamasheke	-	-	3,931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rulindo	-	1,100	3,894	1,586	-	-	-	7,742	-	-	-	-	-	1,847	-	1,847	-	-	-	11,523	-	
Gakenke	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Musanze	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Burera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gicumbi	-	-	-	2,887	-	-	-	10,367	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rwamagana	1,797	746	4,887	-	577	18,449	1,640	1,779	-	19,591	20,212	14,411	15,750	849	873	197	88	-	214	4,500	2,612	
Nyagatare	3,767	-	3,921	-	587	48,554	6,982	6,104	-	21,353	21,490	11,224	-	1,137	1,124	2,223	-	135	943	5,611	12,095	
Gatsibo	2,137	1,016	3,541	-	405	-	9,763	7,835	-	14,896	15,404	9,433	17,459	502	502	-	-	600	663	3,645	-	
Kayanza	5,413	817	3,952	-	178	16,927	4,010	11,169	3,816	14,719	14,734	11,927	15,683	642	642	-	-	292	1,331	946	4,191	
Kirehe	5,470	-	4,467	2,280	549	-	-	-	-	-	-	-	-	1,734	1,734	-	-	-	454	8,997	-	
Ngoma	4,015	-	3,608	-	1,093	27,724	-	-	-	18,159	17,398	22,729	17,459	486	486	-	-	166	209	5,580	2,769	
Bugesera	2,014	247	5,955	-	518	-	-	8,796	-	15,890	17,007	10,650	19,408	761	762	722	405	497	440	2,034	993	
LSF	4,302	870	4,149	2,230	477	14,304	3,634	15,202	3,073	16,489	16,613	12,829	18,519	1,010	986	1,578	268	341	695	4,271	4,555	

Source: NISR, SAS 2022

Table 12: 2022 Season B_Crop production by crop type and district (MT)

District	Maize	Sorghum	Paddy rice	Wheat	Chia seeds	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
Nyarugenge	329	325	-	-	1	-	2,183	669	96	304	6,333	1,716	737	3,881	1,020	987	33	-	11	97	1,529	79	250	349
Gasabo	1,345	3,719	1,193	-	-	-	4,397	4,929	2,415	317	16,567	6,735	5,510	4,322	2,896	2,707	189	21	117	228	7,781	65	9,160	304
Kicukiro	498	905	210	-	1	-	1,295	3,912	72	430	5,275	2,125	1,279	1,870	1,048	1,032	17	-	26	163	540	24	117	1,071
Nyanza	2,242	5,344	2,389	-	33	73	27,364	20,559	1,409	2,344	10,668	2,521	3,312	4,835	6,531	4,921	1,610	20	333	854	4,028	294	3,823	2,235
Gisagara	2,631	4,093	11,857	-	-	136	45,420	13,249	489	882	18,471	4,983	4,978	8,510	7,987	6,709	1,277	20	215	1,875	3,315	2,503	716	434
Nyaruguru	646	2,103	-	376	2	-	19,796	32,975	8,882	3,326	6,887	2,619	1,371	2,897	3,001	426	2,575	188	1	667	2,520	114	9,872	1,678
Huye	787	6,233	3,276	-	-	162	18,201	22,513	1,329	2,245	9,889	2,746	2,471	4,671	4,211	2,505	1,706	49	73	1,270	2,396	27	1,247	2,166
Nyamagabe	952	3,501	51	2,418	-	-	14,380	46,762	18,734	3,379	11,078	1,072	1,725	8,282	3,341	551	2,791	1,156	-	677	5,199	363	431	1,144
Ruhango	994	2,417	3,299	-	-	129	111,553	11,673	1,082	4,483	17,718	2,394	2,705	12,619	6,740	4,496	2,244	84	748	1,915	2,690	348	4,116	11,773
Muhanga	608	135	277	8	-	-	46,192	45,097	304	15,206	59,110	7,332	6,267	45,511	4,456	2,731	1,725	41	-	985	3,776	401	2,741	9,969
Kamonyi	1,734	4,819	494	-	37	4	29,953	18,997	1,688	10,127	43,898	6,843	7,787	29,269	5,300	4,527	773	72	262	1,701	6,361	3,847	3,114	16,143
Karongi	724	1,670	-	184	-	-	28,212	39,092	3,288	8,988	47,685	2,924	4,091	40,670	7,091	1,678	5,414	420	-	969	5,657	427	6,889	902
Rutsiro	2,122	101	-	186	-	3	15,158	22,388	15,508	9,923	31,456	6,153	12,990	12,312	3,626	386	3,240	411	-	633	1,804	3,152	3,799	15,383
Rubavu	3,176	443	-	-	-	-	2,690	4,922	53,192	1,029	10,846	3,054	1,707	6,084	3,039	321	2,718	153	-	391	36,271	-	8,970	10,130
Nyabihu	4,800	-	-	1,520	-	-	745	17,741	68,033	305	2,688	694	1,195	799	2,675	12	2,663	187	-	46	16,188	642	2,929	322
Ngororero	3,682	26	-	1,535	-	-	4,648	47,285	6,337	8,642	40,647	3,138	4,503	33,007	3,580	314	3,266	100	-	410	2,960	48	924	2,193
Rusizi	1,279	98	7,393	-	6	-	88,649	18,460	510	5,191	16,325	7,466	2,061	6,798	8,294	5,254	3,040	57	117	640	2,240	1,105	712	9,329
Nyamasheke	524	17	1,350	-	-	-	45,616	31,639	235	6,683	15,875	3,001	2,339	10,535	4,390	780	3,609	149	413	1,082	3,483	1,374	-	9,026
Rulindo	1,169	5,675	64	36	-	6	16,001	22,227	5,871	920	31,386	9,298	8,446	13,642	8,832	2,962	5,869	150	4	200	4,613	704	2,440	3,863
Gakenke	1,212	407	68	499	-	-	21,969	80,048	5,432	10,836	64,929	13,955	18,711	32,263	11,768	614	11,153	139	15	538	3,394	1,945	1,302	5,968
Musanze	3,732	1,303	-	905	-	-	266	13,909	49,922	1,839	4,618	1,598	1,342	1,678	6,419	218	6,202	286	-	9	8,002	872	2,531	8,135
Burera	2,279	10,070	-	2,008	-	31	364	25,260	31,924	1,022	8,624	5,065	1,340	2,220	12,739	356	12,383	505	-	-	3,787	593	2,839	9
Gicumbi	2,375	18,447	-	181	115	-	8,577	43,552	17,831	1,142	25,577	10,126	6,043	9,409	10,073	1,761	8,312	797	176	60	3,752	611	13,372	512
Rwamagana	3,663	13,782	2,425	-	513	28	28,103	5,510	7,289	4,861	67,314	53,153	6,575	7,586	6,389	6,073	316	42	588	164	10,421	2,096	5,550	1,419
Nyagatare	30,524	7,905	6,433	-	188	12	30,287	7,523	2,717	691	66,265	44,736	3,432	18,097	21,622	20,651	970	31	1,954	1,403	10,808	672	506	7,423
Gatsibo	12,852	11,204	5,633	-	872	131	10,300	12,785	8,163	3,417	81,929	49,416	9,974	22,539	10,509	9,338	1,171	35	2,008	939	4,116	628	1,099	4,949
Kayonza	8,656	18,039	6,706	-	583	233	41,619	8,655	8,527	2,096	54,948	44,053	4,447	6,449	9,756	9,541	215	74	533	192	4,184	1,063	4,199	1,135
Kirehe	5,819	13,641	4,248	2	866	167	30,056	8,159	4,102	3,954	76,271	58,738	3,769	13,764	10,175	6,362	3,813	98	356	489	4,136	293	989	1,097
Ngoma	2,229	5,695	3,017	-	1,954	532	23,587	9,354	4,322	990	96,622	70,835	4,411	21,377	12,891	10,871	2,021	70	531	489	4,209	1,804	5,145	1,403
Bugesera	6,032	5,295	7,691	-	38	80	19,699	9,600	1,315	2,075	66,236	21,941	10,233	34,062	9,891	9,758	133	19	1,690	446	5,043	777	7,186	1,582
National	109,615	147,411	68,072	9,858	5,208	1,727	737,284	649,445	331,016	117,647	1,016,137	450,427	145,753	419,956	210,290	118,843	91,446	5,373	10,172	19,530	175,205	26,872	106,966	132,048

