



The Republic of Rwanda



SEASONAL AGRICULTURAL SURVEY

SEASON A 2021 REPORT

April 2021

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I. INTRODUCTION

To evaluate the performance of National agricultural programs, agriculture statistics are needed. Therefore, the National Institute of Statistics of Rwanda (NISR) in collaboration with the Ministry of Agriculture and Animal Resource (MINAGRI) conduct the Seasonal Agricultural Survey (SAS) to gather various information mainly related to potential agricultural land use, crop area, yield, production, agricultural inputs, agricultural practices and other agricultural items. Survey data are supplemented by administrative records on tea and coffee from National Agriculture Export Board (NAEB) collected through routine activities of monitoring coffee and tea production, as well as coffee and tea censuses. Other agriculture related information is obtained from MINAGRI working closely with Rwanda Agriculture Board (RAB), District agronomists and other partners working in Agriculture sector.

NISR conducts the Seasonal Agricultural Survey (SAS) following three main agricultural seasons. Season A (which starts from September to February of the following year) and Season B (which starts from March to June) and Season C which is shorter agricultural season mainly for vegetables and sweet potato grown in swamps and Irish potato grown in volcanic agro-ecological zone.

1.1. Objectives of SAS survey

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 to monitor current agricultural and food supply conditions and to facilitate evidence-based decision making for the development of the agricultural sector.

This report presents 2021 Seasonal Agricultural Survey (SAS), Season A findings 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 (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...).

II. SURVEY DESIGN

2.1 Sample frame design

In order 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 in order 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

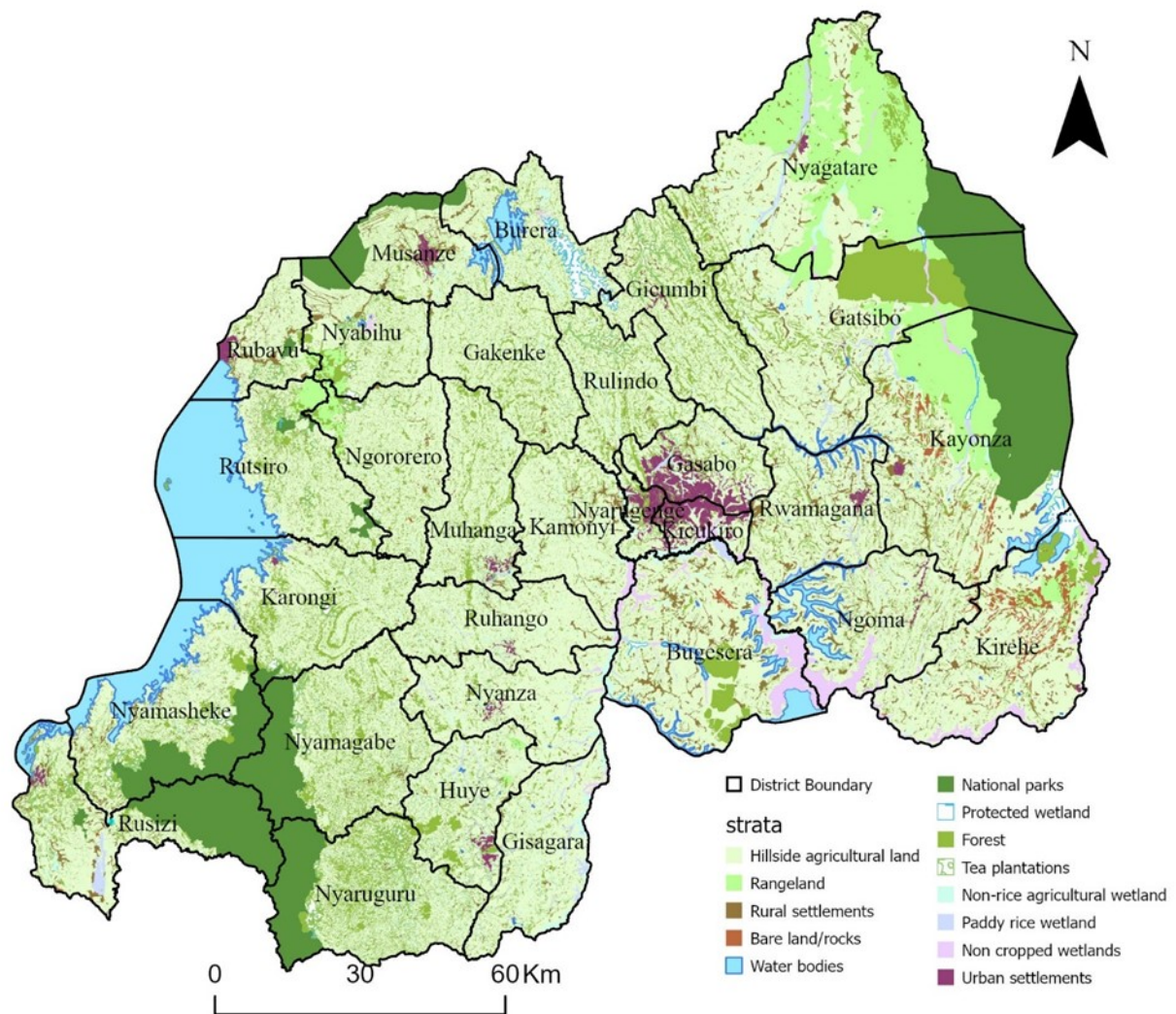
Land classification was done using Rwanda land cover map which is a combination of different layers available in the country, plus a photo interpretation of a series (2010 to 2020) of high-resolution satellite images from Worldview. The Rwanda land cover map has been divided into 13 land cover classes (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, 2021

Map 1: Rwanda land classification map done in 2020



Source: NISR, SAS 2021

Among 13 land cover classes, some of them are related to agricultural activities. The next step of building the area sample frame was to group land cover classes into strata in order to identify agricultural strata to be considered in sample frame.

