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The Republic of Rwanda

NATIONAL INSTITUTE OF
STATISTICS OF RWANDA

SEASONAL AGRICULTURAL SURVEY

SEASON A 2022
REPORT

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I.   INTRODUCTION

Quality agriculture statistics are useful in evaluating 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 Resource (MINAGRI) conducts the Seasonal Agricultural Survey (SAS) to gather agriculture information mainly related to potential agricultural land use; crop area, yield and production; agricultural inputs, agricultural 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 related information including total quantity of agricultural inputs used, total agricultural exports, crop varieties grown, crop intensification program among others is obtained from MINAGRI and Rwanda Agriculture Board (RAB), district agronomists, and other partners working in the agriculture sector. NISR conducts the Seasonal Agricultural Survey (SAS) following 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 and 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 A 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 crops[1] 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 (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.

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[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).

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.

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	0.7
1.1	Hillside agricultural land	1,343,933	53.1
2.1	Non-rice agricultural wetland	55,807	2.2
2.2	Paddy rice wetland	21,848	0.9
2.3	Non cropped wetlands	37,743	1.5
3.0	Rangeland	144,490	5.7
4.1	Urban settlements	31,612	1.2
4.2	Rural settlements	78,928	3.1
5.0	Bare land/rocks	15,404	0.6
6.0	Water bodies	135,295	5.3
7.0	National parks	241,455	9.5
8.0	Protected wetland	12,201	0.5
9.0	Forest plantations	395,001	15.6

Source: NISR, SAS 2022

Map 1: Rwanda land classification map done in 2020
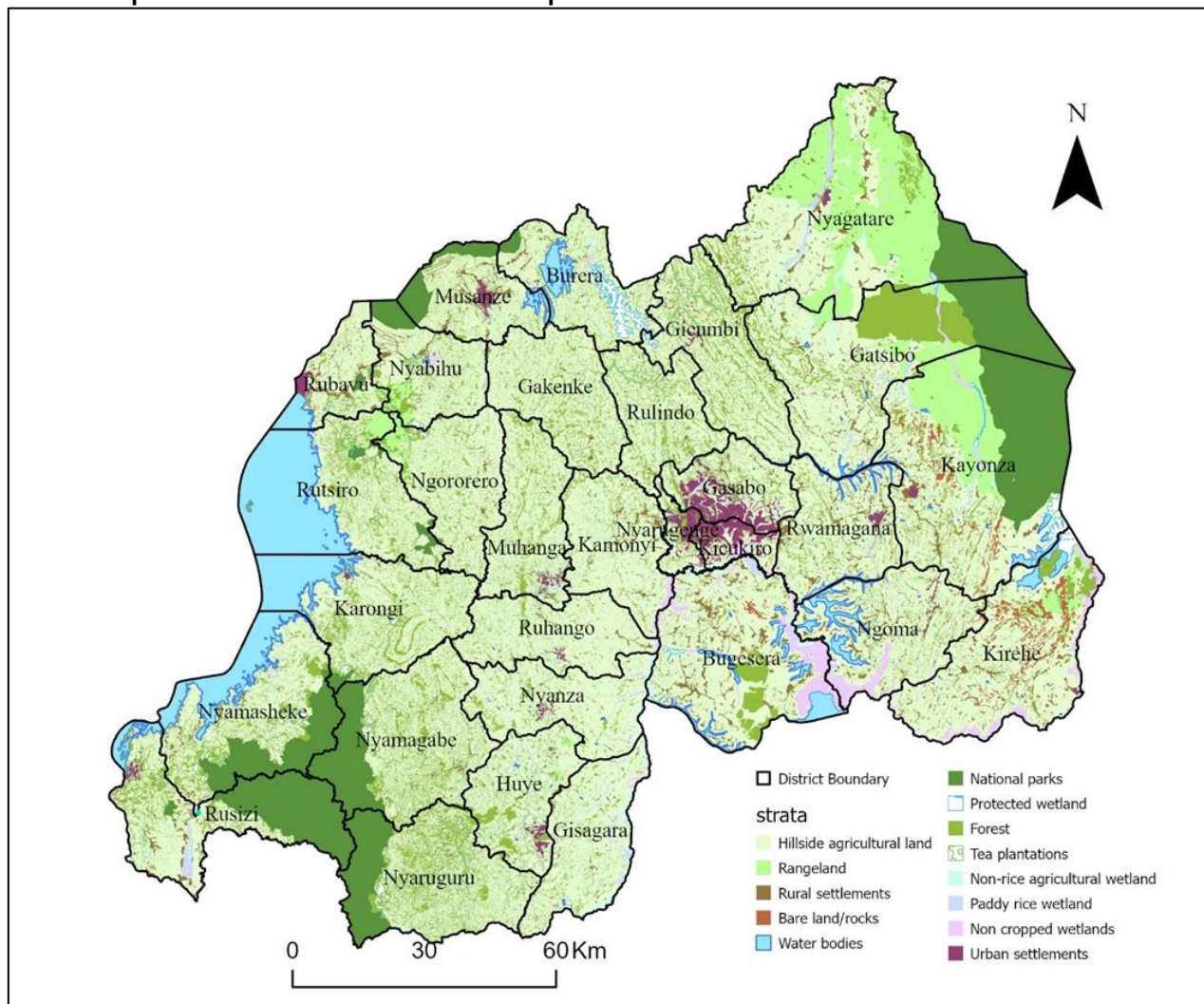
Source: NISR, SAS 2022

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 (potential for agricultural production of kitchen gardens crops, fruit trees, and livestock). 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: Population size per district by stratum (Number of segments)

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

2.1.3. Sampling procedures

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

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

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

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

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

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
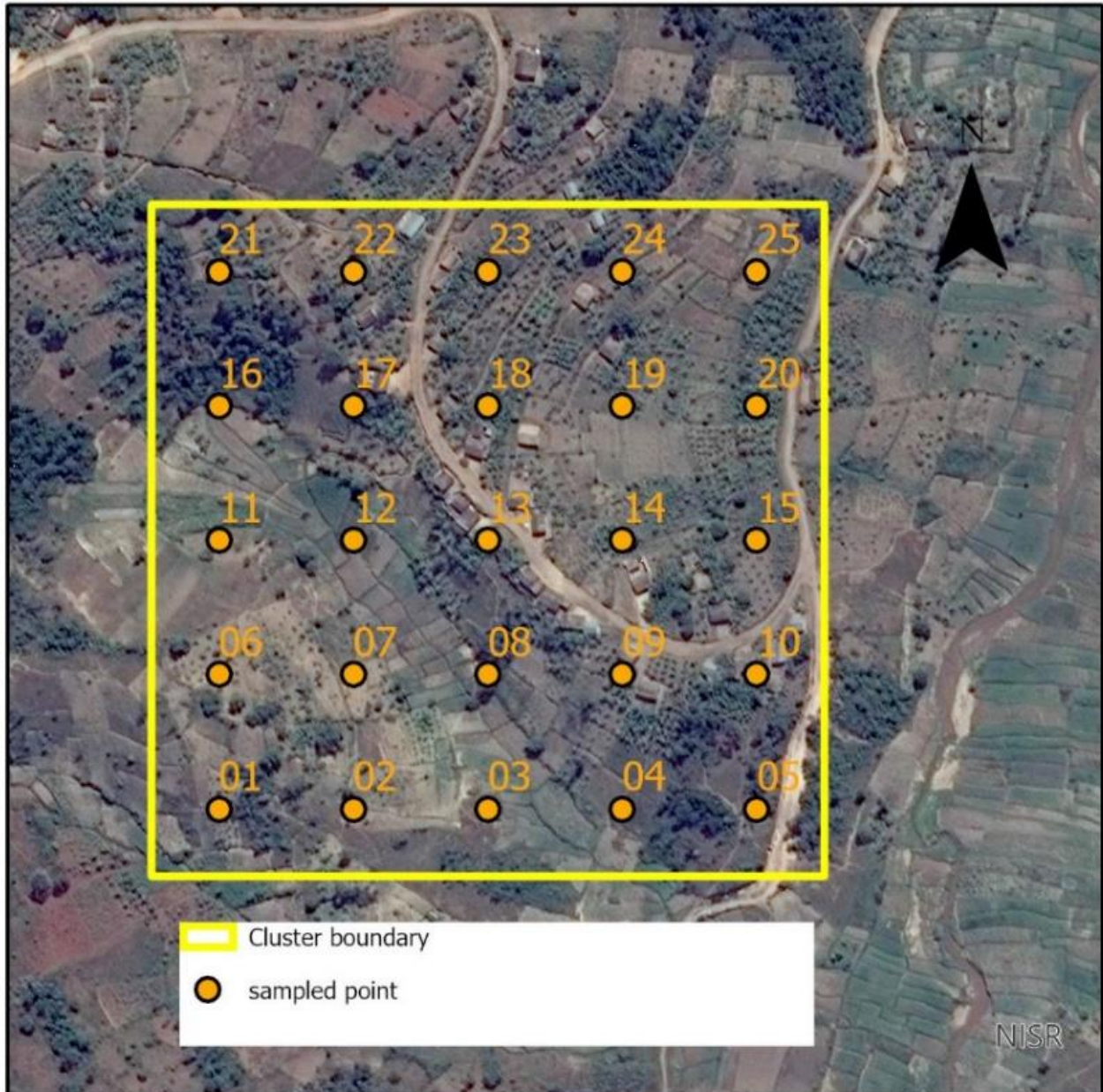
Source: NISR, SAS 2022

2.1.4. 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:

   $p2_h$ = Probability of selection of the plot in segment h
   ghi = Number of grid squares selected in the i-th sample segment of stratum h;
   Ahij = Area of the j-th sample plot selected in the i-th sample segment of stratum h
   Ahi = Area of the i-th sample segment of stratum h;
   ghij = 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

2.2.   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 131 enumerators and 23 team leaders served in the field data collection after a refresher training conducted by NISR staff at headquarter office. To ensure data quality, high-level supervision was conducted throughout the data collection activities.

2.2.1. Time frame

The planting for season A starts early September, the harvesting goes up to February and the analysis and reporting are completed by mid-April. Data collection for season A 2022 started from 5th December 2021 and ended on 24th February 2022 covering 1,200 segments and 336 large scale farmers' holdings across the country during the screening phase. While during the farmer's interviews, the survey covered 14,154 small scale farmers and 328 large scale farmers.

2.2.2. Data collection tools and materials

Seasonal agricultural survey uses two main questionnaires:

- **Screening Questionnaire:** Screening questionnaire is a questionnaire used to collect information on the delineated plot, mainly related to land use, plot area and crop cultivated.
- **Plot Questionnaire:** Plot questionnaire is a questionnaire used to collect information on the sampled plot mainly related to crop production, inputs used (seeds, fertilizers …), 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 have to check if 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.

2.2.3. Field data collection procedures

This is how the SAS data collection is performed:

- **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 collector with GPS connected to the tablet. For large scale farmers, complete enumeration of plots with at least 10 hectares is done.
- **Farm Interview:** After screening activity, only sampled agricultural plots are provided to enumerators for collecting information using the plot questionnaire.

2.3.   Data processing and analysis

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

2.4.   Concepts, definitions and estimation methods

1. Total land area

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

2. Agricultural area

The agricultural area includes arable land, land under permanent[3] crops and permanent pasture.

3. Arable land

Arable land includes land defined by the FAO as 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 pasture land

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, (sometimes expressed as a percentage of the total land area). 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.

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[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.

Part of the area equipped for irrigation which is actually irrigated refers to physical areas. Irrigated land that is cultivated more than once a year is counted only once.

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). It is important to note that sum of shares of seasonal crops do not exceed one hundred percent.

- 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 sum of seasonal crops share does not exceed 100 %, 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 A 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 1.402 million hectares (59.0% of total country land) is used for agriculture. Out of the total agricultural land, 1.06 million hectares were used for Seasonal crops in season A, nearly 0.6 million hectares are area under permanent crops, while 0.135 million ha under permanent pasture. (See district details in Table 6).

Figure 1: 2022 Season A_Agricultural land use (in thousands of hectares)
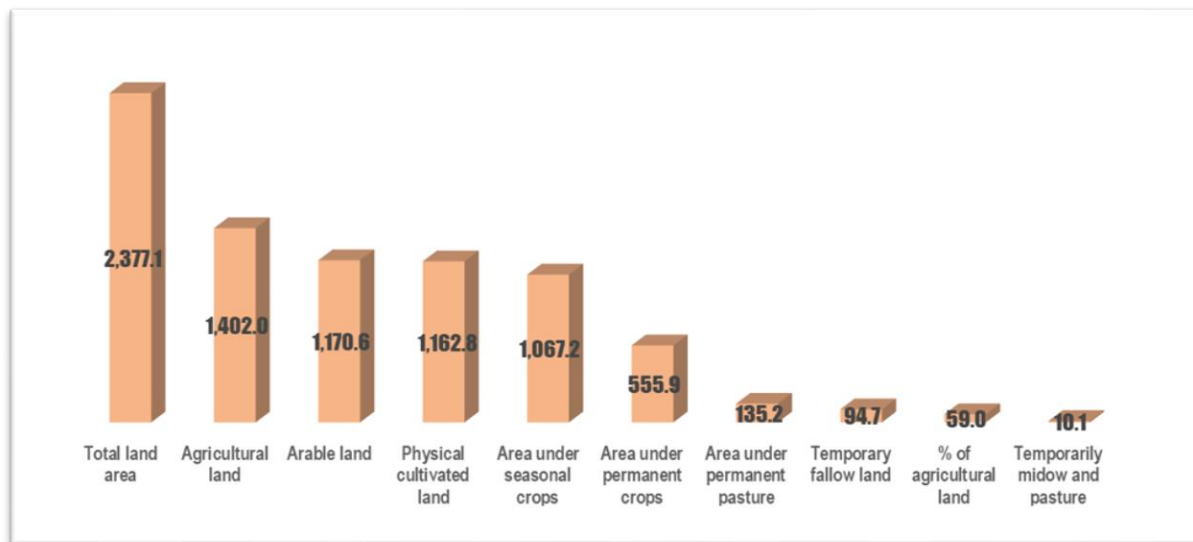
Source: NISR, SAS 2022

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

The survey estimates related to cultivated area, production and yield for major crops are summarized hereunder:

- **Maize:** The cultivated area for Maize was estimated at 219,683 ha, this is 7.2 percent drop when compared to 2021 season A. The total production was estimated at 348,907 MT, a decrease of 7.9 percent when compared to 2021 season A. In this season the national average yield was 1.6 tons per hectare, with an average yield of 1,5 tons and 4.1 tons for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12)

- **Sweet potato**: The cultivated area for sweet potato was estimated at 97,771 ha, a decrease of 1.7 percent when compared to 2021 season A. Sweet potato production was estimated at 694,320 MT, an increase of 4 percent when compared to 2021 season A. The national average yield was 7.1 tons per hectare (See district details in Tables 5, 8-12).