Source: NISR, SAS 2022

Table 13: 2022 Season B_ The 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	28.1	60.8	1.1	1.5	4.8	0.0	0.7	0.4	2.4	0.1	0.1
Sorghum	44.3	40.5	1.2	2.6	6.2	0.1	3.4	0.0	1.2	0.3	0.1
Paddy rice	77.4	15.8	0.7	0.1	2.8	0.0	0.7	0.0	0.2	1.3	1.0
Wheat	49.9	32.2	0.0	0.7	6.8	0.0	10.0	0.0	0.1	0.0	0.3
Other cereals	80.5	12.3	0.7	2.6	0.8	0.0	1.2	0.1	0.0	1.6	0.0
Sweet potato	23.6	66.3	1.2	0.7	4.6	0.1	0.0	3.3	0.1	0.0	0.1
Irish potato	37.6	44.7	0.6	0.5	4.0	0.0	12.1	0.0	0.0	0.3	0.1
Yam & Taro	25.5	63.5	0.7	0.5	5.0	0.1	4.3	0.0	0.0	0.0	0.3
Cassava	41.8	51.4	0.7	1.3	3.5	0.0	0.0	0.2	0.9	0.1	0.2
Bush bean	16.4	59.5	1.5	2.4	4.3	0.1	13.8	0.0	1.8	0.2	0.1
Climbing bean	14.6	60.1	0.8	0.9	6.5	0.0	15.7	0.0	1.2	0.1	0.1
Pea	37.2	49.1	0.1	0.7	2.7	0.0	9.9	0.0	0.2	0.1	0.1
Groundnut	40.7	36.5	0.2	1.3	3.6	0.2	16.4	0.0	1.0	0.0	0.0
Soybean	34.0	42.6	0.5	0.8	3.6	0.1	17.5	0.2	0.5	0.2	0.0
Cooking banana	39.6	55.2	1.0	0.3	3.6	0.0	0.0	0.0	0.0	0.0	0.2
Dessert banana	69.4	26.9	0.1	0.1	2.9	0.0	0.0	0.1	0.0	0.2	0.3
Banana for beer	77.6	15.7	0.1	0.0	5.7	0.0	0.0	0.0	0.0	0.6	0.2
Vegetables	82.4	12.3	0.0	0.1	2.5	0.0	0.8	1.2	0.0	0.6	0.2
Fruits	72.4	22.3	0.1	0.0	4.4	0.0	0.0	0.1	0.0	0.1	0.6
Fodder crops	8.0	0.1	2.6	0.0	0.4	0.4	0.0	86.7	0.1	0.0	1.7
Other crops	93.5	3.5	0.0	0.3	0.8	0.0	0.0	0.0	0.0	0.1	1.7

Source : NISR, SAS 2022

Table 14: 2022 Season B Cultivated area by cropping system and district (Percentage)

District	Cropping system	
	Pure Cropping	Mixed Cropping
Nyarugenge	23.12	76.88
Gasabo	32.40	67.60
Kicukiro	22.98	77.02
Nyanza	23.92	76.08
Gisagara	32.36	67.64
Nyaruguru	45.07	54.93
Huye	19.27	80.73
Nyamagabe	53.63	46.37
Ruhango	35.94	64.06
Muhanga	35.60	64.40
Kamonyi	29.20	70.80
Karongi	45.65	54.35
Rutsiro	47.70	52.30
Rubavu	64.00	36.00
Nyabihu	60.33	39.67
Ngororero	49.96	50.04
Rusizi	36.51	63.49
Nyamasheke	40.20	59.80
Rulindo	30.24	69.76
Gakenke	29.15	70.85
Musanze	56.21	43.79
Burera	72.79	27.21
Gicumbi	43.45	56.55
Rwamagana	17.52	82.48
Nyagatare	32.12	67.88
Gatsibo	27.80	72.20
Kayonza	26.23	73.77
Kirehe	35.22	64.78
Ngoma	34.49	65.51
Bugesera	22.41	77.59
National	36.29	63.71
SSF	35.03	64.97
LSF	95.83	4.17

Source: NISR, SAS 2022

Table 15: 2022 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	Other season
Nyarugenge	1.04	2.59	3.97	26.77	18.83	6.56	1.55	1.21	37.48
Gasabo	1.91	9.33	5.73	25.51	12.13	3.82	1.91	1.57	38.09
Kicukiro	1.13	11.77	1.61	18.71	17.58	5	1.29	0.32	42.58
Nyanza	1.07	5.67	3.54	27.3	15.42	4.54	0.8	1.6	40.05
Gisagara	2.00	7.25	3.55	25.17	11.32	5.26	1.92	1.48	42.04
Nyaruguru	1.21	8.19	4.56	7.38	14.09	11.41	4.97	7.11	41.07
Huye	1.68	6.57	10.86	25	8.33	4.82	1.22	1.99	39.53
Nyamagabe	0.76	5.06	5.06	11.5	13.65	12.52	9.86	7.59	34.01
Ruhango	1.33	5.96	4.63	27.33	15.07	3.99	1.05	2.38	38.26
Muhanga	0.18	2.00	2.99	7.53	14.7	7.44	3.09	3.54	58.53
Kamonyi	0.58	7.65	3.89	31.65	7.52	3.37	1.10	1.75	42.48
Karongi	1.17	2.45	4.79	17.64	15.89	7.83	2.45	3.39	44.39
Rutsiro	1.43	2.34	4.81	13.65	14.43	8.19	4.55	6.37	44.21
Rubavu	1.18	3.53	3.82	20.44	14.26	13.09	9.12	8.53	26.03
Nyabihu	7.62	5.22	2.68	14.39	14.67	17.77	9.73	7.62	20.31
Ngororero	1.48	2.37	2.77	7.52	23.44	8.01	4.06	4.85	45.5
Rusizi	0.08	1.03	1.19	11.3	16.71	13.21	1.67	0.88	53.94
Nyamasheke	0.70	2.09	1.39	10.96	13.25	8.96	4.08	0.4	58.17
Rulindo	0.93	9.18	7.69	9.45	8.16	14.18	7.88	2.97	39.57
Gakenke	0.94	1.69	2.26	3.70	7.71	13.86	7.52	5.45	56.87
Musanze	1.12	5.33	2.35	8.43	8.92	18.59	14.87	18.71	21.69
Burera	2.27	12.04	11.05	8.36	12.46	10.91	21.53	8.78	12.61
Gicumbi	3.16	9.95	9.26	13.27	9.95	13.58	6.40	5.32	29.09
Rwamagana	1.11	10.27	3.18	16.88	14.75	7.67	1.25	1.83	43.06
Nyagatare	0.13	1.61	2.02	13.92	25.82	26.36	4.10	0.74	25.29
Gatsibo	0.61	5.26	2.45	9.04	19.66	17.62	2.25	0.82	42.29
Kayonza	2.77	9.51	2.47	9.99	19.75	16.8	6.80	1.51	30.40
Kirehe	1.83	7.49	4.57	9.74	21.19	10.54	1.52	0.55	42.57
Ngoma	0.55	5.31	1.71	11.23	16.47	16.05	3.78	0.79	44.11
Bugesera	1.61	5.57	3.90	11.13	20.92	20.08	4.84	0.57	31.37
National	1.36	5.89	4.00	15.06	15.21	11.49	4.29	3.01	39.69