2.1.2 Stratification

Out of 13 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 was 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 stratum	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 stratum	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 stratum	The rest of other possible combinations
9.0	Excluded stratum	All clusters with excluded land cover classes greater or equal to 50 percent of the total area of the cluster

Source: NISR, SAS, 2021

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

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

Stratum	Dominant hill crop land	Dominant wetland crops	Dominant rangeland	Mixed stratum	Excluded stratum	Total
District						
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, 2021

2.1.3 Sampling procedures

Out of 5 defined agricultural strata, only dominant hill crop land stratum, dominant wetland crops stratum, dominant rangeland stratum and mixed stratum were considered as land potential for agriculture. The remaining stratum is the non-agricultural land. Note that clusters covered by tea plantations were 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 were selected and allocated at district level based on the power allocation approach (Bankier, 1988²). Sampled segments inside each district were distributed among strata with a proportional-to-area criterion.

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

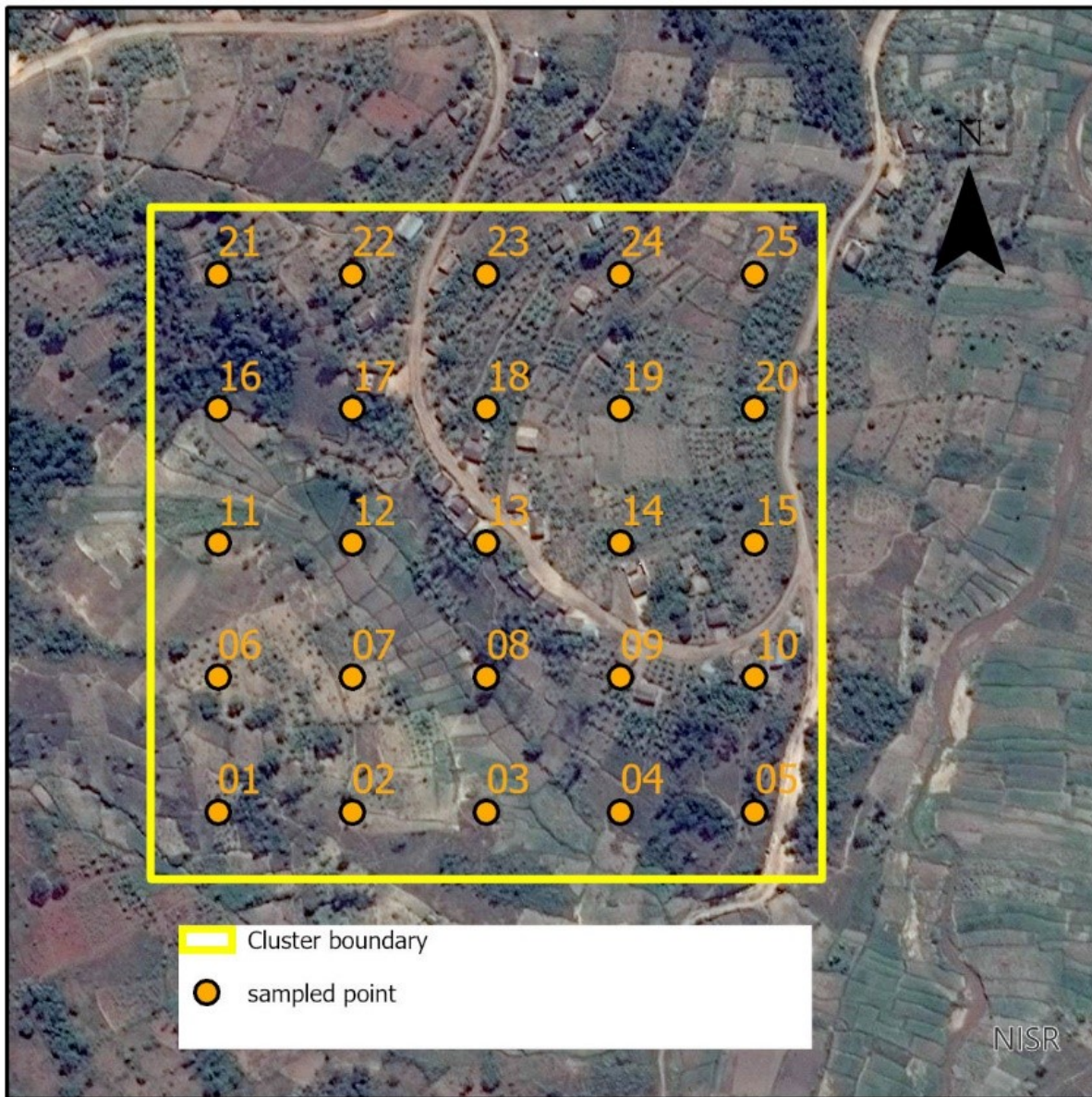
District	Dominant hill crop land	Dominant wetland crops	Dominant rangeland	Mixed stratum	Total
Nyarugenge	12	6	-	2	20
Gasabo	22	4	-	3	29
Kicukiro	13	5	-	2	20
Nyanza	37	4	-	2	43
Gisagara	33	5	-	3	41
Nyaruguru	25	3	-	7	35
Huye	27	3	-	5	35
Nyamagabe	36	2	-	6	44
Ruhango	36	3	-	3	42
Muhanga	33	3	-	4	40
Kamonyi	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
Total	942	75	52	131	1200