- **Irish potato**: The cultivated area for Irish potato was estimated at 56,442 ha, an increase of 8.1 percent when compared to 2021 season A. The production was estimated at 486,075 MT, an increase of 4.9 percent compared to 2021 season A. The average yield of Irish potato was 8.6 tons per hectare, with an average yield of 8.6 and 10.3 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).

- **Cassava**: The cultivated area for cassava was estimated at 186,204 ha, a decrease of 7 percent when compared to 2021 season A. Besides, the harvested area was estimated at 45,418 ha. The production was 637,856 MT, an increase of 6 percent when compared to 2021 season A. The national average yield of cassava was 14 tons per hectare (See district details in Tables 5, 8-12).

- **Paddy rice**: The cultivated area for paddy rice was estimated at 15,840 ha, an increase of 3 percent when compared to 2021 season A. The production was 67,002 MT, an increase of 4.8 percent from the 2021 season A. The national average yield was 4.2 tons per hectare, with an average yield of 2.8 and 4.3 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).

- **Banana**: The total cultivated area for Banana was estimated at 259,505 ha, a decrease of 7.6 percent when compared to 2021 season A. The harvested area was estimated at 108,476 ha. The production was estimated at 1.192.331 MT, an increase of 3.5 percent when compared to 2021 season A. The average yield of banana was 11 tons per hectare (See district details in Tables 5, 8-12).

- **Beans**: Beans cultivated area was estimated at 362,439 ha, drop of 6.9 percent when compared to 2021 season A. Bean's production was estimated at 235,818 MT, a decrease of 8.9 percent change from 2021 season A. The national average yield of beans was 651 kilograms per hectare, with an average yield of 649 and 1,320 kilograms for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8-12).

Figure 2: 2022 Season A_Cultivated area, Production and Yield for major crops

Cultivated area for major crops (Ha)

Crop	Area
Beans	362,439
Banana	259,505
Maize	219,683
Cassava	186,204
Sweet potato	97,771
Irish potato	56,442
Paddy rice	

Production of major crops (MT)

Crop	Production
Banana	1,192,331
Sweet potato	694,320
Cassava	637,856
Irish potato	486,075
Maize	348,907
Bean	235,818
Paddy rice	67,002

Yield for major crops (MT/ha)

Crop	National Average	Small Scale farmers	Large Scale farmers
Cassava	14.10	14.05	10.28
Banana	11.00	10.99	7.96
Irish potato	8.68	8.61	10.36
Sweet potato	7.17	7.10	2.79
Paddy rice	4.2	2.79	4.27
Maize	1.61	1.52	4.19
Bean	0.70	0.65	1.32

Source: NISR, SAS 2022

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

Crop/crop groups	Cultivated Crop area (Ha)		Harvested Crop area (Ha)		Production (MT)		Yield (MT/ha)	
	2021 A	2022 A	2021 A	2022 A	2021 A	2022 A	2021 A	2022 A
Cereals	292,831	287,233	292,831	279,020	492,868	467,217		
Maize	236,642	219,683	236,642	218,689	378,641	348,907	1.60	1.6
Sorghum	33,636	37,469	33,636	37,469	44,039	45,016	1.31	1.2
Paddy rice	15,374	15,840	15,374	15,779	63,950	67,002	4.16	4.2
Wheat	4,418	3,495	4,418	3,495	4,500	4,019	1.02	1.1
Other cereals	2,762	10,746	2,762	10,738	1,738	5,592	0.63	0.5
Tubers and Roots	369,123	380,840	209,589	212,859	1,826,018	1,903,496	-	-
Cassava	200,313	186,204	42,284	45,418	601,291	637,856	14.22	14.0
Sweet potato	99,496	97,771	99,496	97,767	667,346	694,320	6.71	7.1
Irish potato	52,196	56,442	52,196	56,442	463,562	486,075	8.88	8.6
Taro &Yams	17,119	40,424	15,612	13,231	93,819	85,245	6.01	6.4
Banana	280,779	259,505	105,474	108,476	1,152,365	1,192,331		11.0
Cooking banana	108,451	96,434	38,916	39,729	529,788	545,588	13.61	13.7
Dessert banana	41,394	36,598	15,345	15,927	124,546	126,838	8.12	8.0
Banana for beer	130,934	126,472	51,213	52,820	498,031	519,904	`	9.8
Legumes and Pulses	443,736	415,450	443,736	415,424	288,018	263,251		-
Beans	389,149	362,439	389,149	362,438	258,851	235,818	0.67	0.7
Bush bean	267,206	239,540	267,206	239,540	167,862	140,047	0.63	0.6
Climbing bean	121,942	122,898	121,942	122,898	90,989	95,771	0.75	0.8
Pea	11,116	10,872	11,116	10,872	8,617	8,247	0.78	0.8
Groundnut	15,978	15,144	15,978	15,118	6,313	5,445	0.40	0.4
Soybean	27,493	26,996	27,493	26,996	14,237	13,741	0.52	0.5
Vegetables and Fruits	31,387	29,634	24,780	21,700	184,886	163,864	-	-
Vegetables	20,181	18,721	20,181	18,298	159,669	142,604	7.91	7.8
Fruits	11,206	10,914	4,599	3,402	25,217	21,261	5.50	6.3
Fodder crops	8,548	8,824	7,875	8,358	112,030	102,784	14.23	12.3
Other crops	48,980	53,313	12,671	8,250	110,233	100,244	8.70	12.2
Total Developed Crop area	**1,475,385**	**1,434,799**	**1,096,956**	**1,061,236**	**4,166,417**	**4,196,506**	**NA**	**NA**

Source: NISR, SAS 2022

3.3.   Use of inputs

The results related to the use of agricultural inputs (seeds, fertilizers and pesticides) are presented in terms of percentage of farmers who applied such agricultural inputs throughout the season.

3.3.1.   Use of seeds

Results show that, in 2022 season A, 33.1 percent of farmers used improved seeds. In regard to farmer type[4], 31.9 percent of small-scale farmers (SSF) and 81.7 percent of Large-scale farmers (LSF) used improved seeds (See Figure 3). The major sources of improved seed were NGO/companies and agro-dealers account for 77.7 percent (See details in Tables, 17-20).

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

3.3.2. Use of fertilizers

Results show that 69.7 percent of farmers applied organic fertilizer with 69.7 percent of small-scale farmers and 73.8 percent of large-scale farmers applied organic fertilizer. In regard to inorganic fertilizers, 38.6 percent of famers applied inorganic fertilizer with 37.6 percent of small-scale farmers and 83.5 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 90.3 percent of inorganic fertilizers provisions. DAP, UREA and NPK17 are inorganic fertilizers mostly used in 2022 Season A with 46.9 percent, 37.8 percent and 14.5 percent respectively (See details in Tables 7,21-25).

3.3.3. Use of pesticides

The results revealed that 19.8 percent of farmers applied pesticides. According to farmer type, 18.6 percent of small-scale farmers and 72.3 percent of large-scale farmers applied pesticides respectively (See figure 3). Rocket, Dithane and Cypermethrin were the most used pesticides with 37.5 percent of farmers, 26.7 percent and 14.6 percent respectively (See details in Tables 26 & 27).

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

33.1	69.7	38.6	19.8
Farmers who applied improved seeds	**Farmers who applied organic fertilizers**	**Farmers who applied inorgonic fertilizers**	**Farmers who applied pesticides**
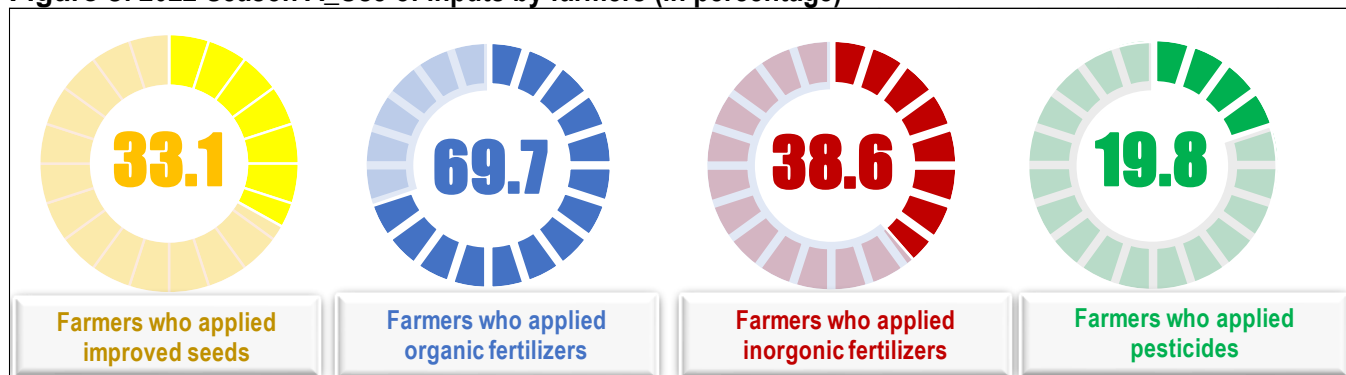
Source: NISR, SAS 2022

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 A.

3.4.1. Irrigation practices

The survey results revealed that 8.2 percent of farmers practiced irrigation, with 7 percent of small-scale farmers and 59.8 percent for large-scale farmers. Modern irrigation accounts for 60.6 percent practices by farmers. Lakes/stream and underground water were the most used sources of water for irrigation with 47.4 percent and 25.4 percent respectively (See details in Tables 7,28-30).

3.4.2. Erosion control measures

In 2022 season A, 92.1 percent of farmers practiced anti-erosion activities where 92 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 57.1 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 most with 81.1 percent (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 57.4 percent of farmers practiced agroforestry.

Figure 4: 2022 Season A_Use of agricultural practices

| 92.1 | 8.2 | 57.4 |
| Farmers who protected land against erosion | Farmers who practiced irrigation | Farmers who practiced agroforestry |
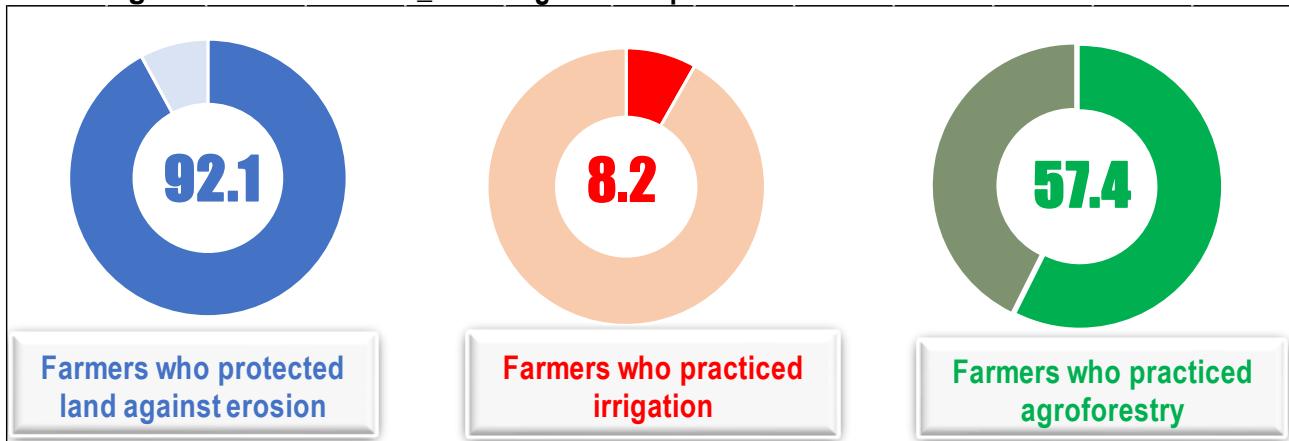
Source : NISR, SAS 2022

IV.   MAIN TABLES

Table 6: 2022 Season A_Agricultural land use per district (,000Ha)