Source: NISR, SAS 2022

Table 16: 2022 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	Between 16-31/03	After 31/03	Other season
Maize	0.64	2.79	4.07	32.04	37.28	17.83	3.54	1.45	0.36
Sorghum	6.40	48.25	24.90	14.61	4.60	0.67	0.18	-	0.39
Paddy rice	17.37	29.34	15.57	17.96	12.57	2.99	2.99	0.60	0.60
Wheat	-	-	1.79	1.19	1.79	16.07	27.38	51.19	0.60
Other cereals	0.48	3.63	3.87	28.81	27.36	25.42	7.75	2.66	-
Sweet potato	6.45	11.40	5.18	12.48	8.81	9.47	5.70	13.52	26.99
Irish potato	2.94	3.90	4.32	18.37	19.51	22.15	14.47	14.29	0.06
Taro & Yams	3.84	3.62	3.73	7.68	2.56	4.26	1.81	3.41	69.08
Cassava	-	2.94	2.13	5.60	2.66	3.12	0.99	2.09	80.47
Bush bean	-	0.67	1.36	27.38	34.73	28.93	6.45	0.46	0.02
Climbing bean	0.07	0.59	1.81	21.94	29.90	28.47	14.34	2.85	0.03
Pea	1.45	3.19	2.03	15.07	18.55	22.90	16.52	20.00	0.29
Groundnut	-	1.91	3.29	37.44	39.17	15.25	2.77	0.17	-
Soybean	0.12	2.49	5.41	41.25	30.68	14.76	4.25	1.03	-
Cooking banana	-	0.13	-	0.10	-	0.13	-	0.10	99.54
Dessert banana	-	0.03	0.03	0.10	0.03	0.07	-	0.07	99.67
Banana for beer	-	0.14	-	0.17	0.03	-	-	0.03	99.62
Vegetables	3.22	6.26	5.72	16.82	12.88	19.32	11.81	14.49	9.48
Fruits	-	0.94	1.41	1.88	0.94	2.82	0.94	0.94	90.14
Fodder crops	1.71	2.40	1.03	8.90	2.74	4.11	1.37	3.08	74.66
Other crops	0.11	0.74	0.21	0.95	1.79	2.95	1.48	3.27	88.51

Source: NISR, SAS 2022

Table 17: 2022 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	9.29	9.29		23.89	23.89		23.40	23.40	
Gasabo	10.19	8.92	50.00	20.19	18.16	41.67	19.26	17.73	85.77
Kicukiro	7.92	7.04	66.67	22.27	21.65	42.86	25.54	23.98	93.11
Nyanza	8.86	8.20	57.14	19.03	18.31	53.85	20.23	19.23	70.92
Gisagara	7.53	5.35	68.75	11.62	9.89	68.75	16.85	10.23	76.38
Nyaruguru	4.42	3.45	75.00	10.98	8.66	81.82	9.42	8.89	98.31
Huye	8.10	5.33	73.68	13.39	11.05	55.17	13.53	11.10	79.48
Nyamagabe	2.97	2.73	100.00	5.38	5.21	33.33	5.10	5.06	48.24
Ruhango	6.31	4.24	92.31	9.57	7.23	89.47	9.12	6.62	99.93
Muhanga	4.09	3.16	80.00	8.13	7.43	66.67	7.51	7.03	91.16
Kamonyi	8.27	7.62	80.00	16.86	15.99	100.00	16.55	16.01	100.00
Karongi	6.00	5.77	100.00	9.28	8.90	100.00	8.50	8.44	100.00
Rutsiro	2.72	2.72		9.35	9.35		9.23	9.23	
Rubavu	15.70	15.56	33.33	17.83	17.89	14.29	20.10	20.09	22.25
Nyabihu	16.32	16.32		22.37	22.37		23.72	23.72	
Ngororero	9.44	9.44		14.71	14.71		13.73	13.73	
Rusizi	3.58	2.80	40.00	9.04	8.51	30.77	12.19	8.11	84.87
Nyamasheke	4.20	2.85	75.00	8.19	6.85	77.78	7.62	6.78	67.77
Rulindo	5.42	5.01	40.00	11.99	11.06	46.15	10.79	10.70	41.48
Gakenke	2.81	2.81		8.50	8.50		8.44	8.44	
Musanze	10.66	10.66		12.33	12.33		14.31	14.31	
Burera	3.77	3.77		5.92	5.92		5.51	5.51	
Gicumbi	5.85	5.70	50.00	10.50	10.27	50.00	10.28	10.28	14.58
Rwamagana	9.51	7.84	42.86	23.03	20.97	34.15	23.37	22.27	80.03
Nyagatare	25.78	22.51	75.00	37.66	30.66	80.39	35.21	33.20	94.63
Gatsibo	11.82	9.91	71.43	19.32	16.54	62.00	21.84	18.76	97.59
Kayonza	17.77	14.69	67.86	36.47	30.70	58.62	34.17	31.86	88.37
Kirehe	3.09	1.94	88.89	5.16	4.10	60.00	7.14	4.68	76.86
Ngoma	5.21	3.89	56.25	8.24	5.40	50.00	6.98	5.42	75.47
Bugesera	18.20	16.19	54.55	39.71	35.86	62.50	39.26	37.64	87.97
National	8.68	7.54	64.66	16.22	14.16	57.64	17.04	15.55	84.90

Source : NISR, SAS 2022

Table 18: 2022 Season B_ Seed type by crops (Percentage)