Source: NISR, SAS, 2021

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

At the second stage, 25 sample points were 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, 2021

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:

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

2.2 Data Collection design

SAS data collection was conducted into two distinct phases: the first phase, known as screening activity, consists of visiting all sampled segments and delineating all plots in which the sampled points are fallen and thereafter recording the related information. Generally, information related to agricultural land use, crop area and expected period of harvest for grown crops are captured during screening activity. The second phase consists of collecting data in the agricultural plots identified during screening activity related to crop production, agricultural inputs and best agricultural practices involved. Additionally, the same information is also gathered from all large-scale farmers (LSF) who have grown crops in the current season. During this season, experienced 128 enumerators and 29 team leaders were involved in field data collection after a refresher training conducted by NISR headquarter staff. Throughout the data collection activities, higher level supervision staff from NISR visited the field teams during each phase of data collection to ensure data quality.

2.2.1 Time frame

Season A data collection started from 13th December 2020 to 15th February 2021 covering 1200 segments and 325 large scale farmers' holdings across all the country.

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. This information is 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.

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

Before proceeding to the field, enumerators and their team leaders have to check if they have required materials for their fieldwork. Field workers use Explorer software to direct them to sampled segment. Data are collected as follows:

- **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 agricultural plots are given to enumerators to collect information provided in the plot questionnaire.

2.3 Data processing and analysis

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

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

Agricultural area includes arable land, land under permanent 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. 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 has 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.

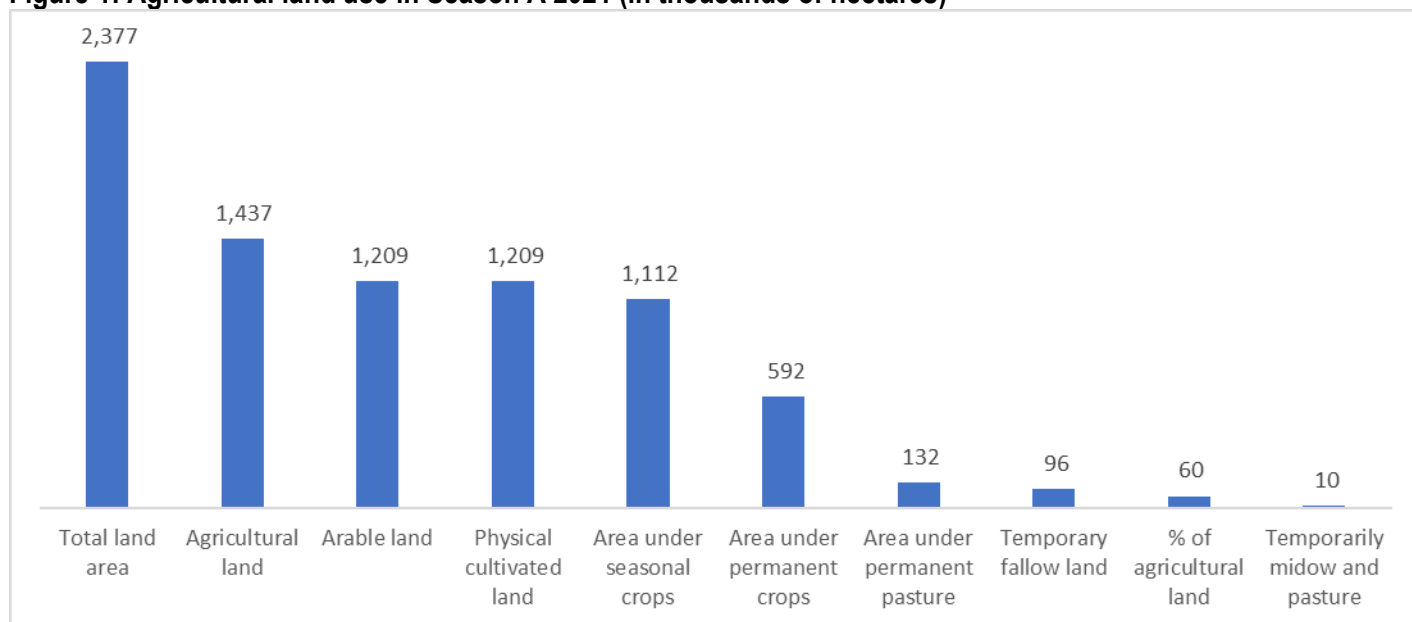
III. SURVEY FINDINGS

This section highlights key results for SAS 2021 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 1.43 million hectares (60% of total country land) is used for agriculture. Out of the total agricultural land, 1.1 million hectares was used for Seasonal crops in season A, nearly 0.6 million hectares are area under permanent crops, while 0.131 million ha under permanent pasture. (See district details in Table 6).

Figure 1: Agricultural land use in Season A 2021 (in thousands of hectares)



Source: NISR, SAS 2021

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 236,642 ha, this is 7% increase when compared to 2020 season A. The total production was estimated at 378,641 MT, an increase of 7% compared to 2020 season A. In this period the average yield was 1,6 Tons per hectare (See district details in Tables 5,8,9,10 and 11).
- **Sweet potato:** The cultivated area for sweet potato was estimated at 99,496 ha, an increase of 11% when compared to 2020 season A. Sweet potato production was estimated at 667,346 MT, an increase of 5% when compared to 2020 season A production estimates. The average yield was 6,7 Tons per hectare (See district details in Tables 5 ,8,9,10 and 11).
- **Irish potatoes:** The total cultivated area for Irish potatoes was estimated to be 52,196 ha, a slight increase of 1% when compared to 2020 season A estimates. The production was estimated at 463,562 MT, an increase of 8%

compared to 2020 season A. The average yield of Irish potato was 8,9 tons per hectare (See district details in Tables 5 ,8,9,10 and 11).