District	Total land area	Agricultural land	% of agricultural land	Arable land	Physical cultivated land	Area under seasonal crops	Area under permanent crops	Temporary fallow land	Temporarily midow and pasture	Area under permanent pasture
Nyarugenge	13.1	5.8	44.0	4.5	5.1	3.9	2.6	0.5	0.1	0.0
Gasabo	42.7	20.2	47.3	18.7	16.9	15.9	7.1	2.2	0.7	0.4
Kicukiro	16.6	5.9	35.3	5.1	4.5	4.4	2.3	0.7	0.1	0.5
Nyanza	67.1	47.0	70.0	44.8	41.3	39.4	15.7	5.0	0.4	0.3
Gisagara	67.3	45.0	66.9	44.1	40.5	39.6	15.7	4.5	0.1	-
Nyaruguru	100.7	34.9	34.7	30.9	30.1	26.1	12.1	4.3	0.8	-
Huye	58.1	34.6	59.6	33.1	32.2	30.6	13.7	2.2	0.2	0.0
Nyamagabe	109.1	44.9	41.2	39.5	39.1	33.8	12.2	5.6	0.2	0.0
Ruhango	62.6	46.2	73.8	43.0	41.3	38.2	14.1	4.1	0.8	0.1
Muhanga	64.4	41.1	63.8	37.4	36.3	32.6	17.9	4.4	0.5	-
Kamonyi	65.8	44.4	67.5	39.0	41.6	36.2	19.8	2.1	0.7	0.1
Karongi	78.9	42.4	53.7	36.0	36.7	30.3	14.3	5.3	0.4	-
Rutsiro	66	40.4	61.3	29.3	30.5	25.3	15.7	3.8	0.2	6.0
Rubavu	33.8	23.8	70.3	22.4	22.2	21.2	5.9	0.7	0.6	0.3
Nyabihu	53.6	34.6	64.5	30.1	28.7	28.5	6.7	1.6	0.1	4.1
Ngororero	67.5	44.6	66.0	39.2	37.2	34.0	16.1	5.0	0.1	2.2
Rusizi	91.4	36.3	39.7	34.4	35.0	33.1	12.5	1.2	0.1	-
Nyamasheke	94.8	39.8	42.0	31.6	38.5	30.4	21.4	1.2	-	0.1
Rulindo	56.7	36.5	64.4	33.1	33.1	31.1	13.6	1.9	0.2	1.3
Gakenke	70.1	49.0	69.8	45.4	47.0	43.4	21.1	1.7	0.2	0.1
Musanze	50.9	29.5	58.0	29.0	27.2	26.7	4.1	2.1	0.2	-
Burera	58.4	35.4	60.5	34.8	31.9	31.3	3.1	3.2	0.3	-
Gicumbi	82.5	48.3	58.5	46.2	44.4	42.3	11.2	3.2	0.9	-
Rwamagana	65.3	47.5	72.8	42.7	42.9	40.3	24.3	2.0	0.4	2.2
Nyagatare	191.1	148.1	77.5	73.5	75.1	71.3	88.7	1.7	0.8	70.5
Gatsibo	153.6	76.9	50.1	60.5	66.1	58.3	39.5	2.1	0.1	8.6
Kayonza	179.2	92.8	51.8	63.2	60.1	57.1	47.2	5.9	0.2	26.6
Kirehe	114.9	74.4	64.7	63.3	65.1	59.1	31.1	4.2	-	5.0
Ngoma	80.5	56.7	70.5	50.9	51.0	46.9	22.5	3.5	0.4	1.7
Bugesera	120.4	75.2	62.5	64.9	61.2	55.9	23.6	8.7	0.3	5.1
National	2,377	1,402.0	59.0	1,170.6	1,162.8	1,067.2	555.9	94.7	10.1	135.2

Source: NISR, SAS 2022

Table 7: 2022 Season A_Area under agricultural practices

District	Modern irrigated agricultural land (Ha)	Agricultural area under erosion control	Agricultural area under agroforestry trees	Agricultural area under fertilizer application	
				Inorganic fertilizer	Organic fertilizer
Nyarugenge	-	2,800	3,039	637	2,629
Gasabo	319	17,531	11,348	4,141	11,321
Kicukiro	93	2,811	3,403	1,820	2,558
Nyanza	903	33,363	13,459	7,321	23,342
Gisagara	1,627	29,327	17,738	14,058	23,668
Nyaruguru	73	33,361	15,060	15,447	23,080
Huye	1,085	27,941	14,453	7,769	20,623
Nyamagabe	23	40,831	15,498	11,467	24,002
Ruhango	1,263	35,345	19,744	5,506	22,983
Muhanga	640	35,000	14,323	7,277	23,302
Kamonyi	397	34,648	15,562	6,574	25,082
Karongi	124	35,259	18,582	9,635	22,172
Rutsiro	57	31,917	15,838	11,210	21,708
Rubavu	-	19,739	10,301	10,558	7,929
Nyabihu	52	28,403	21,477	16,982	19,010
Ngororero	20	36,542	15,843	11,329	27,201
Rusizi	1,527	24,177	19,031	19,360	22,612
Nyamasheke	526	31,709	22,023	18,542	24,571
Rulindo	904	32,863	17,495	11,543	26,524
Gakenke	-	45,768	24,250	24,450	38,172
Musanze	-	25,008	16,000	12,495	17,668
Burera	-	30,604	11,326	13,474	24,622
Gicumbi	-	42,875	16,886	12,950	36,500
Rwamagana	1,361	40,569	28,141	17,702	29,498
Nyagatare	3,165	66,023	54,502	28,154	29,307
Gatsibo	2,103	59,501	39,464	22,165	44,675
Kayonza	3,419	39,706	27,761	19,083	29,577
Kirehe	3,577	39,377	43,260	28,064	39,295
Ngoma	970	35,637	34,154	16,578	29,546
Bugesera	2,907	37,522	38,083	20,323	28,612
National	27,134	996,156	618,044	406,613	721,789

Source: NISR, SAS 2022

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

District	Maize	Sorghum	Paddy rice	Wheat	Other cereals	Cassava	Sweet potato	Irish potato	Yams & Taro	Bananas	Cooking banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Pea	Groundnut	Soybean	Vegetables	Fruits	Fodder Crops	Other crops	Total developed land
Nyarugenge	819	-	-	-	-	650	339	85	122	1,959	625	372	961	2,041	2,012	30	-	55	202	297	50	88	454	7,161
Gasabo	3,303	-	220	-	20	3,700	1,118	681	544	4,864	1,962	1,005	1,897	8,097	7,648	449	125	463	325	534	8	649	313	24,962
Kicukiro	1,094	-	36	-	3	374	371	18	232	1,123	528	174	422	1,886	1,859	27	-	34	88	183	50	113	179	5,784
Nyanza	5,459	412	417	-	68	16,393	2,319	334	885	8,991	2,845	1,398	4,748	18,461	15,609	2,852	114	748	1,538	613	326	347	1,596	59,020
Gisagara	5,910	883	2,526	-	420	5,837	2,527	310	1,936	9,855	2,632	2,023	5,199	16,252	14,938	1,314	123	379	2,148	401	1,173	54	690	51,424
Nyaruguru	5,421	-	-	-	6	3,729	4,509	1,523	854	5,400	1,506	965	2,929	8,654	1,744	6,910	346	-	708	536	104	560	4,690	37,040
Huye	4,859	-	996	-	258	9,220	3,268	1,014	772	7,977	2,622	1,694	3,662	14,239	10,765	3,473	133	256	2,057	453	144	224	1,438	47,309
Nyamagabe	5,031	-	23	119	6	6,244	7,591	2,957	779	7,331	1,647	720	4,964	11,236	3,443	7,793	1,360	-	1,306	308	56	169	3,150	47,668
Ruhango	4,018	23	856	-	10	19,601	1,864	492	2,641	8,411	1,913	1,590	4,907	12,861	9,335	3,526	101	941	3,247	577	75	624	1,680	58,021
Muhanga	1,925	23	146	8	107	10,547	4,857	310	6,101	17,043	3,276	1,882	11,885	7,506	3,847	3,658	82	23	1,875	545	197	397	983	52,675
Kamonyi	4,663	-	190	-	-	12,072	2,187	702	1,401	11,107	1,572	1,479	8,056	14,320	12,300	2,020	93	804	2,325	914	848	614	2,837	55,076
Karongi	7,482	-	-	-	-	8,427	4,828	1,166	5,038	10,203	2,302	1,065	6,836	6,743	2,270	4,473	687	16	1,130	822	16	426	3,354	50,337
Rutsiro	6,304	-	-	240	-	2,078	3,876	3,481	3,969	6,538	1,730	1,022	3,786	4,203	594	3,609	587	-	783	224	538	165	3,114	36,102
Rubavu	1,768	94	-	-	-	894	620	6,278	169	3,042	965	294	1,783	7,864	716	7,148	89	-	308	2,090	125	577	1,162	25,080
Nyabihu	2,808	795	-	786	-	512	3,311	10,130	-	1,152	257	244	651	7,249	235	7,014	889	-	5	682	549	111	823	29,802
Ngororero	4,725	617	-	407	-	4,321	6,121	1,996	2,497	11,143	2,573	1,566	7,004	12,411	1,977	10,434	397	-	1,308	261	308	114	1,208	47,833
Rusizi	7,451	19	1,394	-	-	15,697	2,192	224	2,374	6,344	2,462	524	3,357	12,156	9,519	2,637	142	681	1,258	627	295	47	2,721	53,623
Nyamasheke	5,304	33	372	27	136	12,204	3,197	104	1,448	7,558	2,449	1,059	4,050	8,657	2,682	5,975	164	335	1,640	277	227	-	8,042	49,727
Rulindo	4,652	-	16	50	6	4,438	4,818	1,233	108	6,244	1,700	1,262	3,282	12,184	5,977	6,208	510	77	336	1,025	371	121	1,518	37,706
Gakenke	10,766	-	121	142	613	4,867	8,505	1,136	5,754	13,556	2,500	1,862	9,195	9,324	2,225	7,099	563	167	643	605	382	218	1,808	59,170
Musanze	6,890	2,286	-	977	5	174	2,366	4,522	435	1,916	753	353	810	6,072	367	5,706	1,671	-	20	676	362	151	747	27,819
Burera	9,578	1,138	-	570	51	132	2,546	5,271	84	2,196	819	69	1,308	10,385	600	9,784	1,671	-	-	321	67	267	30	34,306
Gicumbi	5,257	216	-	170	185	2,755	7,392	3,165	14	5,812	2,192	1,391	2,230	19,791	6,148	13,643	1,680	188	160	517	236	744	1,255	49,539
Rwamagana	9,337	-	501	-	662	4,339	2,180	1,101	189	11,951	6,953	2,053	2,945	17,215	16,798	416	113	1,830	245	1,070	491	344	1,535	53,102
Nyagatare	21,340	17,086	1,687	-	897	3,026	1,751	581	-	10,588	5,979	1,311	3,297	17,559	15,733	1,826	209	1,614	746	621	134	792	245	78,876
Gatsibo	16,240	4,119	1,491	0	1,473	3,748	2,615	2,379	583	21,263	11,701	3,150	6,412	22,048	20,257	1,791	69	2,022	891	939	224	41	2,599	82,745
Kayonza	12,479	2,853	1,654	-	1,079	11,946	2,155	1,909	309	11,973	7,864	1,279	2,829	16,252	16,160	92	128	1,391	159	778	1,687	190	1,225	68,167
Kirehe	22,482	2,400	931	-	693	4,724	1,739	1,376	589	18,305	10,379	1,317	6,610	20,727	18,881	1,845	185	635	437	418	1,053	-	1,028	77,720
Ngoma	12,867	333	867	-	4,009	7,080	2,279	1,645	498	16,090	8,378	1,973	5,739	16,969	15,892	1,077	63	752	448	412	476	394	1,051	66,233
Bugesera	9,452	4,140	1,396	-	40	6,477	4,331	318	99	9,571	3,350	1,503	4,718	19,078	19,010	67	27	1,730	660	993	340	282	1,839	60,770
National	219,683	37,469	15,840	3,495	10,746	186,204	97,771	56,442	40,424	259,505	96,434	36,598	126,472	362,439	239,540	122,898	10,872	15,144	26,996	18,721	10,914	8,824	53,313	1,434,799
SSF	213,337	37,440	301	3,472	10,564	186,134	97,754	56,342	40,422	259,372	96,315	36,591	126,466	361,482	238,599	122,883	10,861	15,139	26,727	18,586	10,540	8,298	52,521	1,409,293
LSF	6,346	29	15,539	23	182	69	18	99	2	133	120	7	6	956	941	15	11	5	268	135	373	525	791	25,506