Crop	Traditional seeds	Improved seeds	Total
Maize	51.32	48.68	100
Sorghum	100.00	-	100
Paddy rice	33.77	66.23	100
Wheat	86.23	13.77	100
Other cereals	84.50	15.50	100
Sweet potato	99.86	0.14	100
Irish potato	97.65	2.35	100
Taro & Yams	99.89	0.11	100
Cassava	99.72	0.28	100
Bush bean	99.45	0.55	100
Climbing bean	99.86	0.14	100
Pea	99.71	0.29	100
Groundnut	100.00	-	100
Soybean	97.26	2.74	100
Cooking banana	99.77	0.23	100
Dessert banana	99.43	0.57	100
Banana for beer	99.65	0.35	100
Vegetables	52.60	47.40	100
Fruits	72.77	27.23	100
Fodder crops	87.29	12.71	100
Other crops	67.13	32.87	100
National	92.34	7.66	100

Source: NISR, SAS 2022

Table 19: 2022 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	13.56	5.08	40.68	8.47	28.81	1.69	1.69	100
Gasabo	7.29	3.13	79.17	1.04	7.29	1.04	1.04	100
Kicukiro	1.89	0	83.02	0	11.32	3.77	0	100
Nyanza	6.78	15.25	18.64	52.54	3.39	3.39	0	100
Gisagara	8.11	12.16	35.14	32.43	0	12.16	0	100
Nyaruguru	26.47	20.59	8.82	8.82	14.71	17.65	2.94	100
Huye	13.33	16	24	18.67	14.67	12	1.33	100
Nyamagabe	16	0	24	48	0	12	0	100
Ruhango	4.92	13.11	21.31	13.11	24.59	22.95	0	100
Muhanga	13.16	5.26	7.89	36.84	10.53	26.32	0	100
Kamonyi	15.7	3.31	39.67	18.18	14.88	5.79	2.48	100
Karongi	32.5	0	32.5	32.5	2.5	0	0	100
Rutsiro	36	8	36	12	4	4	0	100
Rubavu	3.49	6.98	79.07	5.81	4.65	0	0	100
Nyabihu	6.19	8.85	51.33	24.78	7.08	1.77	0	100
Ngororero	3.85	3.85	62.82	29.49	0	0	0	100
Rusizi	44.74	5.26	2.63	21.05	18.42	7.89	0	100
Nyamasheke	25	10.71	17.86	32.14	0	14.29	0	100
Rulindo	8.06	1.61	54.84	12.9	20.97	1.61	0	100
Gakenke	8.62	0	55.17	27.59	6.9	1.72	0	100
Musanze	0	2.7	37.84	13.51	24.32	14.86	6.76	100
Burera	5.26	0	55.26	26.32	7.89	2.63	2.63	100
Gicumbi	1.39	9.72	54.17	20.83	9.72	4.17	0	100
Rwamagana	14.75	6.56	50.82	10.93	12.57	3.83	0.55	100
Nyagatare	8.72	17.45	47.98	18.38	2.18	4.36	0.93	100
Gatsibo	6.51	8.88	21.3	53.25	8.28	1.78	0	100
Kayonza	4.96	12.21	40.46	32.06	4.96	2.67	2.67	100
Kirehe	19.51	4.88	14.63	29.27	0	31.71	0	100
Ngoma	11.94	8.96	19.4	14.93	19.4	25.37	0	100
Bugesera	7.62	2.44	50.3	27.13	4.88	7.01	0.61	100
National	9.59	8.21	42.76	23.86	8.42	6.24	0.92	100

Source: NISR, SAS 2022

Table 20: 2022 Season B_Percentage of crops by source of seeds

Crop	Government (MINAGRI/RAB/	Recognized			Market	Agriculture cooperative	Other source	Total
		seed multipliers	Agro dealers	NGOs/				
Maize	2.85	2.16	53.48	32.86	6.43	1.79	0.42	100
Paddy rice	3.45	34.48	1.72	-	-	60.34	-	100
Wheat	24.00	4.00	40.00	20.00	-	12.00	-	100
Other cereals	4.55	18.18	7.58	13.64	7.58	45.45	3.03	100
Sweet potato	25.00	75.00	-	-	-	-	-	100
Irish potato	14.00	56.00	4.00	4.00	-	16.00	6.00	100
Cassava	33.33	44.44	-	11.11	-	-	11.11	100
Bush bean	33.33	26.67	6.67	30.00	3.33	-	-	100
Climbing bean	66.67	-	-	33.33	-	-	-	100
Pea	-	-	-	-	100.00	-	-	100
Soybean	47.92	25.00	14.58	8.33	2.08	2.08	-	100
Cooking banana	-	66.67	-	-	-	33.33	-	100
Dessert banana	26.32	63.16	-	-	-	10.53	-	100
Banana for beer	5.56	83.33	-	-	5.56	5.56	-	100
Vegetables	1.47	4.04	55.51	3.31	31.62	1.47	2.57	100
Fruits	20.93	32.56	30.23	6.98	9.30	-	-	100
Fodder crops	39.29	17.86	25.00	3.57	14.29	-	-	100
Other crops	61.95	12.68	-	4.39	7.32	11.22	2.44	100
National	9.58	8.24	42.73	23.85	8.45	6.23	0.92	100

Source: NISR, SAS 2022

Table 21: 2022 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	58.31	58.31		52.17	52.17		47.79	47.79	
Gasabo	60.90	60.90	60.00	59.74	59.74	50.00	60.03	59.51	82.85
Kicukiro	47.64	47.63	66.67	45.86	45.86	71.43	45.87	46.68	10.79
Nyanza	59.86	59.86	57.14	56.11	56.11	69.23	53.01	53.01	52.92
Gisagara	45.31	45.31	62.50	42.59	42.59	62.50	45.71	44.22	59.11
Nyaruguru	81.48	81.48	100.00	77.91	77.91	81.82	76.30	76.17	98.31
Huye	57.96	57.96	78.95	56.77	56.76	68.97	55.43	54.87	70.58
Nyamagabe	63.94	63.94	100.00	61.44	61.44	100.00	63.60	63.56	100.00
Ruhango	54.08	54.08	38.46	49.76	49.76	31.58	48.65	48.39	58.32
Muhanga	66.13	66.13	100.00	61.68	61.68	100.00	60.84	60.62	100.00
Kamonyi	53.54	53.54	80.00	48.88	48.88	57.14	52.08	51.80	94.05
Karongi	60.48	60.48	100.00	59.00	59.00	100.00	63.77	63.75	100.00
Rutsiro	58.35	58.35		54.85	54.85		65.03	65.03	
Rubavu	25.32	25.32	66.67	24.49	24.49	42.86	28.20	28.15	64.30
Nyabihu	54.87	54.87		53.62	53.62		60.53	60.53	
Ngororero	73.86	73.86		71.26	71.26		77.94	77.94	
Rusizi	50.87	50.88	30.00	48.44	48.44	23.08	45.01	46.27	22.69
Nyamasheke	70.62	70.62	87.50	68.59	68.59	77.78	70.09	69.78	91.83
Rulindo	82.77	82.77	80.00	78.11	78.11	61.54	83.41	83.46	65.22
Gakenke	70.59	70.59		70.54	70.54		75.03	75.03	
Musanze	61.78	61.78		59.84	59.84		61.27	61.27	
Burera	67.47	67.47		66.49	66.49		66.55	66.55	
Gicumbi	74.81	74.81	100.00	71.93	71.93	50.00	71.45	71.49	13.93
Rwamagana	38.22	38.22	50.00	36.49	36.49	26.83	42.48	43.01	15.04
Nyagatare	33.04	33.04	27.78	30.89	30.89	35.29	31.55	32.42	5.60
Gatsibo	63.39	63.39	66.67	59.00	59.00	62.00	58.65	58.40	64.77
Kayonza	40.49	40.48	64.29	37.72	37.72	31.03	36.06	37.15	10.42
Kirehe	33.28	33.27	100.00	30.80	30.80	66.67	32.00	30.38	77.91
Ngoma	23.04	23.04	75.00	21.47	21.47	52.08	27.68	26.64	73.16
Bugesera	37.88	37.88	42.42	35.74	35.74	42.50	33.83	33.05	57.32
National	57.92	57.92	58.66	55.2	55.2	43.36	52.05	52.12	48.92