- **Cassava:** The cultivated area for cassava was estimated at 200,313 ha, an increase of 5% when compared to 2020 season A. The production was 601,291 MT, an increase of 4% when compared to 2020 season A, while the average yield of cassava was 14,2 tons per hectare (See district details in Tables 5 ,8,9,10 and 11).
- **Paddy rice:** The cultivated area for paddy rice was estimated to be 15,374 ha, an increase of 5% when compared to 2020 season A. The production was 63,950 MT, an increase of 22% from the 2020 season A, while the average yield was 4,1 tons per hectare (See district details in Tables 5 ,8,9,10 and 11).
- **Banana:** The total cultivated area for Banana was estimated at 280,779 ha, an increase of 3% when compared to 2020 season A. The production was estimated at 1,152,365 MT, an increase of 5% when compared to 2020 season A, while the average yield of banana was 10,9 tons per hectare (See district details in Tables 5 ,8,9,10 and 11).
- **Beans:** Beans cultivated area was estimated at 389,149 ha, an increase of 7% compared to 2020 season A. Bean's production was estimated at 258,851 MT, an increase of 14% change from 2020 season A estimates. The average yield of beans was 665 kilograms per hectare (See district details in Tables 5 ,8,9,10 and 11).

Table 5: Cultivated area, harvested area, production and yield by crop in Season A 2021

Crop/Crop Group Year/Season	Cultivated Crop area (Ha)		Harvested Crop area (Ha)		Production (MT)		Yield (MT/ha)	
	2020 A	2021 A	2020 A	2021 A	2020 A	2021 A	2020 A	2021 A
Cereals	276,592	292,831	276,592	292,831	454,522	492,868		
Maize	221,521	236,642	221,521	236,642	353,999	378,641	1.6	1.6
Sorghum	33,295	33,636	33,295	33,636	42,231	44,039	1.3	1.3
Paddy rice	14,507	15,374	14,507	15,374	52,225	63,950	3.6	4.2
Wheat	4,187	4,418	4,187	4,418	4,138	4,500	1	1.0
Other cereals	3,082	2,762	3,082	2,762	1,930	1,738	0.6	0.6
Tubers and Roots	349,447	369,123	196,552	209,589	1,726,437	1,826,018		
Cassava	190,447	200,313	41,160	42,284	578,545	601,291	14.1	14.2
Sweet potato	89,427	99,496	89,427	99,496	635,007	667,346	7.1	6.7
Irish potato	51,516	52,196	51,516	52,196	427,471	463,562	8.3	8.9
Taro & Yams	18,058	17,119	14,450	15,612	85,414	93,819	5.9	6.0
Banana	272,500	280,779	101,290	105,474	1,100,082	1,152,365		
Cooking banana	106,409	108,451	36,464	38,916	502,972	529,788	13.8	13.6
Dessert banana	39,688	41,394	15,248	15,345	120,868	124,546	7.9	8.1
Banana for beer	126,403	130,934	49,579	51,213	476,241	498,031	9.6	9.7
Legumes and Pulses	412,016	443,736	412,016	443,736	252,550	288,018		
Beans	362,199	389,149	362,199	389,149	226,570	258,851	0.6	0.7
Bush bean	240,157	267,206	240,157	267,206	142,983	167,862	0.6	0.6
Climbing bean	122,042	121,942	122,042	121,942	83,588	90,989	0.7	0.7
Pea	10,530	11,116	10,530	11,116	7,933	8,617	0.8	0.8
Groundnut	14,609	15,978	14,609	15,978	5,762	6,313	0.4	0.4
Soybean	24,677	27,493	24,677	27,493	12,284	14,237	0.5	0.5
Vegetables and Fruits	25,502	31,387	23,024	24,780	184,828	184,944		
Vegetables	18,246	20,181	18,246	20,181	160,114	159,669	8.8	7.9
Fruits	7,256	11,206	4,778	4,599	24,713	25,275	4.9	5.5
Fodder crops	157,920	8,548	9,988	7,875	129,651	112,030	13	14.2
Other crops	54,732	48,980	12,455	12,671	176,592	110,233	14.2	8.7
Total Developed area	1,548,710	1,475,385	1,031,918	1,096,956				

Source: NISR, SAS, 2021

3.3 Use of inputs

The 2021 Season A survey results related to use of agricultural inputs (seeds, fertilizers and pesticides) are presented in terms of percentage of farmers who applied such agricultural inputs during the season.

3.3.1 Use of seeds

During 2021 Season A, 37.1 percent of farmers used improved seeds. In regards to farmer type, 36 percent of small-scale farmers (SSF) and 88.8 percent of Large-scale farmers (LSF) used improved seeds (See Figure 2). Improved seeds came from NGO/companies (39.3 percent), agro-dealers (37.6 percent), government (8.3 percent), market (5.2 percent), cooperatives (4.3 percent), and seeds multipliers (4.3 percent). Improved seeds were used mostly for crops such as paddy rice, maize, vegetables, fruits and wheat (See details in Tables,16,17,18 and 19).