Source: NISR, SAS 2022

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

District	Maize	Sorghum	Paddy rice	Wheat	Other cereals	Cassava	Sweet potato	Irish potato	Yarms & 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	819	-	-	-	-	195	339	85	35	978	261	187	529	2,041	2,012	30	-	55	202	280	24	88	81	5,222
Gasabo	3,303	-	220	-	20	961	1,118	681	119	1,851	805	318	728	8,097	7,648	449	125	463	325	534	2	617	75	18,510
Kicukiro	1,076	-	36	-	3	48	371	18	68	482	195	80	207	1,886	1,859	27	-	34	88	183	10	113	0	4,417
Nyanza	5,459	412	417	-	68	4,153	2,319	334	297	3,666	1,095	660	1,911	18,461	15,609	2,852	114	748	1,538	613	85	307	26	39,016
Gisagara	5,898	883	2,526	-	420	1,086	2,527	310	296	3,906	983	818	2,105	16,252	14,938	1,314	123	379	2,148	401	54	54	168	37,430
Nyaruguru	5,244	-	-	-	6	1,082	4,509	1,523	448	1,888	588	336	964	8,654	1,744	6,910	346	-	708	486	14	461	18	25,386
Huye	4,853	-	996	-	258	2,903	3,268	1,014	163	2,929	953	666	1,309	14,239	10,765	3,473	133	256	2,057	453	11	224	3	33,760
Nyamagabe	4,918	-	23	119	6	1,636	7,591	2,957	397	2,560	579	304	1,678	11,236	3,443	7,793	1,360	-	1,306	308	56	169	-	34,644
Ruhango	4,018	23	856	-	10	5,093	1,864	492	568	2,773	429	430	1,913	12,861	9,335	3,526	101	941	3,247	577	6	624	125	34,179
Muhanga	1,919	23	146	8	107	1,529	4,857	310	1,955	6,360	1,086	710	4,564	7,506	3,847	3,658	82	23	1,875	537	161	269	444	28,110
Kamonyi	4,663	-	190	-	-	1,979	2,187	702	329	4,859	800	644	3,415	14,320	12,300	2,020	93	804	2,325	846	833	562	190	34,880
Karongi	7,482	-	-	-	-	2,064	4,828	1,166	911	4,260	829	626	2,805	6,743	2,270	4,473	687	16	1,130	822	4	426	414	30,952
Rutsiro	6,304	-	-	240	-	196	3,876	3,481	1,250	3,063	764	408	1,891	4,203	594	3,609	587	-	783	224	359	165	1,896	26,630
Rubavu	1,744	94	-	-	-	-	620	6,278	112	1,554	520	169	864	7,864	716	7,148	89	-	308	2,090	78	577	581	21,988
Nyabihu	2,769	795	-	786	-	125	3,311	10,130	-	438	96	117	225	7,249	235	7,014	889	-	5	682	104	111	640	28,035
Ngororero	4,526	617	-	407	-	1,182	6,121	1,996	974	4,169	758	779	2,631	12,411	1,977	10,434	397	-	1,308	261	121	94	170	34,753
Rusizi	7,451	19	1,394	-	-	1,574	2,192	224	1,620	2,991	1,037	244	1,710	12,156	9,519	2,637	142	681	1,258	627	54	47	402	32,833
Nyamasheke	5,255	33	372	27	136	2,906	3,197	104	1,422	2,591	724	272	1,595	8,657	2,682	5,975	164	335	1,640	246	60	-	174	27,323
Rulindo	4,409	-	16	50	6	824	4,818	1,233	71	2,243	692	450	1,100	12,184	5,977	6,208	510	77	336	1,016	117	121	124	28,153
Gakenke	10,766	-	60	142	613	1,087	8,505	1,136	1,185	6,457	1,178	794	4,486	9,324	2,225	7,099	563	167	643	501	213	169	365	41,898
Musanze	6,850	2,286	-	977	5	31	2,366	4,522	163	783	338	98	346	6,072	367	5,706	221	-	20	676	65	151	652	25,839
Burera	9,534	1,138	-	570	51	39	2,546	5,271	56	755	336	38	382	10,385	600	9,784	1,671	-	-	321	58	267	30	32,692
Gicumbi	5,257	216	-	170	185	651	7,392	3,165	-	1,791	765	437	589	19,791	6,148	13,643	1,680	188	160	483	72	744	78	42,023
Rwamagana	9,314	-	501	-	654	1,200	2,176	1,101	130	5,905	3,387	1,033	1,485	17,215	16,798	416	113	1,808	245	1,013	178	333	304	42,190
Nyagatare	21,340	17,086	1,687	-	897	1,367	1,751	581	-	5,221	2,762	658	1,801	17,559	15,733	1,826	209	1,614	746	621	93	791	89	71,652
Gatsibo	16,240	4,119	1,491	0	1,473	1,582	2,615	2,379	73	9,731	5,286	1,424	3,022	22,048	20,257	1,791	69	2,022	891	939	119	40	217	66,049
Kayonza	12,479	2,853	1,654	-	1,079	4,526	2,155	1,909	204	4,721	2,959	590	1,171	16,252	16,160	92	128	1,387	159	778	152	181	11	50,630
Kirehe	22,482	2,400	931	-	693	1,619	1,739	1,376	198	7,744	4,149	713	2,882	20,727	18,881	1,845	185	635	437	410	37	-	191	61,803
Ngoma	12,867	333	867	-	4,009	2,737	2,279	1,645	186	7,406	3,756	1,091	2,560	16,969	15,892	1,077	63	752	448	411	60	394	225	51,651
Bugesera	9,452	4,140	1,396	-	40	1,040	4,331	318	-	4,400	1,620	832	1,949	19,078	19,010	67	27	1,730	660	959	202	259	560	48,589
National	218,689	37,469	15,779	3,495	10,738	45,418	97,767	56,442	13,231	108,476	39,729	15,927	52,820	362,438	239,540	122,898	10,872	15,118	26,996	18,298	3,402	8,358	8,250	1,061,236
SSF	212,356	37,440	240	3,472	10,564	45,405	97,754	56,342	13,231	108,409	39,670	15,923	52,816	361,482	238,599	122,883	10,861	15,117	26,727	18,166	3,262	7,878	7,835	1,036,543
LSF	6,333	29	15,539	23	174	13	13	99	1	67	60	4	3	956	941	15	11	1	268	132	139	480	414	24,693

Source : NISR, SAS 2022

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

District	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	Peas	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops	Other crops
Nyarugenge	936	-	-	-	9,288	5,712	2,439	7,689	10,644	10,881	9,795	10,828	727	728	685	-	204	692	6,778	8,507	10,280	37,279
Gasabo	1,199	-	3,481	-	10,824	7,160	4,119	4,910	11,163	12,148	9,280	10,893	603	603	599	674	354	398	9,352	1,510	18,750	6,940
Kicukiro	1,230	-	3,099	-	9,702	7,662	3,231	4,925	10,407	10,097	10,524	10,654	667	669	544	-	126	239	4,115	7,827	1,282	2,285
Nyanza	1,676	645	4,501	-	14,969	6,027	3,617	3,414	8,014	6,947	7,128	8,932	627	646	524	1,354	231	391	8,050	1,977	11,212	945
Gisagara	2,167	784	4,509	-	15,948	6,182	2,982	8,729	8,088	6,846	7,548	8,879	564	558	630	775	429	580	4,761	15,126	23,114	1,053
Nyaruguru	1,930	-	-	-	10,392	10,019	5,305	7,374	10,474	11,413	9,001	10,414	589	555	597	890	-	406	7,836	5,759	3,201	553
Huye	1,422	-	4,009	-	17,794	5,813	3,831	8,232	10,340	10,297	8,627	11,242	646	637	675	810	338	511	7,556	3,344	17,185	13,438
Nyamagabe	1,485	-	1,943	547	9,148	7,282	5,478	4,450	8,403	6,982	7,290	9,095	569	496	600	969	-	399	9,646	3,369	1,641	-
Ruhango	1,355	352	4,945	-	20,933	6,831	3,360	3,697	8,791	9,037	6,845	9,174	665	658	683	724	266	444	6,227	4,353	12,040	1,151
Muhanga	1,584	811	2,613	999	13,577	6,425	3,522	9,456	9,549	11,214	9,824	9,110	508	452	566	992	147	553	11,235	2,058	22,545	15,355
Kamonyi	1,636	-	3,302	-	13,738	5,048	3,449	4,989	9,732	11,200	6,842	9,933	588	569	706	408	347	547	6,770	7,556	4,036	12,576
Karongi	1,595	-	-	-	7,391	7,505	8,463	6,047	11,864	12,384	12,010	11,678	910	615	1,059	835	311	603	8,257	3,510	12,754	608
Rutsiro	1,488	-	-	601	12,052	7,659	9,167	7,979	11,171	12,143	7,772	11,510	940	474	1,017	702	-	811	11,208	9,679	28,312	4,556
Rubavu	1,672	919	-	-	-	8,010	12,114	5,292	10,802	10,525	6,119	11,885	773	475	803	480	-	965	8,084	2,712	642	14,050
Nyabihu	1,325	893	-	1,192	10,158	6,845	12,064	-	7,755	10,214	6,688	7,258	641	417	648	951	-	110	13,067	6,312	8,445	449
Ngororero	1,057	814	-	1,021	15,546	6,125	4,352	6,546	7,656	8,213	6,923	7,712	777	462	837	770	-	276	9,977	4,460	25,217	9,136
Rusizi	1,548	470	4,316	-	11,044	6,486	3,904	6,924	9,203	8,187	7,473	10,066	665	678	620	901	553	614	9,460	9,468	7,730	3,608
Nyamasheke	1,684	779	3,911	541	9,942	4,420	5,123	4,834	7,795	7,965	7,919	7,697	783	645	845	727	408	509	11,820	6,171	-	7,961
Rulindo	1,443	-	3,857	1,265	12,207	6,641	4,580	4,644	9,788	11,217	8,772	9,305	561	503	616	682	436	593	10,670	6,535	9,961	18,974
Gakenke	1,653	-	1,478	604	12,668	6,607	5,704	6,141	11,021	12,526	8,799	11,019	842	508	946	832	905	542	7,121	11,528	11,269	8,186
Musanze	1,837	1,502	-	1,229	5,615	7,475	12,543	3,050	11,403	13,057	8,469	10,624	1,072	414	1,114	557	-	549	7,172	7,020	4,661	5,154
Burera	2,031	1,510	-	1,687	11,954	10,235	10,875	5,920	10,536	13,555	5,619	8,367	811	562	826	641	-	-	3,736	1,026	20,215	19,280
Gicumbi	1,347	932	-	727	12,966	9,396	8,892	-	11,044	13,908	7,454	9,985	805	592	901	644	467	727	8,969	2,264	19,176	9,957
Rwamagana	1,434	-	3,562	-	18,586	6,919	6,024	3,026	13,229	16,733	8,068	8,825	589	583	814	633	226	355	5,093	2,749	16,352	124,563
Nyagatare	1,954	1,465	4,074	-	14,635	4,723	5,801	-	14,551	18,392	7,808	11,127	653	643	745	503	417	719	5,459	2,844	48	24,708
Gatsibo	1,566	897	3,137	416	13,710	8,191	5,202	2,918	11,829	14,467	7,257	9,368	592	599	510	512	482	467	4,533	6,251	8,512	1,832
Kayonza	1,347	1,078	4,197	-	12,846	6,536	3,053	5,368	12,638	15,142	7,860	8,721	541	540	611	442	228	313	7,034	5,683	7,110	4,310
Kirehe	1,383	895	4,962	-	14,114	6,205	4,204	2,345	13,695	16,903	7,846	10,525	547	536	657	711	369	517	8,371	-	-	16,913
Ngoma	1,672	967	3,573	-	12,599	6,760	5,028	3,566	12,868	16,219	6,767	10,549	556	544	725	786	507	631	7,476	4,806	41,861	39,613
Bugesera	1,518	743	5,704	-	16,634	7,320	2,596	-	10,619	14,007	7,798	9,009	574	574	559	674	307	212	6,709	3,526	10,860	4,901
National	1,595	1,201	4,246	1,150	14,044	7,102	8,612	6,443	10,992	13,733	7,964	9,843	651	585	779	759	360	509	7,793	6,250	12,298	12,151
SSF	1,518	1,201	2,793	1,143	14,045	7,102	8,609	6,443	10,994	13,742	7,964	9,843	649	582	779	759	360	501	7,812	6,281	11,716	8,484
LSF	4,186	1,721	4,269	2,206	10,283	2,787	10,359	877	7,960	7,660	7,730	13,779	1,320	1,313	1,697	94	29	1,265	5,220	5,535	21,854	81,503

Source: NISR, SAS 2022

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

	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	2,311	-	3,481	-	40,079	9,247	-	-	2,642	2,642	-	-	455	455	-	-	-	382	15,621	1,510
Kicukiro	791	-	3,099	-	-	-	-	-	2,861	2,443	3,871	-	112	112	-	-	-	-	10,810	5,911
Nyanza	2,688	-	4,590	-	-	2,447	-	-	1,740	325	4,185	5,582	-	-	-	-	-	38	6,354	-
Gisagara	4,336	-	4,545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nyaruguru	3,870	-	-	-	-	-	10,591	-	18,174	7,156	21,864	31,868	-	-	-	-	-	-	-	460
Huye	3,747	-	4,009	-	-	-	-	-	15,221	15,554	2,540	-	294	294	-	-	-	794	29,298	-
Nyamagabe	-	-	-	-	-	-	10,143	-	-	-	-	-	-	-	-	-	-	-	-	-
Ruhango	-	-	4,996	-	-	-	-	-	4,936	-	4,510	23,895	106	112	73	-	-	-	-	-
Muhanga	2,868	-	2,613	999	-	-	24,992	-	-	-	-	-	2,370	-	2,370	-	-	201	-	-
Kamonyi	5,233	-	3,302	-	-	-	-	-	-	-	-	-	409	409	-	-	-	1,036	-	-
Karongi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rutsiro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubavu	-	-	-	-	-	-	9,693	-	17,478	17,478	-	-	-	-	-	85	-	-	-	-
Nyabihu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ngororero	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rusizi	2,000	-	4,316	-	-	-	-	-	-	-	-	-	485	485	-	-	-	-	-	11,496
Nyamasheke	-	-	3,911	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rulindo	2,348	-	3,857	2,845	-	-	27,310	-	-	-	-	-	2,464	-	2,464	422	-	65	9,367	-
Gakenke	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Musanze	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Burera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gicumbi	-	-	-	2,628	-	-	9,649	-	34,938	34,938	-	-	-	-	-	290	-	-	4,176	-
Rwamagana	3,935	-	3,562	-	30,125	1,735	2,377	-	5,710	5,357	9,225	21,964	720	720	-	10	34	164	3,588	1,612
Nyagatare	5,155	3,194	4,082	-	12,625	-	7,855	-	10,682	10,665	11,464	-	905	948	383	-	-	1,864	3,659	3,807
Gatsibo	3,056	2,378	3,138	416	49,929	6,447	9,623	-	19,085	16,677	33,441	48,906	946	937	1,520	-	76	1,061	-	-
Kayonza	3,043	429	4,197	-	26,611	3,116	3,931	877	6,372	6,282	7,248	14,506	469	469	-	-	29	635	3,395	10,053
Kirehe	5,983	-	4,962	-	-	-	-	-	-	-	-	-	1,707	1,707	-	-	-	1,854	6,113	-
Ngoma	3,655	-	3,552	-	100,160	457	4,367	-	1,933	1,388	6,336	8,384	1,301	1,219	3,431	59	11	-	3,861	5,251
Bugesera	1,559	829	5,717	-	4,818	2,769	5,244	-	7,720	3,457	3,830	12,112	326	326	-	-	-	363	3,557	2,175
National Average	**4,186**	**1,721**	**4,269**	**2,206**	**10,283**	**2,787**	**10,359**	**877**	**7,960**	**7,660**	**7,730**	**13,779**	**1,320**	**1,313**	**1,697**	**94**	**29**	**1,265**	**5,220**	**5,535**