Source : NISR, SAS 2022

Table 22: 2022 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	11.48	11.48		5.90	5.90		8.34	8.34	
Gasabo	17.54	16.51	50.00	13.78	13.78	19.44	16.42	14.97	79.53
Kicukiro	31.68	31.66	33.33	23.89	23.89	28.57	33.43	32.14	89.21
Nyanza	11.54	10.55	85.71	7.64	7.63	46.15	11.15	9.45	96.92
Gisagara	21.29	18.93	87.50	16.26	16.26	87.50	23.96	15.73	98.05
Nyaruguru	47.28	46.90	75.00	44.73	44.73	63.64	46.77	46.50	92.77
Huye	19.83	16.67	94.74	15.59	15.59	62.07	18.48	15.66	94.84
Nyamagabe	30.45	30.27	100.00	24.63	24.63	100.00	26.31	26.24	100.00
Ruhango	10.99	8.86	100.00	6.38	6.38	73.68	8.94	6.46	99.16
Muhanga	16.07	15.05	100.00	10.03	10.03	100.00	12.56	12.06	100.00
Kamonyi	9.69	9.06	80.00	7.07	7.07	57.14	8.08	7.53	94.05
Karongi	23.26	23.32	0.00	15.87	15.87	0.00	20.95	20.97	0.00
Rutsiro	37.23	37.23		26.88	26.88		35.62	35.62	
Rubavu	42.28	42.09	66.67	32.32	32.32	28.57	44.28	44.31	24.26
Nyabihu	56.22	56.22		42.58	42.58		53.83	53.83	
Ngororero	35.20	35.20		33.20	33.20		34.54	34.54	
Rusizi	33.75	32.98	70.00	31.99	31.99	53.85	34.41	31.47	86.78
Nyamasheke	46.74	45.73	100.00	43.17	43.17	88.89	45.22	44.46	99.84
Rulindo	35.61	35.08	80.00	28.20	28.20	76.92	33.10	32.93	88.85
Gakenke	39.54	39.54		34.04	34.04		37.53	37.53	
Musanze	42.64	42.64		37.67	37.67		43.27	43.27	
Burera	34.10	34.10		27.27	27.27		31.27	31.27	
Gicumbi	24.21	23.95	100.00	22.83	22.83	75.00	21.91	21.87	89.94
Rwamagana	22.88	21.71	46.43	16.10	16.10	12.20	20.84	19.85	71.55
Nyagatare	35.58	32.78	77.78	20.53	20.52	56.86	31.33	29.27	92.48
Gatsibo	24.19	22.98	61.90	15.47	15.47	38.00	22.89	20.51	81.45
Kayonza	29.55	26.54	78.57	18.53	18.53	31.72	26.78	24.14	88.73
Kirehe	23.05	22.32	77.78	15.63	15.63	73.33	22.84	20.25	96.35
Ngoma	9.15	7.28	81.25	4.11	4.11	37.50	8.48	6.58	91.61
Bugesera	25.63	24.37	48.48	18.28	18.28	24.17	24.96	23.07	81.80
National	27.53	26.62	72.44	21.90	21.90	38.47	26.03	24.61	90.43

Source: NISR, SAS 2022

Table 23: 2022 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	-	52.38	4.76	42.86	-	-	100.0
Gasabo	1.75	91.23	-	3.51	-	3.51	100.0
Kicukiro	-	87.50	3.13	9.38	-	-	100.0
Nyanza	6.67	28.33	56.67	1.67	6.67	-	100.0
Gisagara	1.01	34.34	42.42	5.05	17.17	-	100.0
Nyaruguru	4.23	26.76	64.79	2.82	1.41	-	100.0
Huye	3.23	49.46	31.18	10.75	5.38	-	100.0
Nyamagabe	2.42	50.81	38.71	2.42	5.65	-	100.0
Ruhango	-	31.15	37.70	19.67	11.48	-	100.0
Muhanga	1.47	17.65	55.88	1.47	20.59	2.94	100.0
Kamonyi	-	42.59	40.74	9.26	5.56	1.85	100.0
Karongi	11.22	26.53	61.22	-	1.02	-	100.0
Rutsiro	1.46	70.07	26.28	2.19	-	-	100.0
Rubavu	-	77.84	7.19	14.97	-	-	100.0
Nyabihu	-	87.56	11.06	1.38	-	-	100.0
Ngororero	2.55	56.69	39.49	1.27	-	-	100.0
Rusizi	3.70	9.88	72.22	11.73	1.23	1.23	100.0
Nyamasheke	2.97	19.80	71.78	3.47	0.99	0.99	100.0
Rulindo	2.65	68.87	18.54	8.61	0.66	0.66	100.0
Gakenke	2.48	44.63	39.26	12.81	0.83	-	100.0
Musanze	-	77.00	13.00	10.00	-	-	100.0
Burera	-	53.33	18.79	26.06	1.82	-	100.0
Gicumbi	2.07	66.90	26.90	2.07	1.38	0.69	100.0
Rwamagana	1.48	57.04	24.44	13.33	2.96	0.74	100.0
Nyagatare	-	83.50	14.56	-	1.94	-	100.0
Gatsibo	5.45	38.18	44.85	7.27	4.24	-	100.0
Kayonza	2.07	51.03	38.62	6.21	1.38	0.69	100.0
Kirehe	7.59	31.01	50.63	3.16	5.06	2.53	100.0
Ngoma	5.08	61.02	22.03	6.78	3.39	1.69	100.0
Bugesera	3.68	55.21	26.99	6.13	5.52	2.45	100.0
National	2.45	52.85	34.11	7.28	2.76	0.56	100.0