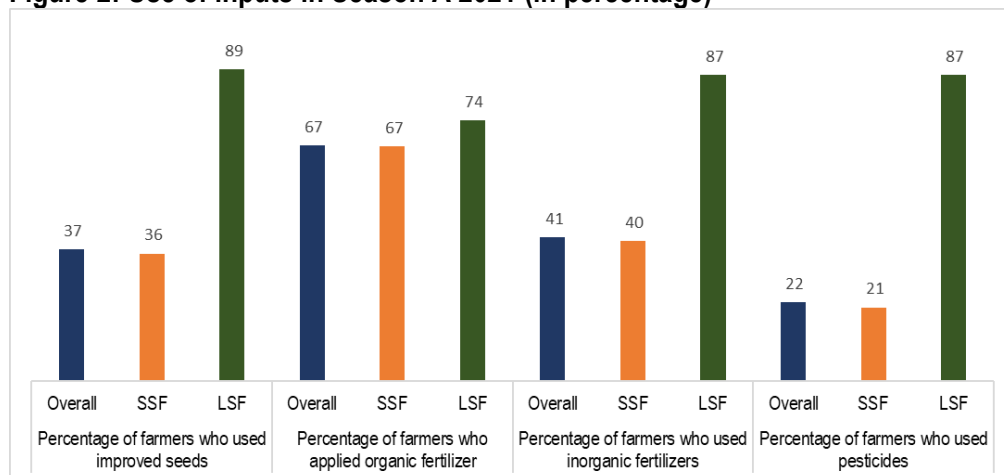
3.3.2 Use of fertilizers

Results show that in season A of 2021, 67 percent of farmers applied organic fertilizer in their farms. According to farmer type, 66.8 percent of small-scale farmers and 74.8 percent of Large-scale farmers applied organic fertilizer. (See Figure 2 and Table 20). Results also show that 40.9 percent of famers applied inorganic fertilizer. According to farmer type, 39.8 percent of small-scale farmers and 87.2 percent of Large-scale farmers applied inorganic fertilizer (See figure 2). Regarding the source of fertilizers, 46 percent of famers bought inorganic fertilizers from agro-dealers; 42.2 percent of farmers gained inorganic fertilizers from NGOs/companies. DAP, UREA and NPK are inorganic fertilizers mostly used in 2021 Season A with 44.6 percent, 39.5 percent and 12.1 percent respectively (See details in Tables 7,20,21,22, 23 and 24).

3.3.3 Use of pesticides

The survey results revealed that 22.4 percent of farmers applied pesticides. According to farmer type, 20.9 percent of small-scale farmers and 87.2 percent of Large-scale farmers applied pesticides (See figure 2 and 3). Rocket, Dithane and Cypermethrin were the most used pesticides, with 37.8 percent of farmers, 20.9 percent and 14.3 percent respectively (See details in Tables 25 and 26).

Figure 2: Use of inputs in Season A 2021 (in percentage)



Source: NISR, SAS 2021

3.4 Agricultural practices

The survey covered information related to agricultural (irrigation, anti-erosion activities mechanization and agroforestry). The results are presented in terms of percentage of farmers involved in such practices throughout the 2021 season A.

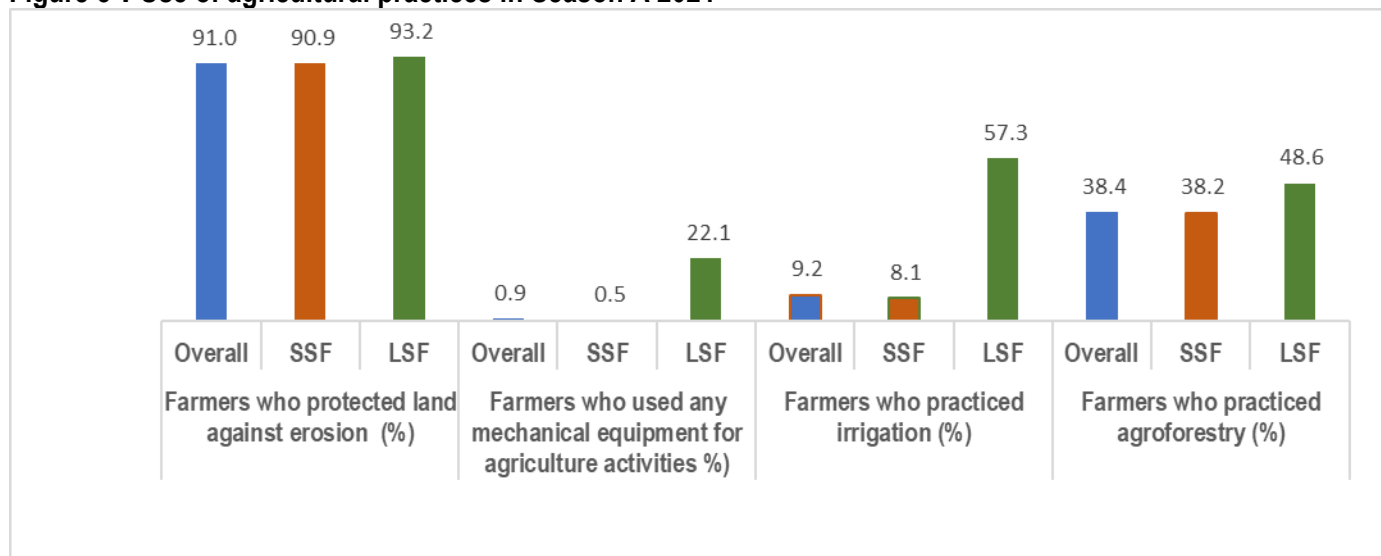
3.4.1 Irrigation practices

The survey results revealed that 9.2 percent of farmers practiced irrigation, where 8.1 percent of small-scale farmers and 57.3 percent of large-scale farmers were involved. Traditional irrigation technique was applied by 40 percent of farmers. Lakes/stream and underground water were the most used sources of water for irrigation with 53.7 percent and 25.6 percent respectively (See details in Tables 7,27,28 and 29).