Source: NISR, SAS 2022

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

District	Maize	Sorghum	Paddy rice	Wheat	Other Cereals	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Banana	Cooking Banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Peas	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops	Other crops	Total
Nyarugenge	766	-	-	-	-	1,811	1,938	207	273	10,407	2,841	1,833	5,733	1,485	1,464	20	-	11	140	1,896	207	908	3,005	23,052
Gasabo	3,959	-	765	-	13	10,400	8,003	2,804	583	20,665	9,784	2,947	7,934	4,878	4,609	269	84	164	129	4,990	3	11,577	521	69,538
Kicukiro	1,323	-	113	-	1	469	2,842	57	337	5,017	1,969	844	2,204	1,258	1,243	15	-	4	21	751	77	145	0	12,416
Nyanza	9,150	265	1,878	-	43	62,170	13,975	1,208	1,013	29,379	7,608	4,703	17,067	11,578	10,084	1,494	155	173	601	4,936	168	3,438	25	140,154
Gisagara	12,781	692	11,390	-	280	17,322	15,620	924	2,588	31,589	6,729	6,175	18,686	9,133	8,305	828	95	163	1,246	1,909	817	1,245	177	107,969
Nyaruguru	10,122	-	-	-	2	11,244	45,174	8,081	3,304	19,779	6,714	3,025	10,041	5,097	968	4,128	308	-	287	3,807	81	1,475	10	108,770
Huye	6,902	-	3,993	-	186	51,665	18,998	3,883	1,340	30,280	9,814	5,748	14,718	9,205	6,861	2,344	108	87	1,050	3,425	36	3,850	36	135,044
Nyamagabe	7,302	-	44	65	0	14,967	55,282	16,199	1,766	21,515	4,040	2,215	15,260	6,370	1,692	4,679	1,318	-	522	2,974	190	278	-	128,792
Ruhango	5,443	8	4,233	-	5	106,605	12,730	1,653	2,100	24,376	3,878	2,946	17,552	8,548	6,139	2,409	73	250	1,441	3,594	25	7,513	144	178,742
Muhanga	3,040	19	380	8	124	20,764	31,204	1,093	18,490	60,730	12,178	6,977	41,575	3,811	1,739	2,071	81	3	1,037	6,029	332	6,059	6,813	160,017
Kamonyi	7,627	-	627	-	-	27,181	11,038	2,422	1,641	47,285	8,959	4,407	33,919	8,427	7,001	1,426	38	279	1,271	5,724	6,296	2,266	2,393	124,516
Karongi	11,937	-	-	-	-	15,257	36,230	9,868	5,507	50,539	10,264	7,514	32,761	6,133	1,396	4,738	574	5	681	6,784	14	5,438	252	149,218
Rutsiro	9,381	-	-	144	-	2,367	29,691	31,914	9,977	34,218	9,282	3,168	21,768	3,951	281	3,669	412	-	636	2,516	3,472	4,666	8,640	141,987
Rubavu	2,916	87	-	-	-	-	4,967	76,047	592	16,781	5,472	1,036	10,273	6,081	340	5,742	43	-	297	16,896	211	370	8,165	133,454
Nyabihu	3,669	709	-	937	-	1,266	22,666	122,219	-	3,399	983	781	1,635	4,645	98	4,547	846	-	1	8,911	657	941	287	171,153
Ngororero	4,786	502	-	415	-	18,377	37,491	8,689	6,376	31,913	6,229	5,393	20,291	9,644	914	8,731	306	-	361	2,607	540	2,361	1,550	125,917
Rusizi	11,534	9	6,019	-	-	17,388	14,220	875	11,215	27,528	8,493	1,820	17,215	8,085	6,450	1,634	128	377	772	5,935	509	366	1,449	106,408
Nyamasheke	8,848	26	1,456	15	116	28,890	14,132	534	6,874	20,200	5,765	2,157	12,279	6,780	1,729	5,051	119	137	836	2,912	372	-	1,382	93,629
Rulindo	6,361	-	63	63	1	10,063	31,995	5,649	328	21,950	7,760	3,949	10,240	6,841	3,014	3,827	348	34	199	10,841	762	1,201	2,345	99,042
Gakenke	17,797	-	88	86	378	13,775	56,190	6,477	7,280	71,166	14,750	6,984	49,432	7,847	1,130	6,717	469	152	349	3,570	2,451	1,905	2,986	192,966
Musanze	12,581	3,433	-	1,201	1	177	17,689	56,721	497	8,924	4,409	834	3,681	6,510	152	6,358	123	-	11	4,846	458	704	3,359	117,234
Burera	19,365	1,718	-	962	69	469	26,057	57,321	333	7,959	4,551	211	3,197	8,424	337	8,087	1,071	-	-	1,199	59	5,402	570	130,976
Gicumbi	7,079	201	-	124	87	8,442	69,457	28,142	-	19,781	10,641	3,254	5,886	15,931	3,642	12,289	1,083	88	116	4,335	162	14,269	773	170,070
Rwamagana	13,353	-	1,785	-	245	22,309	15,055	6,629	395	78,122	56,683	8,338	13,101	10,135	9,796	339	71	408	87	5,159	488	5,450	37,846	197,538
Nyagatare	41,708	25,028	6,873	-	440	20,010	8,270	3,373	-	75,973	50,793	5,139	20,041	11,470	10,110	1,360	105	673	537	3,388	265	38	2,196	200,347
Gatsibo	25,433	3,695	4,679	0	1,043	21,690	21,419	12,376	213	115,104	76,465	10,331	28,308	13,051	12,137	913	35	975	416	4,259	742	341	397	225,866
Kayonza	16,806	3,075	6,941	-	477	58,149	14,088	5,828	1,095	59,661	44,806	4,639	10,216	8,789	8,733	56	57	316	50	5,475	862	1,290	48	183,007
Kirehe	31,085	2,148	4,621	-	255	22,851	10,791	5,786	464	106,059	70,128	5,597	30,334	11,335	10,123	1,212	131	235	226	3,429	-	-	3,224	202,640
Ngoma	21,509	322	3,097	-	1,803	34,481	15,406	8,271	665	95,301	60,917	7,380	27,004	9,433	8,652	780	49	381	283	3,075	291	16,474	8,908	219,748
Bugesera	14,346	3,077	7,960	-	24	17,299	31,703	826	-	46,729	22,685	6,490	17,554	10,944	10,906	38	18	532	140	6,432	711	2,813	2,745	146,297
National	348,907	45,016	67,002	4,019	5,592	637,856	694,320	486,075	85,245	1,192,331	545,588	126,838	519,904	235,818	140,047	95,771	8,247	5,445	13,741	142,604	21,261	102,784	100,244	4,196,506

Source: NISR, SAS 2022

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Table 13: 2022 Season A_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	30.5	57.7	0.7	1.6	5.8	0.0	0.9	0.3	2.3	0.1	0.1
Sorghum	58.5	27.6	1.2	2.6	3.8	0.2	2.8	0.0	3.3	0.1	0.0
Paddy rice	80.9	12.7	1.3	0.2	1.9	0.0	0.5	0.0	0.0	2.0	0.6
Wheat	34.3	47.8	0.6	0.2	5.2	0.1	11.2	0.1	0.3	0.0	0.2
Other cereals	72.0	18.8	0.8	1.2	2.5	0.0	3.2	0.0	0.3	1.1	0.0
Sweet potato	23.6	65.0	1.3	0.5	5.3	0.0	0.0	3.8	0.1	0.1	0.1
Irish potato	44.5	35.4	1.0	0.3	4.1	0.0	14.1	0.1	0.1	0.3	0.0
Yam & Taro	23.4	66.7	1.0	0.4	4.6	0.0	3.3	0.2	0.0	0.0	0.4
Cassava	42.5	51.6	0.9	1.0	3.4	0.0	0.0	0.2	0.1	0.1	0.2
Bush bean	15.9	60.8	1.2	1.8	4.0	0.1	13.4	0.0	2.3	0.2	0.2
Climbing bean	13.6	62.1	0.9	0.6	6.5	0.1	14.1	0.0	1.8	0.1	0.1
Pea	34.6	48.6	0.3	0.1	2.6	0.4	13.2	0.0	0.1	0.2	0.0
Groundnut	12.1	67.3	0.3	0.5	1.7	0.0	16.9	0.0	1.1	0.0	0.0
Soybean	21.1	53.6	0.3	1.0	3.2	0.1	19.9	0.1	0.5	0.1	0.0
Cooking banana	34.3	61.4	0.6	0.3	3.2	0.0	0.0	0.0	0.0	0.0	0.1
Dessert banana	64.8	32.2	0.2	0.1	2.4	0.0	0.0	0.0	0.0	0.2	0.2
Banana for beer	77.8	17.3	0.1	0.1	4.0	0.0	0.0	0.0	0.0	0.5	0.1
Vegetables	72.6	21.5	0.0	0.3	3.6	0.0	1.0	0.0	0.0	0.9	0.1
Fruits	81.1	14.7	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.3	0.5
Fodder crops	4.8	0.0	0.8	0.0	0.5	1.4	0.0	91.0	0.1	0.0	1.4
Other crops	82.8	11.6	0.0	0.0	1.4	0.0	0.1	0.0	0.0	0.0	4.0

Source : NISR, SAS 2022

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

District	Cropping system	
	Pure Cropping	Mixed Cropping
Nyarugenge	31.83	68.17
Gasabo	24.18	75.82
Kicukiro	21.13	78.87
Nyanza	26.58	73.42
Gisagara	28.54	71.46
Nyaruguru	40.11	59.89
Huye	19.86	80.14
Nyamagabe	46.09	53.91
Ruhango	33.82	66.18
Muhanga	31.03	68.97
Kamonyi	24.81	75.19
Karongi	43.66	56.34
Rutsiro	41.80	58.20
Rubavu	48.27	51.73
Nyabihu	42.44	57.56
Ngororero	36.19	63.81
Rusizi	21.43	78.57
Nyamasheke	34.51	65.49
Rulindo	27.32	72.68
Gakenke	23.33	76.67
Musanze	36.37	63.63
Burera	52.51	47.49
Gicumbi	38.16	61.84
Rwamagana	12.09	87.91
Nyagatare	37.46	62.54
Gatsibo	24.31	75.69
Kayonza	25.17	74.83
Kirehe	21.74	78.26
Ngoma	24.02	75.98
Bugesera	25.76	74.24
SSF	29.19	70.81
LSF	95.12	4.88
National	30.75	69.25

Source: NISR, SAS 2022

Table 15: 2022 Season A_Sowing dates by district (Percentage)

District	Before 01/09	Between 01-15 /09	Between 16- 30/09	Between 01-15/10	Between16- 31/10	After 31/10	Other season (for perennial crops only)	Total
Nyarugenge	0.35	5.81	9.51	35.74	4.58	5.46	38.56	100
Gasabo	2.29	35.53	22.52	5.63	1.32	1.14	31.57	100
Kicukiro	1.05	7.19	13.47	38.92	6.89	4.34	28.14	100
Nyanza	1.55	6.86	16.14	34.45	6.8	4.64	29.56	100
Gisagara	3.15	19.82	19.88	24.28	4.59	3.67	24.61	100
Nyaruguru	7.47	19	17.87	18.33	4.98	7.24	25.11	100
Huye	5.39	15.17	18.5	24.26	5.77	3.2	27.71	100
Nyamagabe	6.88	12.3	20.13	20.86	6.05	10.53	23.25	100
Ruhango	3.28	12	13.54	29.62	6.57	3.55	31.43	100
Muhanga	3.51	14.19	10.91	14.11	4.96	9.38	42.94	100
Kamonyi	1.13	4.85	17.68	28.57	4.78	6.04	36.94	100
Karongi	5.04	18.42	26.95	12.28	3.57	2.84	30.89	100
Rutsiro	20.67	23.89	13	3.53	2.02	4.13	32.76	100
Rubavu	25.55	36.71	4.88	3.72	2.7	6.68	19.77	100
Nyabihu	24.6	26.82	14.26	7.71	3.17	8.24	15.21	100
Ngororero	11.24	33.14	8.74	5	1.47	4.56	35.86	100
Rusizi	2.4	9.23	34.89	29.97	4.49	2.34	16.68	100
Nyamasheke	3.55	19.49	28.73	11.44	1.18	2.84	32.75	100
Rulindo	6.19	30.71	16.88	6.65	1.91	3.59	34.07	100
Gakenke	3.74	23.69	12.19	6.26	2.46	6.31	45.35	100
Musanze	30.88	30.78	7.55	5.64	1.91	6.41	16.83	100
Burera	19.47	38.83	17.04	6.08	2.65	4.2	11.73	100
Gicumbi	6.26	42.58	14.32	6.04	1.34	3.88	25.58	100
Rwamagana	1.06	8.43	22.28	25.13	2.93	2.93	37.23	100
Nyagatare	3.88	41.2	19.58	9.66	0.89	1.65	23.14	100
Gatsibo	1.29	24.92	27.59	9.76	1.58	1	33.86	100
Kayonza	1.31	5.9	23	23.6	10.85	5.18	30.15	100
Kirehe	0.65	3.1	11.29	38.08	14.39	2.8	29.69	100
Ngoma	1.25	8.54	24.41	22.92	5.74	3	34.15	100
Bugesera	1.99	8.37	16.53	32.58	7.58	2.98	29.97	100
National	5.56	18.4	18.29	18.92	4.57	4.16	30.11	100

Source: NISR, SAS 2022

Table 16: 2022 Season A_Sowing date by crops (Percentage)

Crops	Before 01/09	Between 01-15 /09	Between 16- 30/09	Between 01-15/10	Between16- 31/10	After 31/10	Other season (for perennial crops only)	Total
Fruits	1.2	6.29	4.19	5.39	3.89	13.17	65.87	100
Vegetables	15.9	16.93	9.12	18.37	8.4	26.17	5.16	100
Other crops	1.24	3.1	2.17	9.6	1.55	5.88	76.47	100
Other cereals	2.37	18.93	26.33	35.21	10.65	6.51	0	100
Taro & Yams	13.5	21.95	20.48	14.39	5.25	15.23	9.24	100
Fodder crops	2.08	10.03	2.08	6.92	2.42	5.88	70.59	100
Maize	6.32	27.3	28.89	29.22	6.4	1.72	0.16	100
Paddy rice	89.3	2.67	2	2.67	1.33	2	0	100
Sorghum	23	37.48	26	12.17	0.97	0.28	0.14	100
Wheat	13.1	14.29	11.9	22.62	14.29	23.81	0	100
Bush bean	0.95	19.03	29.84	39.51	9.36	1.3	0.02	100
Climbing bean	6.84	42.72	28.58	18.59	2.78	0.49	0	100
Pea	9.94	34.13	22.12	20.51	5.77	7.53	0	100
Irish potato	21	24.03	20.19	18.1	5.83	10.28	0.56	100
Sweet potato	13.2	11.6	6.99	9.14	5.96	22.94	30.2	100
Soybean	0.28	24.09	27.36	37.82	7.47	2.99	0	100
Groundnut	0.48	18.18	33.17	40.35	7.5	0.32	0	100
Cooking banana	0.23	0.88	0.69	0.2	0.16	0.2	97.64	100
Dessert banana	0.14	0.71	0.14	0.28	0.11	0.11	98.51	100
Banana for beer	0.12	0.72	0.17	0.2	0.06	0.2	98.53	100
Cassava	3.55	18.28	17.57	13.78	2.63	4.37	39.81	100