Source: NISR, SAS 2022

Table 24: 2022 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	1.35	66.84	19.44	7.91	4.12	0.34	100
NPK 20-10-10	59.57	17.02	8.51	-	10.64	4.26	100
NPK 25-5-5	30.77	30.77	-	15.38	15.38	7.69	100
NPK 22-6-12	55.00	22.50	7.50	-	15.00	-	100
Other NPK	2.90	92.75	-	2.90	1.45	-	100
Urea	1.09	53.64	34.43	7.32	2.95	0.57	100
liquid urea (Mbonea M)	-	83.33	8.33	8.33	-	-	100
DAP	1.12	47.86	43.17	5.85	1.76	0.24	100
TSP	-	100.00	-	-	-	-	100
KCL/MOP	33.33	50.00	16.67	-	-	-	100
Omax	-	71.43	10.71	17.86	-	-	100
Winner	-	100.00	-	-	-	-	100
Yara Viva	-	62.50	-	12.50	-	25.00	100
Amidas	-	39.39	21.21	3.03	30.30	6.06	100
Cereal	-	50.00	14.00	2.00	30.00	4.00	100
Boaster	-	-	-	-	100.00	-	100
DI Grow	-	77.27	-	9.09	13.64	-	100
Other type of fertilizer	3.57	69.64	21.43	1.79	1.79	1.79	100
Total	2.07	54.21	33.36	6.64	3.20	0.51	100

Source: NISR, SAS 2022

Table 25: 2022 Season B Percentage of plots by type of inorganic fertilizer per district

District	NPK	Urea	DAP	KCL/MOP	Others	Total
Nyarugenge	14.29	51.43	28.57	-	5.71	100
Gasabo	19.61	44.12	35.29	-	0.98	100
Kicukiro	7.84	44.12	46.08	-	1.96	100
Nyanza	18.18	43.43	38.38	-	-	100
Gisagara	18.59	40.38	33.33	-	7.69	100
Nyaruguru	16.51	25.00	57.08	-	1.42	100
Huye	23.88	35.82	35.07	-	5.22	100
Nyamagabe	25.13	30.89	43.46	-	0.52	100
Ruhango	24.76	44.76	28.57	1.90	-	100
Muhanga	14.95	32.71	49.53	-	2.80	100
Kamonyi	17.81	42.47	34.25	1.37	4.11	100
Karongi	34.96	19.51	45.53	-	-	100
Rutsiro	37.89	24.21	37.37	-	0.53	100
Rubavu	54.09	19.84	23.35	-	2.72	100
Nyabihu	44.65	30.58	20.80	-	3.98	100
Ngororero	8.68	39.25	52.08	-	-	100
Rusizi	18.07	27.31	52.10	-	2.52	100
Nyamasheke	14.63	27.21	57.48	-	0.68	100
Rulindo	23.93	40.60	33.33	1.71	0.43	100
Gakenke	10.51	32.61	56.60	-	0.27	100
Musanze	38.01	23.05	31.78	-	7.17	100
Burera	31.82	22.73	42.93	-	2.53	100
Gicumbi	20.62	37.11	41.24	-	1.03	100
Rwamagana	23.00	39.91	33.33	-	3.76	100
Nyagatare	4.80	45.80	44.36	-	5.04	100
Gatsibo	23.92	40.00	32.16	0.39	3.53	100
Kayonza	14.33	42.33	35.67	1.33	6.33	100
Kirehe	4.21	50.00	41.12	-	4.67	100
Ngoma	18.87	46.23	31.13	-	3.77	100
Bugesera	11.22	38.10	50.34	-	0.34	100
National	21.45	34.88	40.75	0.20	2.73	100

Source: NISR, SAS 2022

Table 26: 2022 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	7.10	7.10		3.03	3.03		4.98	4.98	
Gasabo	14.77	12.70	80.00	10.86	10.86	36.11	12.56	10.97	82.23
Kicukiro	9.90	9.55	33.33	4.57	4.57	14.29	10.65	9.85	45.36
Nyanza	9.63	8.59	85.71	8.24	8.24	46.15	9.17	7.43	96.92
Gisagara	11.83	9.13	87.50	6.76	6.76	87.50	16.60	7.56	98.05
Nyaruguru	15.65	14.48	100.00	12.31	12.31	72.73	15.88	15.41	93.33
Huye	8.96	5.56	89.47	6.11	6.10	58.62	8.72	5.66	91.54
Nyamagabe	18.07	17.87	100.00	12.68	12.68	100.00	16.68	16.60	100.00
Ruhango	8.47	6.83	76.92	7.65	7.65	63.16	7.46	5.12	92.67
Muhanga	11.51	10.44	100.00	7.16	7.16	100.00	8.63	8.11	100.00
Kamonyi	7.72	6.88	100.00	5.90	5.90	100.00	6.74	6.13	100.00
Karongi	11.03	10.82	100.00	8.06	8.06	50.00	9.88	9.89	6.60
Rutsiro	21.47	21.47		14.57	14.57		21.96	21.96	
Rubavu	46.08	45.92	66.67	35.33	35.33	28.57	48.04	48.08	24.26
Nyabihu	46.63	46.63		33.62	33.62		45.35	45.35	
Ngororero	14.35	14.35		12.18	12.18		14.22	14.22	
Rusizi	8.81	7.28	80.00	4.93	4.93	61.54	10.99	6.69	87.48
Nyamasheke	6.05	4.27	100.00	3.80	3.79	88.89	5.39	4.06	99.84
Rulindo	21.46	20.76	80.00	14.13	14.13	53.85	19.00	18.82	75.64
Gakenke	20.92	20.92		16.95	16.95		19.63	19.63	
Musanze	48.40	48.40		43.55	43.55		49.40	49.40	
Burera	26.99	26.99		22.74	22.74		24.95	24.95	
Gicumbi	16.53	16.25	100.00	15.32	15.32	50.00	14.71	14.67	79.23
Rwamagana	15.42	13.17	60.71	9.24	9.24	24.39	13.44	12.27	73.55
Nyagatare	10.88	6.26	80.56	4.10	4.09	69.61	8.60	5.80	92.07
Gatsibo	13.72	12.48	52.38	6.92	6.92	28.00	13.65	11.05	77.54
Kayonza	16.53	12.94	75.00	8.75	8.75	29.66	14.41	11.30	87.61
Kirehe	7.34	6.25	88.89	4.42	4.42	73.33	7.92	5.86	66.39
Ngoma	5.84	4.21	68.75	2.80	2.80	33.33	5.83	3.96	87.86
Bugesera	10.60	8.01	57.58	6.17	6.16	34.17	10.22	7.86	81.63
National	15.94	14.74	74.91	11.93	11.92	42.73	14.59	13.01	86.35