3.4.2 Erosion control measures

In season A of 2021, 91 percent of farmers practiced anti-erosion activities where 90.9 percent of small-scale farmers and 93.2 percent were large-scale farmers protected their land against erosion. Cover plants was the most used type of anti-erosion with 57.2 percent of farmers. The farmland was presented to be less eroded where the major erosion type was low degree of erosion (splash erosion, wind erosion) appeared most with 55 percent (See details in Tables 7,27,30 and 31). The use of mechanical equipment was estimated at 0.9 percent of farmers utilising them, while 38.4 percent of farmers practiced agroforestry.

Figure 3 : Use of agricultural practices in Season A 2021



Source: NISR, SAS 2021

IV. MAIN TABLES

Table 6 :Season A 2021_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	6.2	47.4	5.4	5.9	5.1	3.1	0.3	0.0	0.0
Gasabo	42.7	22.3	52.3	20.7	19.9	18.8	9.0	1.9	0.7	0.5
Kicukiro	16.6	6.6	39.9	5.1	5.7	4.5	3.3	0.7	0.0	0.3
Nyanza	67.1	51.0	75.9	47.9	44.8	42.1	20.7	5.8	0.5	0.3
Gisagara	67.3	43.7	64.9	42.8	37.9	37.0	16.6	5.8	0.1	
Nyaruguru	100.7	36.0	35.7	32.4	31.7	28.1	12.0	4.2	0.3	
Huye	58.1	35.3	60.7	34.0	33.1	31.7	14.5	2.2	0.1	0.0
Nyamagabe	109.1	50.5	46.3	44.8	45.6	39.8	17.6	4.9	0.4	
Ruhango	62.6	45.7	73.0	42.1	42.3	38.7	14.5	3.3	0.7	0.1
Muhanga	64.4	41.1	63.8	36.8	37.0	32.7	19.4	4.0	0.6	
Kamonyi	65.8	43.8	66.5	39.2	41.3	36.8	17.5	2.4	0.4	0.1
Karongi	78.9	44.6	56.6	37.8	40.3	34.0	17.9	3.8	0.6	0.6
Rutsiro	66.0	41.6	63.0	31.5	30.4	26.3	18.5	5.2	0.3	6.0
Rubavu	33.8	25.1	74.2	21.9	22.5	19.9	7.2	2.0	0.0	0.6
Nyabihu	53.6	36.3	67.8	32.0	30.2	29.9	7.0	1.9	0.2	4.2
Ngororero	67.5	47.5	70.4	41.9	41.2	38.4	22.2	3.5	0.3	2.8
Rusizi	91.4	38.0	41.5	36.1	37.1	35.3	13.8	0.9	0.0	
Nyamasheke	94.8	41.7	44.0	34.9	40.3	33.4	20.9	1.5	0.1	
Rulindo	56.7	36.7	64.7	33.9	34.5	31.7	13.9	2.2	1.0	
Gakenke	70.1	48.9	69.8	44.6	46.1	41.8	19.9	2.6	0.2	0.2
Musanze	50.9	30.8	60.5	30.4	29.4	28.7	5.1	1.5	0.2	
Burera	58.4	37.9	64.8	37.4	35.5	35.0	4.7	2.4	0.2	
Gicumbi	82.5	54.3	65.8	51.8	50.7	47.9	15.3	3.6	1.0	
Rwamagana	65.3	47.0	71.9	40.7	42.1	38.8	23.2	1.8	0.4	3.0
Nyagatare	191.1	146.2	76.5	73.7	75.2	70.9	88.6	2.8	0.0	68.2
Gatsibo	153.6	77.4	50.4	61.7	66.7	59.4	40.1	2.2	0.0	8.5
Kayonza	179.2	94.4	52.7	66.0	60.6	57.3	44.6	8.6	0.1	25.1
Kirehe	114.9	78.2	68.1	67.7	69.6	64.4	34.2	3.3	0.1	5.3
Ngoma	80.5	55.6	69.1	49.9	51.0	46.7	25.3	3.1	0.5	1.5
Bugesera	120.4	72.3	60.1	64.2	60.4	56.6	21.8	7.7	1.0	4.3
National	2,377.1	1,436.6	60.4	1,209.4	1,208.8	1,111.8	592.4	96.1	10.0	131.6

Source: NISR, SAS 2021

Table 7: 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	30	2,572	2,764	784	2,908
Gasabo	362	14,375	8,472	4,376	10,005
Kicukiro	258	3,233	2,609	1,917	2,117
Nyanza	633	30,175	12,468	7,747	21,220
Gisagara	1,630	25,017	13,907	11,172	18,904
Nyaruguru	313	29,472	13,285	16,373	21,902
Huye	1,091	25,010	10,822	7,816	21,309
Nyamagabe	133	38,657	14,624	15,545	27,341
Ruhango	1,608	39,213	11,919	4,575	22,986
Muhanga	153	31,954	7,817	3,421	22,550
Kamonyi	263	33,890	14,223	5,180	20,706
Karongi		32,555	13,289	14,911	26,709
Rutsiro		29,530	11,597	11,368	19,920
Rubavu		19,760	8,360	8,514	5,350
Nyabihu		26,392	15,477	15,587	17,450
Ngororero		35,119	8,459	15,831	32,692
Rusizi	1,525	26,623	20,701	18,961	23,524
Nyamasheke	346	30,287	21,730	19,125	25,821
Rulindo	1,124	32,772	9,462	12,307	25,686
Gakenke	181	42,362	19,447	24,040	39,544
Musanze		24,336	9,705	12,260	16,849
Burera		30,012	4,726	14,129	25,622
Gicumbi	127	43,443	14,336	14,491	39,861
Rwamagana	697	33,602	21,258	16,908	24,914
Nyagatare	2,988	38,704	36,672	28,744	27,746
Gatsibo	2,313	65,307	35,086	22,662	40,295
Kayonza	2,795	28,342	21,903	17,925	26,089
Kirehe	2,946	37,655	33,104	28,224	38,460
Ngoma	806	33,310	24,368	18,548	29,934
Bugesera	2,149	37,374	33,170	14,602	22,342
National	24,474	921,052	475,757	408,044	700,757