Source: NISR, SAS 2022

Table 17: **2022 Season A_Use of seeds by farmer type per district (Percentage)**

District	Percentage of farmers who used improved seeds			Percentage of sampled plots in which improved seeds was used			Percentage of land size in which improved seeds were used		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	SSF
Nyarugenge	22.40	22.40	-	22.03	22.03	-	20.83	20.83	-
Gasabo	44.68	44.65	45.45	42.12	40.05	56.14	40.94	39.76	89.76
Kicukiro	49.52	48.77	80.00	48.35	46.75	81.82	48.65	47.23	97.57
Nyanza	35.42	34.46	88.89	34.78	34.49	44.44	36.04	34.84	80.87
Gisagara	40.08	37.80	90.48	36.92	34.65	81.48	39.00	34.04	79.69
Nyaruguru	34.40	32.43	100.00	31.97	30.16	84.62	31.88	31.04	94.37
Huye	37.45	34.10	96.00	32.10	29.20	69.23	32.54	29.68	95.08
Nyamagabe	17.72	17.52	100.00	14.43	14.26	100.00	14.38	14.31	100.00
Ruhango	23.14	22.48	71.43	21.52	21.13	41.67	23.35	21.49	90.55
Muhanga	16.17	14.85	87.50	15.73	14.01	84.62	15.38	13.93	98.07
Kamonyi	29.54	28.33	83.33	26.04	24.61	86.67	26.12	24.76	93.21
Karongi	30.12	29.95	100.00	25.40	25.10	100.00	24.41	24.36	100.00
Rutsiro	18.07	18.07	-	21.78	21.78	-	20.71	20.71	-
Rubavu	12.84	12.72	25.00	14.00	14.06	11.11	14.82	14.80	25.12
Nyabihu	17.67	17.67	-	19.92	19.92	-	19.81	19.81	-
Ngororero	15.06	15.06	-	13.86	13.86	-	14.70	14.70	-
Rusizi	37.24	36.97	50.00	31.99	31.95	33.33	35.39	32.57	85.67
Nyamasheke	22.27	21.93	42.86	20.83	20.34	50.00	20.23	19.83	49.90
Rulindo	33.86	33.11	100.00	31.47	30.86	47.37	30.87	30.83	43.46
Gakenke	34.38	34.38	-	29.04	29.04	-	28.77	28.77	-
Musanze	32.39	32.39	-	28.31	28.31	-	28.41	28.41	-
Burera	39.52	39.52	-	36.74	36.74	-	36.40	36.40	-
Gicumbi	24.71	24.67	33.33	21.93	21.60	50.00	20.50	20.49	49.57
Rwamagana	54.50	53.23	77.42	49.88	50.08	49.17	49.41	48.57	83.41
Nyagatare	37.88	33.70	92.86	35.87	29.20	73.45	33.32	30.30	96.85
Gatsibo	38.75	36.73	95.65	34.51	31.04	76.19	36.96	34.28	98.62
Kayonza	43.10	40.18	89.29	41.87	39.45	51.45	44.23	42.17	90.49
Kirehe	45.66	44.98	90.00	42.10	40.51	91.67	43.45	41.90	81.73
Ngoma	40.53	39.61	72.22	34.61	32.87	52.94	33.64	32.98	63.56
Bugesera	45.22	43.45	72.97	43.98	40.39	61.94	42.13	40.29	90.28
National	33.11	31.99	81.71	30.93	29.16	60.32	31.46	30.04	87.28

Source : NISR, SAS 2022

Table 18: 2022 Season A_Seed type by crops (Percentage)

Crop	Traditional seeds	Improved seeds	Total
Fruits	64.26	35.74	100
Vegetables	53.73	46.27	100
Other crops	70.28	29.72	100
Other cereals	85.16	14.84	100
Taro & Yams	99.89	0.11	100
Fodder crops	76.47	23.53	100
Maize	41.77	58.23	100
Paddy rice	32.87	67.13	100
Sorghum	100.00	-	100
Wheat	90.36	9.64	100
Bush bean	99.44	0.56	100
Climbing bean	99.75	0.25	100
Pea	100.00	-	100
Irish potato	96.98	3.02	100
Sweet potato	99.69	0.31	100
Soybean	96.55	3.45	100
Groundnut	100.00	-	100
Cooking banana	99.93	0.07	100
Dessert banana	98.93	1.07	100
Banana for beer	99.33	0.67	100
Cassava	99.72	0.28	100
National	86.77	13.23	100

Source: NISR, SAS 2022

Table 19: 2022 Season A_Percentage of farmers by source of improved seeds per district

District	Government (MINAGRI/ RAB/NAEB)	Recognized seed multipliers	Agro-dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	10.17	-	79.66	-	10.17	-	-	100
Gasabo	1.91	2.39	60.77	2.39	27.27	4.31	0.96	100
Kicukiro	1.53	4.58	80.15	8.40	3.82	0.76	0.76	100
Nyanza	5.81	18.22	19.77	44.19	8.14	2.33	1.55	100
Gisagara	1.77	3.98	26.55	52.21	4.87	9.73	0.88	100
Nyaruguru	2.82	0.70	12.68	78.17	2.82	2.82	-	100
Huye	4.55	8.59	24.24	55.05	7.07	0.51	-	100
Nyamagabe	2.35	4.71	24.71	65.88	2.35	-	-	100
Ruhango	2.07	3.45	31.72	35.17	17.24	6.21	4.14	100
Muhanga	14.13	2.17	21.74	42.39	3.26	13.04	3.26	100
Kamonyi	2.12	2.65	51.32	35.98	4.23	2.65	1.06	100
Karongi	8.55	1.32	38.16	44.08	1.32	4.61	1.97	100
Rutsiro	9.68	2.15	45.16	39.78	-	3.23	-	100
Rubavu	2.63	5.26	69.74	13.16	2.63	3.95	2.63	100
Nyabihu	10.38	4.72	45.28	30.19	7.55	1.89	-	100
Ngororero	4.55	11.36	28.41	53.41	-	2.27	-	100
Rusizi	2.87	2.87	11.96	78.47	2.39	0.48	0.96	100
Nyamasheke	7.02	2.63	14.91	66.67	-	0.88	7.89	100
Rulindo	2.62	3.66	70.68	12.04	6.81	3.14	1.05	100
Gakenke	1.67	0.42	46.67	31.67	11.25	7.92	0.42	100
Musanze	2.16	2.16	47.03	34.59	13.51	-	0.54	100
Burera	0.91	-	53.64	43.64	0.91	0.91	-	100
Gicumbi	3.01	5.42	59.64	27.11	3.61	0.60	0.60	100
Rwamagana	4.33	7.36	45.45	30.52	9.74	0.87	1.73	100
Nyagatare	7.74	11.29	49.68	23.55	1.61	6.13	-	100
Gatsibo	7.41	6.17	22.22	52.78	8.02	2.47	0.93	100
Kayonza	10.41	5.68	22.40	45.43	9.46	4.73	1.89	100
Kirehe	8.02	5.16	4.01	67.05	1.43	11.46	2.87	100
Ngoma	3.95	0.91	19.76	59.88	9.73	5.17	0.61	100
Bugesera	2.76	10.55	43.22	30.15	8.79	4.52	-	100
National	4.82	5.34	36.57	41.22	6.99	3.91	1.15	100

Source: NISR, SAS 2022

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

Crop	Government (MINAGRI/RAB/	Recognized seed multipliers	Agro dealers	NGOs/	Market	Agriculture cooperative	Other source	Total
Fruits	29.06	24.79	5.13	23.08	11.97	4.27	1.71	100.00
Vegetables	1.52	2.03	51.39	6.33	34.43	2.78	1.52	100.00
Other crops	33.33	25.76	3.03	7.58	4.55	16.67	9.09	100.00
Other cereals	1.92	-	9.62	34.62	13.46	25.00	15.38	100.00
Taro & Yams	-	-	50.00	-	-	-	50.00	100.00
Fodder crops	37.70	-	39.34	4.92	13.11	3.28	1.64	100.00
Maize	2.92	1.79	38.84	48.13	4.78	2.90	0.64	100.00
Paddy rice	6.80	50.49	-	-	0.97	41.75	-	100.00
Wheat	33.33	-	66.67	-	-	-	-	100.00
Bush bean	21.57	21.57	27.45	25.49	1.96	-	1.96	100.00
Climbing bean	55.56	-	22.22	22.22	-	-	-	100.00
Pea	66.67	-	-	-	-	33.33	-	100.00
Irish potato	18.57	47.14	10.00	1.43	15.71	5.71	1.43	100.00
Sweet potato	50.00	33.33	-	-	-	-	16.67	100.00
Soybean	17.95	38.46	20.51	12.82	2.56	7.69	-	100.00
Cooking banana	-	60.00	20.00	-	-	-	20.00	100.00
Dessert banana	10.87	65.22	4.35	2.17	6.52	-	10.87	100.00
Banana for beer	-	81.08	5.41	-	2.70	-	10.81	100.00
Cassava	27.78	27.78	11.11	27.78	-	-	5.56	100.00

Source: NISR, SAS 2022

Table 21: 2022 Season A_Use of organic fertilizer by farmer type per district (Percentage)

District	Percentage of farmers who applied organic fertilizer			Percentage of plots in which organic fertilizer was applied			Percentage of land size in which organic fertilizer was applied		
	Overall	**SSF**	**LSF**	**Overall**	**SSF**	**LSF**	**Overall**	**SSF**	**LSF**
Nyarugenge	56.3	56.3	0.0	54.4	54.4	0.0	56.9	56.9	0.0
Gasabo	69.1	69.1	81.8	66.0	66.0	89.5	67.8	67.2	93.2
Kicukiro	40.6	40.6	100.0	40.1	40.1	45.5	57.0	56.8	63.6
Nyanza	65.3	65.3	88.9	65.0	65.0	83.3	62.5	62.1	81.3
Gisagara	61.0	61.0	66.7	58.7	58.7	59.3	61.7	63.1	50.0
Nyaruguru	90.4	90.4	100.0	88.8	88.8	84.6	88.0	87.8	99.6
Huye	68.8	68.8	80.0	67.6	67.6	79.5	68.6	68.2	77.3
Nyamagabe	72.0	72.0	100.0	69.8	69.8	100.0	70.8	70.7	100.0
Ruhango	65.5	65.5	28.6	62.8	62.8	16.7	60.7	60.8	55.7
Muhanga	78.2	78.2	100.0	73.1	73.1	100.0	72.4	71.9	100.0
Kamonyi	73.7	73.7	100.0	68.1	68.1	93.3	64.7	63.9	99.8
Karongi	72.1	72.1	100.0	69.0	69.0	100.0	69.7	69.7	100.0
Rutsiro	71.5	71.5	0.0	69.0	69.0	0.0	75.4	75.4	0.0
Rubavu	34.1	34.1	75.0	32.8	32.8	55.6	35.4	35.3	75.0
Nyabihu	63.8	63.8	0.0	63.5	63.5	0.0	66.6	66.6	0.0
Ngororero	73.7	73.7	0.0	70.4	70.4	0.0	77.4	77.4	0.0
Rusizi	77.0	77.0	70.0	75.7	75.7	46.7	68.2	68.2	67.0
Nyamasheke	84.4	84.4	57.1	80.2	80.2	50.0	81.4	81.9	45.0
Rulindo	85.0	85.0	80.0	83.7	83.7	47.4	87.1	87.2	50.2
Gakenke	81.9	81.9	0.0	79.6	79.6	0.0	83.5	83.5	0.0
Musanze	64.6	64.6	0.0	63.8	63.8	0.0	64.8	64.8	0.0
Burera	74.4	74.4	0.0	74.9	74.9	0.0	77.0	77.0	0.0
Gicumbi	84.9	84.9	66.7	83.6	83.6	87.5	84.0	84.0	78.2
Rwamagana	68.4	68.4	74.2	64.6	64.6	64.1	69.7	70.3	43.4
Nyagatare	33.8	33.8	50.0	32.2	32.2	43.4	38.9	40.2	11.6
Gatsibo	68.6	68.6	87.0	65.7	65.7	66.7	69.7	70.1	61.3
Kayonza	50.6	50.6	78.6	48.5	48.5	58.0	50.4	49.7	66.3
Kirehe	60.5	60.5	90.0	57.7	57.7	87.5	61.5	60.0	96.4
Ngoma	58.6	58.6	83.3	53.9	53.9	54.4	58.9	58.5	74.0
Bugesera	51.8	51.8	59.5	48.9	48.9	57.5	48.8	47.6	78.9
National	69.7	69.7	73.8	67.4	67.4	62.3	65.4	65.5	62.5

Source : NISR, SAS 2022

Table 22: 2022 Season A Use of inorganic fertilizer by farmer type per district (Percentage)