Source : NISR, SAS 2022

Table 27: 2022 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	61.54	-	-	7.69	-	30.77	-	-	100
Gasabo	20.00	1.82	1.82	7.27	-	61.82	-	7.27	100
Kicukiro	12.00	-	-	4.00	-	76.00	4.00	4.00	100
Nyanza	13.46	-	-	15.38	-	69.23	-	1.92	100
Gisagara	15.79	-	3.51	26.32	-	47.37	1.75	5.26	100
Nyaruguru	37.93	-	-	17.24	-	13.79	-	31.03	100
Huye	13.95	2.33	-	39.53	-	41.86	-	2.33	100
Nyamagabe	46.99	-	-	20.48	-	28.92	-	3.61	100
Ruhango	10.00	-	-	22.00	-	60.00	-	8.00	100
Muhanga	4.08	2.04	4.08	26.53	-	59.18	2.04	2.04	100
Kamonyi	30.43	2.17	6.52	4.35	-	45.65	-	10.87	100
Karongi	43.75	-	-	22.92	-	18.75	-	14.58	100
Rutsiro	85.56	-	-	5.56	-	6.67	-	2.22	100
Rubavu	93.63	-	-	0.98	-	4.41	-	0.98	100
Nyabihu	82.14	1.02	1.02	10.20	-	4.59	-	1.02	100
Ngororero	38.81	-	-	5.97	-	52.24	-	2.99	100
Rusizi	23.81	-	4.76	33.33	-	23.81	-	14.29	100
Nyamasheke	15.38	-	-	53.85	-	23.08	-	7.69	100
Rulindo	45.92	1.02	-	5.10	-	41.84	-	6.12	100
Gakenke	8.03	2.19	5.11	26.28	-	51.09	-	7.30	100
Musanze	66.26	-	3.70	16.05	-	13.17	-	0.82	100
Burera	67.65	0.74	-	11.76	-	12.50	-	7.35	100
Gicumbi	45.10	1.96	-	11.76	-	35.29	-	5.88	100
Rwamagana	26.61	3.67	9.17	8.26	-	32.11	3.67	16.51	100
Nyagatare	9.43	-	11.32	22.64	-	23.58	1.89	31.13	100
Gatsibo	24.00	-	-	7.00	-	33.00	1.00	35.00	100
Kayanza	22.43	-	4.67	14.02	-	49.53	1.87	7.48	100
Kirehe	17.54	-	8.77	21.05	-	35.09	1.75	15.79	100
Ngoma	30.95	-	9.52	14.29	2.38	30.95	2.38	9.52	100
Bugesera	12.77	-	8.51	12.77	-	51.06	8.51	6.38	100
National	43.12	0.67	2.84	14.28	0.04	29.86	0.87	8.32	100

Source: NISR, SAS 2022

Table 28: 2022 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	90.71	90.71		-	-		6.56	6.56		58.04	58.04	
Gasabo	89.20	89.17	90.00	0.62	0.32	10.00	6.17	4.78	50.00	62.50	62.20	72.73
Kicukiro	78.71	78.39	100.00	0.99	1.01	-	8.42	8.04	33.33	61.54	61.30	75.00
Nyanza	96.72	96.68	100.00	0.19	0.20	-	11.95	10.94	85.71	43.29	43.55	25.00
Gisagara	92.04	91.98	93.75	-	-	-	20.65	19.15	62.50	47.50	49.04	-
Nyaruguru	98.98	98.97	100.00	-	-	-	4.76	4.14	50.00	51.46	51.00	70.00
Huye	91.47	91.11	100.00	-	-	-	18.12	14.89	94.74	47.51	48.10	34.78
Nyamagabe	99.50	99.50	100.00	0.25	0.25	-	4.95	4.96	-	42.22	42.11	100.00
Ruhango	94.05	93.91	100.00	0.18	0.18	-	8.11	6.64	69.23	48.04	48.39	33.33
Muhanga	97.12	97.08	100.00	-	-	-	12.74	12.17	60.00	39.16	38.73	71.43
Kamonyi	89.93	89.84	100.00	0.36	0.36	-	9.17	8.89	40.00	38.84	39.11	14.29
Karongi	93.76	93.75	100.00	0.72	0.72	-	8.63	8.41	100.00	49.72	49.63	100.00
Rutsiro	97.55	97.55		-	-		2.17	2.17		50.85	50.85	
Rubavu	95.44	95.41	100.00	-	-	-	-	-	-	43.63	43.33	75.00
Nyabihu	97.93	97.93		-	-		0.26	0.26		72.93	72.93	
Ngororero	95.73	95.73		-	-		0.90	0.90		40.56	40.56	
Rusizi	90.53	90.32	100.00	-	-	-	6.74	5.38	70.00	58.72	59.27	30.00
Nyamasheke	97.44	97.39	100.00	-	-	-	3.73	2.38	75.00	66.30	66.85	33.33
Rulindo	95.28	95.23	100.00	0.24	-	20.00	11.79	11.22	60.00	58.40	58.59	40.00
Gakenke	98.18	98.18		0.17	0.17		4.62	4.62		60.15	60.15	
Musanze	94.03	94.03		-	-		1.49	1.49		47.87	47.87	
Burera	94.35	94.35		0.21	0.21		0.63	0.63		31.78	31.78	
Gicumbi	96.15	96.14	100.00	0.17	0.17	-	6.19	6.21	-	47.01	46.92	66.67
Rwamagana	92.53	92.34	96.43	0.17	0.18	-	11.21	9.45	46.43	76.83	77.00	73.33
Nyagatare	80.45	80.07	86.11	5.71	2.03	61.11	6.75	3.32	58.33	57.83	58.18	52.38
Gatsibo	95.72	95.58	100.00	1.33	0.46	28.57	9.60	8.23	52.38	63.69	63.55	68.18
Kayonza	65.70	63.60	100.00	2.48	0.22	39.29	12.60	8.33	82.14	46.01	46.17	43.33
Kirehe	87.04	87.01	88.89	0.44	0.30	11.11	9.72	8.66	88.89	58.05	58.65	18.18
Ngoma	86.73	86.39	100.00	0.32	0.16	6.25	9.00	7.78	56.25	67.43	67.99	47.37
Bugesera	75.63	75.13	84.85	0.32	0.17	3.03	12.34	10.18	51.52	57.01	56.55	65.00
National	91.39	91.32	95.05	0.55	0.25	15.55	7.98	6.88	61.84	53.21	53.29	49.54

Source : NISR, SAS 2022

Table 29: 2022 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	-	-	-	-	-	100.0
Gasabo	26.7	6.7	6.7	-	-	60.0
Kicukiro	50.0	-	-	-	-	50.0
Nyanza	21.4	28.6	-	-	-	50.0
Gisagara	17.4	47.8	-	-	-	34.8
Nyaruguru	62.5	-	-	-	-	37.5
Huye	17.4	73.9	-	-	-	8.7
Nyamagabe	-	66.7	-	-	-	33.3
Ruhango	7.7	53.9	-	-	-	38.5
Muhanga	14.3	14.3	-	-	-	71.4
Kamonyi	-	18.2	-	-	-	81.8
Karongi	16.7	-	-	-	-	83.3
Ngororero	-	-	-	-	-	100.0
Rusizi	-	53.9	-	-	-	46.2
Nyamasheke	-	100.0	-	-	-	-
Rulindo	8.3	8.3	8.3	-	-	75.0
Gakenke	-	-	20.0	-	-	80.0
Musanze	-	-	-	-	-	100.0
Gicumbi	22.2	-	-	-	-	77.8
Rwamagana	22.2	17.8	22.2	-	-	37.8
Nyagatare	41.5	17.1	-	2.4	26.8	12.2
Gatsibo	15.0	30.0	-	5.0	-	50.0
Kayonza	50.7	15.9	4.4	7.3	2.9	18.8
Kirehe	6.3	18.8	-	15.6	15.6	43.8
Ngoma	3.9	30.8	34.6	-	-	30.8
Bugesera	12.3	27.7	6.2	23.1	-	30.8
National	21.5	26.0	5.7	5.3	3.5	38.0