Source: NISR, SAS 2021

Table 8: Season A 2021_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	874	-	-	-	-	1,068	371	82	55	2,080	713	418	949	2,448	2,442	6	-	47	277	246	39	29	406	8,022
Gasabo	3,120	-	232	-	9	4,221	1,192	626	148	5,003	2,113	998	1,892	9,250	8,847	402	143	441	363	764	176	565	518	26,771
Kicukiro	966	-	27	-	-	381	423	15	50	1,068	463	185	421	2,320	2,291	29	-	69	77	210	24	31	839	6,501
Nyanza	5,242	278	357	-	-	13,078	2,483	311	943	10,125	3,178	2,025	4,922	21,173	18,679	2,494	103	893	1,647	607	243	410	1,748	59,640
Gisagara	6,320	538	2,045	-	166	7,574	2,441	347	375	9,683	2,750	2,112	4,821	17,434	16,126	1,307	114	482	2,016	461	1,058	56	656	51,764
Nyaruguru	5,796	-	-	33	7	5,336	4,845	1,379	726	5,493	1,682	1,281	2,529	9,294	2,074	7,220	370	36	697	620	225	342	1,866	37,063
Huye	4,507	-	972	-	363	9,412	3,137	941	227	7,867	2,362	1,905	3,600	14,668	11,600	3,068	144	237	1,906	469	171	106	1,470	46,598
Nyamagabe	5,604	-	267	128	-	7,231	8,111	2,622	397	7,347	1,708	909	4,730	11,919	4,177	7,743	1,410	19	1,572	680	215	267	996	48,785
Ruhango	3,454	11	852	-	30	18,194	1,951	458	578	9,161	1,705	1,908	5,548	13,874	10,577	3,296	121	1,115	2,958	470	215	613	1,818	55,874
Muhanga	1,796	28	145	3	23	9,577	4,333	356	3,146	16,746	3,275	2,209	11,262	7,047	3,695	3,352	55	20	1,943	408	178	495	1,046	47,345
Kamonyi	4,067	-	184	-	-	12,303	2,381	673	361	12,510	2,119	1,862	8,529	13,843	11,963	1,880	83	958	2,657	787	930	416	2,459	54,611
Karongi	8,208	-	-	65	-	8,703	5,102	1,070	1,303	11,692	2,414	1,607	7,671	6,812	2,539	4,273	812	-	1,136	966	199	430	1,338	47,835
Rutsiro	6,698	-	-	318	-	2,395	3,889	3,141	1,305	7,078	1,837	1,361	3,880	4,335	570	3,765	605	-	840	452	653	286	3,395	35,390
Rubavu	2,128	135	-	-	-	736	708	5,468	107	3,324	1,098	339	1,887	7,788	817	6,972	78	42	260	1,985	78	1	2,149	24,987
Nyabihu	3,458	1,248	-	1,242	-	859	3,008	9,059	102	1,425	469	232	724	7,538	219	7,320	822	-	-	806	380	154	2,575	32,678
Ngororero	5,231	452	-	513	-	4,672	5,389	1,728	1,807	12,867	2,364	2,095	8,408	12,213	2,032	10,181	483	-	1,407	243	390	202	1,643	49,239
Rusizi	7,133	30	1,499	-	-	14,995	2,242	200	1,433	5,948	2,172	566	3,210	12,847	10,410	2,437	149	442	1,422	931	437	50	3,114	52,870
Nyamashoke	5,433	99	337	30	85	11,954	3,833	122	1,256	7,592	2,433	1,083	4,076	8,245	2,694	5,550	148	260	1,465	419	211	60	4,535	46,084
Rulindo	4,164	-	17	51	6	4,566	4,329	1,153	79	7,224	2,326	1,319	3,579	12,543	5,636	6,907	432	56	352	1,243	532	871	1,806	39,423
Gakenke	11,195	47	104	139	501	6,857	8,206	1,157	1,332	14,277	2,658	2,013	9,606	8,541	1,978	6,563	554	94	738	489	416	183	2,099	56,927
Musanze	7,337	1,949	-	982	25	219	2,287	3,968	153	2,222	903	436	883	6,547	349	6,197	173	-	23	823	312	159	2,633	29,813
Burera	9,888	1,310	-	725	34	183	2,702	5,523	44	2,976	1,470	94	1,412	11,184	569	10,615	1,755	-	-	300	146	174	-	36,945
Gicumbi	4,579	134	-	188	-	3,430	7,032	2,886	77	6,330	2,480	1,654	2,196	20,474	7,018	13,456	1,562	294	162	715	734	848	368	49,812
Rwamagana	10,210	-	363	-	41	4,767	2,254	1,033	194	13,899	8,497	2,038	3,364	19,237	18,840	397	129	1,634	294	979	490	357	1,299	57,180
Nyagatare	26,575	15,223	1,537	-	165	3,930	1,851	523	15	11,274	6,699	1,254	3,320	19,935	18,003	1,931	265	1,546	635	744	130	16	332	84,697
Gatsibo	17,825	3,589	1,473	-	193	6,426	2,837	2,270	82	23,321	13,357	2,866	7,099	23,029	21,468	1,560	91	2,435	960	1,010	311	4	3,119	88,973
Kayonza	14,714	2,277	1,407	1	684	14,295	2,135	1,917	209	13,125	8,495	1,555	3,074	19,718	19,406	312	181	1,248	156	805	714	122	999	74,706
Kirehe	24,651	2,272	1,071	-	69	7,475	1,762	1,355	274	19,040	10,680	1,600	6,761	23,865	22,208	1,657	242	527	507	733	67	73	1,034	85,019
Ngoma	14,913	176	829	-	260	7,818	3,252	1,508	173	19,082	11,589	1,884	5,608	19,853	18,911	943	71	649	406	260	1,160	399	1,089	71,901
Bugesera	10,559	3,841	1,656	-	102	7,661	5,010	306	167	10,999	4,441	1,585	4,973	21,176	21,068	109	20	2,437	614	554	371	831	1,631	67,934
National	236,642	33,636	15,374	4,418	2,762	200,313	99,496	52,196	17,119	280,779	108,451	41,394	130,934	389,149	267,206	121,942	11,116	15,978	27,493	20,181	11,206	8,548	48,980	1,475,385
SSF	229,757	33,611	1,347	4,399	2,762	200,263	99,481	52,081	17,117	280,616	108,321	41,378	130,917	388,106	266,182	121,925	11,096	15,973	27,087	20,051	10,853	7,982	48,273	1,450,856
LSF	6,885	25	14,026	19	-	50	15	115	1	163	131	16	16	1,042	1,024	18	21	5	406	130	353	566	706	24,529