District	Percentage of farmers who used inorganic fertilizers			Percentage of plots in which inorganic fertilizer was applied			Percentage of land under which inorganic fertilizer was applied		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	14.4	14.4	0.0	12.0	12.0	0.0	13.8	13.8	0.0
Gasabo	27.3	26.1	63.6	23.0	23.0	26.3	24.6	23.3	78.0
Kicukiro	40.2	39.2	80.0	26.0	26.0	33.3	40.4	38.9	90.0
Nyanza	19.1	17.9	88.9	13.7	13.7	50.0	19.3	17.3	97.7
Gisagara	32.9	29.8	100.0	26.8	26.8	92.6	36.4	28.8	98.9
Nyaruguru	60.6	59.5	100.0	53.7	53.7	92.3	58.7	58.2	99.8
Huye	29.1	25.1	100.0	21.8	21.8	68.3	25.7	22.3	98.8
Nyamagabe	38.3	38.1	100.0	27.4	27.4	100.0	33.6	33.6	100.0
Ruhango	14.3	13.3	85.7	9.1	9.1	46.2	14.2	12.2	90.7
Muhanga	24.4	23.0	100.0	16.8	16.8	100.0	22.0	20.7	100.0
Kamonyi	18.1	16.5	91.7	15.9	15.9	73.3	16.7	15.2	95.4
Karongi	32.8	32.6	100.0	27.2	27.2	33.3	29.7	29.7	35.8
Rutsiro	41.3	41.3	0.0	34.8	34.8	0.0	38.8	38.8	0.0
Rubavu	48.2	48.1	50.0	34.1	34.1	33.3	47.0	47.0	38.5
Nyabihu	60.7	60.7	0.0	46.7	46.7	0.0	59.4	59.4	0.0
Ngororero	33.0	33.0	0.0	25.6	25.6	0.0	32.2	32.2	0.0
Rusizi	58.7	58.2	80.0	51.1	51.1	53.3	58.1	56.4	87.5
Nyamasheke	62.1	61.7	85.7	59.2	59.2	75.0	60.0	59.5	97.2
Rulindo	40.0	39.3	100.0	29.2	29.2	84.2	37.5	37.3	95.8
Gakenke	57.3	57.3	0.0	50.7	50.7	0.0	53.2	53.2	0.0
Musanze	46.6	46.6	0.0	36.7	36.7	0.0	45.8	45.8	0.0
Burera	43.5	43.5	0.0	36.8	36.8	0.0	42.2	42.2	0.0
Gicumbi	33.2	33.0	66.7	26.4	26.4	37.5	29.6	29.6	53.2
Rwamagana	45.2	44.1	64.5	33.2	33.2	25.4	41.7	41.0	71.0
Nyagatare	41.9	37.9	95.2	26.9	26.9	52.2	37.4	34.6	94.6
Gatsibo	35.7	33.7	91.3	24.5	24.5	53.1	34.5	31.9	94.5
Kayonza	35.1	32.4	78.6	24.7	24.7	34.1	32.3	29.9	86.6
Kirehe	43.9	43.3	80.0	35.3	35.3	87.5	43.8	41.7	96.7
Ngoma	35.4	34.0	83.3	24.0	24.0	29.6	32.5	31.3	88.8
Bugesera	38.1	36.6	62.2	30.0	30.0	43.3	34.3	32.4	83.7
National	38.6	37.6	83.5	30.3	30.3	44.6	36.6	35.2	92.2

Source: NISR, SAS 2022

Table 23: 2022 Season A_Percentage of farmers by source of inorganic fertilizers per district

District	Government (MINAGRI/RAB/NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	6.2	90.3	-	3.6	-	-	100.0
Gasabo	0.9	69.7	0.8	26.7	1.9	-	100.0
Kicukiro	0.5	90.1	7.8	1.6	0.0	-	100.0
Nyanza	3.5	26.6	58.7	11.2	-	-	100.0
Gisagara	0.6	25.3	68.5	3.8	1.9	-	100.0
Nyaruguru	2.9	21.1	72.5	2.4	1.1	-	100.0
Huye	0.6	31.3	63.6	2.2	2.3	-	100.0
Nyamagabe	0.8	36.1	61.1	2.0	-	-	100.0
Ruhango	1.2	30.8	63.3	1.5	3.2	-	100.0
Muhanga	5.1	29.4	45.4	16.4	3.1	0.7	100.0
Kamonyi	2.7	37.3	52.3	2.0	0.3	5.5	100.0
Karongi	1.0	41.3	55.1	1.1	1.5	-	100.0
Rutsiro	18.0	53.0	26.1	0.9	1.9	-	100.0
Rubavu	0.4	73.8	12.4	12.5	0.9	-	100.0
Nyabihu	-	81.5	13.0	5.5	-	-	100.0
Ngororero	1.0	49.2	48.6	-	1.2	-	100.0
Rusizi	1.7	9.3	77.6	11.0	0.4	-	100.0
Nyamasheke	2.7	12.7	82.0	2.4	-	0.1	100.0
Rulindo	0.8	72.4	18.3	7.1	1.5	-	100.0
Gakenke	0.8	53.8	32.6	9.5	3.3	-	100.0
Musanze	-	71.6	24.1	4.4	-	-	100.0
Burera	-	65.2	34.3	-	0.5	-	100.0
Gicumbi	1.7	62.7	33.4	1.4	0.3	0.5	100.0
Rwamagana	3.0	54.9	31.7	7.4	2.6	0.3	100.0
Nyagatare	-	71.8	24.2	1.2	2.3	0.6	100.0
Gatsibo	1.0	29.1	53.9	15.5	0.5	-	100.0
Kayonza	1.3	34.1	55.7	5.1	3.8	-	100.0
Kirehe	1.8	9.6	68.0	4.7	13.6	2.4	100.0
Ngoma	5.6	21.1	57.6	13.1	2.8	-	100.0
Bugesera	0.3	48.7	42.8	2.1	6.1	-	100.0
National	2.2	43.6	46.7	5.4	1.8	0.3	100.0

Source: NISR, SAS 2022

Table 24: 2022 Season A_Source of inorganic fertilizer by type of fertilizer

Fertilizer name	Government (MINAGRI/RAB/NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source
NPK 17-17-17	1.5	65.9	26.2	5.0	1.3	0.0
NPK 20-10-10	78.2	2.7	5.3	4.2	9.7	-
NPK 25-5-5	29.9	6.7	18.7	-	44.8	-
NPK 22-6-12	66.2	21.3	-	-	12.5	-
Other NPK	0.6	76.8	22.6	-	-	-
Urea	0.7	38.9	54.4	4.5	1.3	0.3
Liquid urea (Mbonea M)	-	78.7	5.8	14.1	1.4	-
DAP	0.6	36.7	56.0	5.0	1.4	0.3
TSP	-	100.0	-	-	-	-
KCL/MOP	-	99.7	0.3	-	-	-
Omax	-	80.4	15.0	-	-	4.7
Winner	-	99.5	0.5	-	-	-
Yara Viva	4.1	80.4	5.3	-	10.2	-
Amidas	0.1	27.9	69.8	-	2.2	-
Cereal	0.5	87.0	2.7	-	9.9	-
Boaster	-	33.5	66.5	-	-	-
DI Grow	-	36.4	56.4	7.1	0.1	-
Other type of fertilizer	-	80.3	10.6	0.7	8.4	-
National	1.7	41.5	50.2	4.7	1.6	0.3

Source: NISR, SAS 2022

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

District	NPK	Urea	DAP	KCL/MOP	Others	Total
Nyarugenge	8.67	54.86	26.75	-	9.72	100
Gasabo	9.69	50.84	39.46	-	-	100
Kicukiro	8.36	41.58	50.05	-	0.01	100
Nyanza	10.03	44.27	45.70	-	-	100
Gisagara	6.10	44.67	49.16	-	0.07	100
Nyaruguru	8.13	36.31	55.24	-	0.32	100
Huye	20.96	33.64	44.91	-	0.49	100
Nyamagabe	12.78	39.85	47.15	-	0.22	100
Ruhango	8.48	48.72	42.80	-	-	100
Muhanga	3.08	45.47	51.44	-	-	100
Kamonyi	27.94	47.06	24.99	-	-	100
Karongi	7.43	40.88	51.69	-	-	100
Rutsiro	46.88	21.94	30.39	-	0.79	100
Rubavu	47.46	23.72	27.36	-	1.46	100
Nyabihu	44.93	23.67	26.92	-	4.48	100
Ngororero	8.67	27.99	61.40	-	1.94	100
Rusizi	7.10	37.75	54.68	-	0.47	100
Nyamasheke	5.33	35.18	59.49	-	-	100
Rulindo	18.18	45.74	35.28	-	0.81	100
Gakenke	4.71	43.27	51.46	-	0.56	100
Musanze	25.05	34.63	37.57	-	2.75	100
Burera	19.58	33.13	45.70	-	1.59	100
Gicumbi	24.86	35.60	39.46	-	0.09	100
Rwamagana	8.75	40.27	49.05	0.16	1.78	100
Nyagatare	3.23	53.55	42.32	-	0.90	100
Gatsibo	15.26	40.06	43.58	-	1.10	100
Kayonza	17.34	35.87	46.02	-	0.77	100
Kirehe	1.14	39.81	58.59	-	0.45	100
Ngoma	9.44	43.57	46.91	-	0.08	100
Bugesera	6.63	27.76	65.53	-	0.08	100
National	14.47	37.81	46.94	-	0.78	100

Source: NISR, SAS 2022

Table 26: 2022 Season A_Use of pesticides by farmer type per district (Percentage)

District	Percentage of farmers who used pesticides			Percentage of plots in which pesticides were used			Percentage of land size in which pesticides were used		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	9.7	9.7	0.0	11.1	11.1	0.0	9.6	9.6	0.0
Gasabo	20.7	18.9	72.7	15.6	15.6	33.3	19.4	17.9	79.8
Kicukiro	23.9	23.0	60.0	13.5	13.5	33.3	27.6	25.7	90.0
Nyanza	16.6	15.3	88.9	15.7	15.7	55.6	17.2	15.1	98.1
Gisagara	19.9	17.0	85.7	16.7	16.7	85.2	26.2	17.7	96.5
Nyaruguru	27.4	25.5	90.0	19.4	19.4	92.3	27.2	26.2	99.8
Huye	15.7	11.2	96.0	10.7	10.7	65.9	14.2	10.4	96.2
Nyamagabe	16.7	16.5	100.0	10.1	10.1	100.0	17.8	17.7	100.0
Ruhango	16.2	15.2	85.7	14.0	14.0	53.9	17.0	14.8	99.5
Muhanga	11.1	9.5	100.0	10.6	10.6	76.9	12.2	10.7	97.4
Kamonyi	15.6	14.1	83.3	16.0	16.0	73.3	14.9	13.3	93.0
Karongi	10.9	10.7	100.0	10.4	10.4	33.3	10.7	10.6	35.8
Rutsiro	13.6	13.6	0.0	14.2	14.2	0.0	14.4	14.4	0.0
Rubavu	48.9	49.1	25.0	32.8	32.8	33.3	48.9	49.0	38.5
Nyabihu	52.5	52.5	0.0	42.7	42.7	0.0	52.8	52.8	0.0
Ngororero	7.7	7.7	0.0	5.4	5.4	0.0	8.5	8.5	0.0
Rusizi	11.9	10.5	80.0	7.8	7.8	53.3	15.1	11.1	87.5
Nyamasheke	11.1	9.9	85.7	8.4	8.4	87.5	10.8	9.6	98.9
Rulindo	23.2	22.4	100.0	18.6	18.6	89.5	22.7	22.5	89.1
Gakenke	20.9	20.9	0.0	17.9	17.9	0.0	21.0	21.0	0.0
Musanze	47.4	47.4	0.0	40.1	40.1	0.0	49.2	49.2	0.0
Burera	34.1	34.1	0.0	27.1	27.1	0.0	34.1	34.1	0.0
Gicumbi	21.6	21.7	0.0	18.1	18.1	25.0	20.0	20.0	40.8
Rwamagana	24.8	23.3	51.6	16.5	16.5	23.8	23.7	22.5	71.6
Nyagatare	11.1	6.3	73.8	3.6	3.5	57.5	8.7	4.7	91.5
Gatsibo	18.7	16.8	73.9	12.2	12.2	46.9	20.9	17.5	98.0
Kayonza	15.9	12.4	71.4	11.5	11.5	36.2	15.9	12.6	88.5
Kirehe	13.4	12.3	80.0	11.1	11.1	87.5	17.0	13.8	96.1
Ngoma	10.9	9.6	55.6	6.0	6.0	35.2	11.9	10.2	88.8
Bugesera	11.9	9.4	51.4	8.4	8.3	45.5	10.7	8.1	79.6
National	19.8	18.6	72.3	15.4	15.4	45.6	19.2	17.3	91.7

Source : NISR, SAS 2022

Table 27: 2022 Season A_Percentage of plots by type of pesticides per district

District	Type of pesticides								Total
	Dithane	Ridomil	Dimethoate	Cypermetrin	Dursiban	Rocket	Beam	Other	
Nyarugenge	20.61	-	27.01	2.62	-	36.76	-	13.00	100
Gasabo	13.46	0.01	2.57	1.14	-	78.22	-	4.61	100
Kicukiro	12.29	-	4.15	3.86	-	65.48	0.01	14.22	100
Nyanza	13.86	2.95	0.14	3.23	-	73.03	-	6.79	100
Gisagara	4.16	-	0.80	7.59	-	85.73	0.01	1.71	100
Nyaruguru	17.36	-	-	18.18	-	53.31	-	11.15	100
Huye	6.62	3.50	-	3.08	-	84.47	0.02	2.31	100
Nyamagabe	44.76	0.42	-	31.76	-	19.10	-	3.96	100
Ruhango	11.80	-	3.39	3.77	-	77.29	0.01	3.74	100
Muhanga	26.33	-	1.97	24.40	-	47.29	-	-	100
Kamonyi	17.75	0.31	10.35	-	-	70.21	-	1.37	100
Karongi	16.29	-	12.21	16.47	0.85	54.18	-	-	100
Rutsiro	54.48	33.83	0.31	8.05	-	2.33	-	1.00	100
Rubavu	34.16	18.85	19.19	23.01	0.05	1.84	-	2.90	100
Nyabihu	35.52	15.31	21.49	15.35	-	4.98	-	7.36	100
Ngororero	44.44	2.75	0.60	12.56	-	34.10	-	5.55	100
Rusizi	23.11	0.93	8.55	31.78	-	25.99	-	9.63	100
Nyamasheke	15.16	0.26	22.73	35.58	-	13.75	-	12.51	100
Rulindo	22.05	3.67	6.45	6.59	-	54.95	0.17	6.13	100
Gakenke	12.48	7.55	1.47	30.02	-	41.87	-	6.62	100
Musanze	36.62	3.78	14.72	13.07	-	29.95	-	1.88	100
Burera	27.67	7.38	3.32	35.12	-	23.58	-	2.92	100
Gicumbi	41.11	4.08	0.27	2.31	-	43.24	-	8.99	100
Rwamagana	19.88	2.12	9.23	4.94	-	53.07	0.01	10.74	100
Nyagatare	17.26	2.78	10.30	14.04	-	50.70	0.04	4.89	100
Gatsibo	29.76	0.38	2.15	5.48	-	51.27	-	10.97	100
Kayonza	37.42	0.04	7.02	6.65	-	40.26	0.01	8.60	100
Kirehe	10.53	0.21	10.96	3.21	-	65.33	0.01	9.74	100
Ngoma	17.95	-	11.84	16.27	-	41.21	0.07	12.67	100
Bugesera	20.78	0.44	29.76	10.51	-	32.73	0.02	5.76	100
National	26.76	6.38	9.14	14.68	0.03	37.53	0.01	5.46	100