Source: NISR, SAS 2022

Table 30: 2022 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	-	20.0	40.0	40.0	-
Gasabo	6.3	-	6.3	68.8	18.8
Kicukiro	-	18.2	18.2	63.6	-
Nyanza	-	-	26.7	60.0	13.3
Gisagara	-	7.4	37.0	48.2	7.4
Nyaruguru	-	-	12.5	87.5	-
Huye	-	-	30.4	65.2	4.4
Nyamagabe	-	-	-	100.0	-
Ruhango	3.2	9.7	58.1	29.0	-
Muhanga	-	-	21.4	64.3	14.3
Kamonyi	7.7	7.7	46.2	30.8	7.7
Karongi	-	16.7	16.7	66.7	-
Rusizi	-	-	50.0	50.0	-
Nyamasheke	-	-	18.8	75.0	6.3
Rulindo	-	-	-	100.0	-
Gakenke	-	8.3	58.3	33.3	-
Musanze	-	-	40.0	60.0	-
Ngororero	-	-	-	100.0	-
Gicumbi	20.0	-	60.0	20.0	-
Rwamagana	7.8	9.8	11.8	52.9	17.7
Nyagatare	2.4	-	9.5	66.7	21.4
Gatsibo	-	-	33.3	42.9	23.8
Kayonza	1.4	8.1	24.3	36.5	29.7
Kirehe	-	3.0	18.2	72.7	6.1
Ngoma	-	20.7	34.5	37.9	6.9
Bugesera	5.7	-	32.9	55.7	5.7
National	2.7	5.3	27.0	53.1	11.9

Source: NISR, SAS 2022

Table 31: 2022 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	30.4	11.3	-	2.5	49.2	-	5.4	0.7	0.5	-
Gasabo	10.6	16.3	0.1	23.1	41.6	0.0	0.3	0.1	8.1	-
Kicukiro	11.7	6.9	0.1	16.6	51.2	0.0	3.0	3.1	7.4	-
Nyanza	5.7	8.3	2.4	13.7	51.5	0.0	0.4	6.9	11.1	-
Gisagara	8.6	1.6	2.7	5.0	60.3	1.1	2.0	3.7	15.1	-
Nyaruguru	9.4	10.8	2.0	15.7	48.0	0.5	0.6	0.4	12.7	-
Huye	5.9	7.4	1.2	22.1	46.3	1.2	1.5	1.9	12.5	-
Nyamagabe	4.3	8.3	7.2	14.0	58.6	0.0	1.6	0.0	6.1	-
Ruhango	5.4	3.8	0.6	3.3	68.5	0.0	0.4	1.7	16.3	-
Muhanga	2.2	2.4	4.3	9.5	67.4	-	2.1	3.0	8.9	0.2
Kamonyi	6.4	1.7	0.7	15.9	49.3	0.0	4.9	5.0	15.7	0.2
Karongi	7.7	3.6	5.8	3.6	70.6	-	0.5	2.6	5.8	0.1
Rutsiro	5.1	5.4	7.9	0.5	70.0	-	3.2	0.0	8.0	-
Rubavu	2.6	9.6	7.5	4.8	29.5	-	-	44.8	1.0	0.2
Nyabihu	6.2	1.9	7.7	11.4	56.7	-	0.1	13.1	1.9	1.1
Ngororero	1.5	-	6.4	0.7	85.5	-	1.0	2.9	2.0	-
Rusizi	5.4	18.5	0.1	11.3	56.2	0.0	5.5	1.4	1.7	-
Nyamasheke	4.9	25.8	5.2	2.1	53.2	0.0	4.2	0.8	3.8	-
Rulindo	8.3	8.1	9.3	8.3	55.8	0.0	0.7	1.0	8.5	-
Gakenke	0.8	3.6	3.6	4.6	66.9	0.6	3.9	1.1	14.8	0.0
Musanze	2.5	3.3	4.7	3.5	42.6	-	0.4	39.6	3.5	-
Burera	3.0	12.5	2.6	1.1	58.1	-	0.4	18.6	3.7	-
Gicumbi	0.6	7.7	13.0	15.6	56.6	1.7	0.2	1.9	2.8	-
Rwamagana	2.3	15.9	2.1	14.6	58.8	0.3	2.6	0.5	2.8	0.3
Nyagatare	7.0	15.1	1.5	6.4	49.4	0.7	7.1	7.7	5.0	-
Gatsibo	2.2	13.7	1.0	8.8	62.9	0.0	3.5	2.9	5.1	-
Kayonza	1.2	4.7	14.7	2.9	39.3	0.5	6.4	7.4	23.0	-
Kirehe	5.3	1.6	0.7	5.0	73.2	0.1	12.2	-	2.1	-
Ngoma	1.5	4.4	5.6	3.0	72.5	0.1	9.3	3.6	0.1	-
Bugesera	16.2	13.2	0.9	8.2	48.2	0.2	2.4	4.9	6.0	-
National	4.9	7.8	4.7	9.0	58.2	0.3	2.1	5.1	7.7	0.1

Source: NISR, SAS 2022

Table 32: 2022 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	-	19.2	43.1	37.8
Gasabo	-	4.7	31.7	63.7
Kicukiro	-	-	0.1	99.9
Nyanza	0.4	19.4	60.5	19.7
Gisagara	0.3	3.3	20.3	76.0
Nyaruguru	0.6	2.5	56.4	40.4
Huye	0.5	4.7	51.7	43.2
Nyamagabe	1.0	8.2	38.2	52.7
Ruhango	0.8	6.2	25.0	68.0
Muhanga	1.4	4.6	29.0	64.9
Kamonyi	1.8	14.2	45.9	38.1
Karongi	0.8	19.2	24.6	55.5
Rutsiro	1.5	19.8	57.6	21.2
Rubavu	2.5	4.6	28.7	64.3
Nyabihu	3.9	22.2	61.6	12.3
Ngororero	4.6	21.5	37.2	36.8
Rusizi	1.1	4.6	24.8	69.5
Nyamasheke	1.2	16.4	20.4	62.1
Rulindo	0.4	22.6	35.4	41.6
Gakenke	2.3	27.2	62.4	8.1
Musanze	1.9	4.0	23.4	70.8
Burera	0.4	2.9	4.0	92.6
Gicumbi	2.8	29.8	23.6	43.8
Rwamagana	0.0	3.6	23.6	72.8
Nyagatare	0.1	6.0	30.4	63.5
Gatsibo	1.7	10.4	40.7	47.3
Kayonza	0.1	10.9	30.7	58.4
Kirehe	0.2	18.2	11.4	70.2
Ngoma	0.1	6.9	22.0	71.0
Bugesera	0.0	11.5	34.5	54.1
National	1.2	12.4	34.5	51.9

Source: NISR, SAS 2022

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