Source: NISR, SAS 2022

Table 28: 2022 Season A_Percentage of farmers who practiced agricultural practices

District	Farmers who protected land against erosion (%)			Farmers who used any mechanical equipment for agriculture activities %)			Farmers who practiced irrigation (%)			Farmers who practiced agroforestry (%)		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	76.8	76.8	-	-	-	-	11.9	11.86	-	68.2	68.2	-
Gasabo	89.7	89.6	90.9	0.9	0.3	18.2	9.4	7.23	72.7	68.8	69.0	63.6
Kicukiro	64.4	64.5	60.0	2.4	2.0	20.0	13.0	11.33	80.0	74.5	73.9	100.0
Nyanza	97.1	97.0	100.0	-	-	-	13.5	12.55	66.7	43.1	43.3	33.3
Gisagara	90.2	90.0	95.2	-	-	-	15.1	13.17	57.1	51.7	53.4	9.5
Nyaruguru	97.4	97.6	90.0	-	-	-	3.2	3	10.0	55.5	55.1	70.0
Huye	95.0	94.8	100.0	-	-	-	16.2	12.59	80.0	51.9	53.1	28.0
Nyamagabe	99.5	99.5	100.0	-	-	-	4.6	4.62	-	48.2	48.1	100.0
Ruhango	95.4	95.4	100.0	0.2	0.2	-	9.9	9.11	71.4	55.5	55.9	25.0
Muhanga	97.3	97.5	87.5	0.2	0.2	-	6.8	6.26	37.5	49.3	49.1	62.5
Kamonyi	93.3	93.1	100.0	0.2	0.2	-	13.0	11.63	75.0	45.2	45.1	50.0
Karongi	94.6	94.6	100.0	0.2	0.2	-	5.9	5.9	-	56.8	56.7	100.0
Rutsiro	97.3	97.3	-	-	-	-	0.7	0.74	-	57.2	57.2	-
Rubavu	93.8	94.0	75.0	0.5	0.5	-	-	0	-	50.2	50.0	75.0
Nyabihu	98.4	98.4		-	-	-	1.3	1.34	-	73.6	73.6	-
Ngororero	97.3	97.3	-	0.6	0.6	-	1.0	0.97	-	46.7	46.7	-
Rusizi	93.1	93.0	100.0	0.2	0.2	-	7.7	6.41	40.0	60.2	60.6	40.0
Nyamasheke	97.9	98.1	85.7	0.2	0.2	-	3.9	2.59	33.3	63.9	64.4	33.3
Rulindo	93.5	93.4	100.0	0.5	0.5	-	15.1	14.61	60.0	58.2	58.2	60.0
Gakenke	98.3	98.3	-	0.3	0.3	-	3.0	2.98	-	61.1	61.1	-
Musanze	91.4	91.4	-	-	-	-	0.4	0.4	-	60.5	60.5	-
Burera	92.4	92.4	-	0.2	0.2	-	0.4	0.4	-	37.1	37.1	-
Gicumbi	95.0	95.0	100.0	0.3	0.3	-	3.2	3.17	-	42.0	41.8	100.0
Rwamagana	96.6	96.4	100.0	0.9	-	16.1	14.1	12.37	45.2	76.8	76.7	77.4
Nyagatare	83.7	82.6	97.6	5.4	0.5	69.1	7.4	3.08	64.3	54.6	55.4	42.9
Gatsibo	96.0	95.9	100.0	1.5	0.5	30.4	6.7	6.16	21.7	68.0	67.6	82.6
Kayonza	74.8	73.2	100.0	3.0	-	50.0	18.7	14.45	85.7	54.4	54.6	51.7
Kirehe	84.3	84.2	90.0	0.3	0.2	10.0	11.0	9.74	90.0	65.3	65.8	30.0
Ngoma	90.0	89.7	100.0	0.2	-	5.6	10.5	8.71	72.2	71.8	72.4	50.0
Bugesera	80.3	80.1	83.8	0.7	0.2	8.1	17.5	15.17	54.1	63.3	63.4	61.0
National	92.1	92.0	95.1	0.7	0.2	19.2	8.2	7.02	59.8	57.4	57.5	52.1

Source : NISR, SAS 2022

Table 29: 2022 Season A_Percentage of plots by types of irrigation used

District	Modern irrigation					Traditional techniques
	Surface irrigation	Flood irrigation	Drip irrigation	Sprinkler irrigation	Pivot irrigation	
Nyarugenge	-	-	-	-	-	100.00
Gasabo	24.00	4.00	-	-	-	72.00
Kicukiro	20.00	-	-	-	-	80.00
Nyanza	47.62	23.81	-	-	-	28.57
Gisagara	-	65.38	-	-	-	34.62
Nyaruguru	66.67	-	-	-	-	33.33
Huye	12.12	57.58	-	-	-	30.30
Nyamagabe	-	54.55	-	-	-	45.45
Ruhango	32.14	17.86	-	-	-	50.00
Muhanga	60.00	13.33	-	-	-	26.67
Kamonyi	10.71	7.14	-	-	-	82.14
Karongi	25.00	-	-	-	-	75.00
Rutsiro	100.00	-	-	-	-	-
Rubavu						
Nyabihu	50.00	-	-	-	-	50.00
Ngororero	100.00	-	-	-	-	-
Rusizi	-	63.64	-	-	-	36.36
Nyamasheke	14.29	85.71	-	-	-	-
Rulindo	44.44	3.70	-	3.70	-	48.15
Gakenke	-	-	-	-	-	100.00
Musanze	-	-	-	-	-	
Burera	-	-	-	-	-	100.00
Gicumbi	-	-	-	-	-	100.00
Rwamagana	11.32	15.09	28.30	5.66	-	39.62
Nyagatare	53.45	12.07	1.72	5.17	17.24	10.34
Gatsibo	13.33	26.67	6.67	6.67	-	46.67
Kayonza	52.48	8.91	0.99	5.94	9.90	21.78
Kirehe	5.00	12.50	-	5.00	37.50	40.00
Ngoma	18.18	40.91	4.55	-	-	36.36
Bugesera	16.13	19.35	3.23	30.11	3.23	27.96
National	26.21	19.18	3.22	6.44	5.56	39.39

Source: NISR, SAS 2022

Table 30: 2022 Season A_Percentage of plots by source of water used and district

District	Source of water				
	Rainwater	Water treatment	Underground	Lake / streams	Water catchment
Nyarugenge	-	36.36	36.36	27.27	-
Gasabo	-	20.00	24.00	56.00	-
Kicukiro	3.85	15.38	19.23	50.00	11.54
Nyanza	-	-	24.00	60.00	16.00
Gisagara	-	6.45	32.26	54.84	6.45
Nyaruguru	-	-	-	100.00	-
Huye	-	2.78	19.44	69.44	8.33
Nyamagabe	-	-	-	100.00	-
Ruhango	-	10.34	48.28	41.38	-
Muhanga	-	-	40.00	46.67	13.33
Kamonyi	3.33	3.33	40.00	46.67	6.67
Karongi	-	-	100.00	-	-
Rutsiro	-	-	100.00	-	-
Rubavu	-	-	-	-	-
Nyabihu	-	50.00	50.00	-	-
Ngororero	-	-	100.00	-	-
Rusizi	9.09	18.18	-	45.45	27.27
Nyamasheke	-	14.29	-	85.71	-
Rulindo	3.57	-	28.57	46.43	21.43
Gakenke	-	30.00	30.00	40.00	-
Musanze	-	50.00	-	50.00	-
Burera	-	-	100.00	-	-
Gicumbi	14.29	14.29	42.86	28.57	-
Rwamagana	3.45	25.86	6.90	50.00	13.79
Nyagatare	11.90	4.76	9.52	34.52	39.29
Gatsibo	-	20.00	40.00	13.33	26.67
Kayonza	1.82	9.09	17.27	33.64	38.18
Kirehe	-	-	39.02	58.54	2.44
Ngoma	-	-	68.18	31.82	-
Bugesera	-	2.13	26.60	63.83	7.45
National	2.56	8.36	25.47	47.44	16.17

Source: NISR, SAS 2022

Table 31: 2022 Season A_Percentage of plots by type of anti-erosion activities and district

District	Ditches	Trees/Windbreak/ shelterbelt	Bench terraces	Progressive terraces	Cover plants	Water drainage	Mulching	Beds/ridges	Water channels	Others
Nyarugenge	27.52	6.93	-	3.45	50.71	-	5.93	4.03	1.32	0.11
Gasabo	6.13	14.40	0.18	20.76	50.39	-	0.27	0.15	7.72	-
Kicukiro	22.97	24.26	0.21	0.79	19.76	2.43	4.62	5.49	19.47	-
Nyanza	8.17	5.67	2.08	11.53	51.32	0.01	0.01	5.78	15.44	-
Gisagara	13.74	2.27	2.09	6.47	50.96	0.44	1.25	2.22	20.56	-
Nyaruguru	9.03	11.71	1.92	14.01	48.53	2.41	0.76	0.21	11.42	-
Huye	8.56	9.80	1.61	20.38	43.24	0.23	2.13	1.72	12.34	-
Nyamagabe	9.31	7.27	7.81	14.30	51.90	0.27	0.89	0.77	7.48	-
Ruhango	10.63	5.70	0.86	3.85	63.91	0.01	1.05	0.52	13.47	-
Muhanga	2.43	4.92	4.12	7.41	67.29	0.01	2.54	3.48	7.19	0.61
Kamonyi	4.52	2.78	0.25	11.10	60.44	0.21	3.46	1.13	15.93	0.19
Karongi	22.12	6.22	4.99	1.76	56.52	2.26	0.40	0.24	5.44	0.06
Rutsiro	4.37	7.92	5.57	1.28	67.42	-	4.50	0.42	8.52	-
Rubavu	2.09	10.34	6.70	1.56	36.52	-	0.78	41.59	0.42	-
Nyabihu	2.92	1.81	7.77	10.29	56.45	-	0.07	14.70	5.47	0.53
Ngororero	1.86	-	7.17	0.51	85.87	-	0.57	2.62	1.41	-
Rusizi	2.63	21.40	0.63	12.82	54.59	0.11	3.44	1.35	3.03	-
Nyamasheke	6.97	21.07	4.94	1.94	55.28	0.19	4.63	0.58	4.40	-
Rulindo	4.32	12.98	6.65	9.39	55.03	0.70	1.36	3.20	6.36	-
Gakenke	2.10	5.35	4.30	4.41	69.60	0.67	4.32	1.64	7.61	-
Musanze	1.02	2.41	4.19	7.32	45.51	0.17	0.26	36.33	2.81	-
Burera	0.59	16.09	2.37	1.66	55.95	0.16	0.10	19.88	3.20	-
Gicumbi	0.78	6.40	12.64	10.81	62.00	2.58	0.10	1.08	3.51	0.10
Rwamagana	1.88	21.62	2.97	9.68	52.29	0.58	4.97	0.05	5.93	0.01
Nyagatare	7.56	17.20	1.58	6.05	51.71	0.12	3.89	3.17	8.63	0.09
Gatsibo	1.54	10.96	1.33	10.65	63.92	0.41	2.66	2.47	6.06	-
Kayonza	6.16	4.95	13.63	4.77	37.88	0.03	9.84	3.95	18.79	-
Kirehe	7.99	3.15	1.00	4.61	68.44	2.18	10.00	0.47	2.18	-
Ngoma	1.86	1.85	4.45	2.83	62.57	0.04	11.32	9.27	5.80	-
Bugesera	8.88	20.28	0.07	6.32	43.20	0.06	8.62	3.60	8.96	-
National	6.28	8.60	4.48	8.11	57.06	0.63	2.27	4.72	7.79	0.06

Source: NISR, SAS 2022

Table 32: 2022 Season A_Percentage of plots by degree of erosion per district

District	Degree of erosion			
	Severe (Rill erosion, Gully erosion, Mass movement/Landslides)	Moderate (Diffuse overland flow erosion, overland flow erosion)	Low (wind erosion)	Very Low (splash erosion)
Nyarugenge	1.79	12.9	28.1	57.21
Gasabo	1.25	12.44	29.32	57
Kicukiro	0	1.86	34.96	63.17
Nyanza	3.94	36	33.72	26.34
Gisagara	0.02	2.97	49.18	47.83
Nyaruguru	0.84	7.14	62.28	29.74
Huye	0.23	5.65	46.26	47.86
Nyamagabe	2	10.54	42.24	45.22
Ruhango	3.27	11.84	27.73	57.16
Muhanga	3.63	11.38	40.62	44.37
Kamonyi	3.84	28.65	30.12	37.4
Karongi	0.42	24.49	20.79	54.3
Rutsiro	1.26	22.3	58.61	17.83
Rubavu	4.91	22.97	15.41	56.7
Nyabihu	4.81	27.75	54.61	12.84
Ngororero	9.04	16.27	46.51	28.18
Rusizi	5.28	9.6	18.25	66.86
Nyamasheke	0.75	19.09	14.68	65.49
Rulindo	14.62	38.01	29.83	17.54
Gakenke	2	37.21	54.48	6.31
Musanze	0	4.84	19.54	75.63
Burera	2.53	9.28	5.71	82.49
Gicumbi	1.65	17.96	31.4	48.99
Rwamagana	0	0.64	31.4	67.96
Nyagatare	0	5.52	30.15	64.32
Gatsibo	0.31	14.15	32.88	52.66
Kayonza	0	10.25	30.12	59.63
Kirehe	0.67	16.22	17.3	65.81
Ngoma	0.12	4.76	32.76	62.35
Bugesera	0.55	8.34	46.2	44.91
National	2.55	16.36	34.96	46.14

Source: NISR, SAS 2022

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