Source: NISR, SAS, 2021

Table 9: Season A 2021_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	Developed land
Nyarugenge	874	-	-	-	-	187	371	82	55	1,003	254	197	552	2,448	2,442	6	-	47	277	246	6	29	14	5,641
Gasabo	3,120	-	232	-	9	898	1,192	626	148	1,827	778	288	761	9,250	8,847	402	143	441	363	764	2	565	47	19,626
Kicukiro	966	-	27	-	-	44	423	15	50	475	179	84	212	2,320	2,291	29	-	69	77	210	16	31	98	4,821
Nyanza	5,242	278	357	-	-	3,694	2,483	311	282	3,551	1,033	700	1,818	21,173	18,679	2,494	103	893	1,647	607	109	410	41	41,179
Gisagara	6,320	538	2,045	-	166	1,103	2,441	347	375	3,795	974	809	2,011	17,434	16,126	1,307	114	482	2,016	461	49	56	54	37,793
Nyaruguru	5,796	-	-	33	7	1,015	4,845	1,379	726	1,846	572	331	944	9,294	2,074	7,220	370	36	697	620	118	342	298	27,422
Huye	4,507	-	972	-	363	2,488	3,137	941	205	2,800	963	619	1,217	14,668	11,600	3,068	144	237	1,906	469	39	106	4	32,985
Nyamagabe	5,604	-	267	128	-	1,563	8,111	2,622	397	2,474	555	326	1,592	11,919	4,177	7,743	1,410	19	1,572	680	149	267	0	37,181
Ruhango	3,454	11	852	-	30	4,464	1,951	458	578	2,567	377	397	1,793	13,874	10,577	3,296	121	1,115	2,958	470	116	613	95	33,728
Muhanga	1,796	28	145	3	23	1,371	4,333	356	3,146	6,327	1,130	705	4,492	7,047	3,695	3,352	55	20	1,943	408	116	461	244	27,822
Kamonyi	4,067	-	184	-	-	1,687	2,381	673	328	4,536	780	604	3,153	13,843	11,963	1,880	83	958	2,657	787	809	361	119	33,470
Karongi	8,208	-	-	65	-	1,744	5,102	1,070	1,303	3,928	758	593	2,577	6,812	2,539	4,273	812	-	1,136	966	130	371	550	32,196
Rutsiro	6,698	-	-	318	-	179	3,889	3,141	1,305	2,953	691	380	1,881	4,335	570	3,765	605	-	840	452	497	286	1,343	26,840
Rubavu	2,128	135	-	-	-	-	708	5,468	107	1,532	542	160	830	7,788	817	6,972	78	42	260	1,985	32	1	1,219	21,484
Nyabihu	3,458	1,248	-	1,242	-	108	3,008	9,059	102	418	90	111	217	7,538	219	7,320	822	-	-	806	56	154	2,525	30,546
Ngororero	5,231	452	-	513	-	1,045	5,389	1,728	1,077	3,825	695	735	2,394	12,213	2,032	10,181	483	-	1,407	243	267	202	503	34,577
Rusizi	7,133	30	1,499	-	-	1,470	2,242	200	1,433	2,982	1,009	232	1,741	12,847	10,410	2,437	149	442	1,422	931	84	50	804	33,717
Nyamasheke	5,433	99	337	30	85	2,713	3,833	122	1,256	2,362	653	256	1,453	8,245	2,694	5,550	148	260	1,465	419	36	60	624	27,528
Rulindo	4,164	-	17	51	6	738	4,329	1,153	79	2,294	752	414	1,128	12,543	5,636	6,907	432	56	352	1,243	334	346	567	28,701
Gakenke	11,195	47	104	139	501	1,004	8,206	1,157	1,332	6,369	1,172	746	4,451	8,541	1,978	6,563	554	94	738	489	206	183	675	41,533
Musanze	7,337	1,949	-	982	25	28	2,287	3,968	153	754	343	95	316	6,547	349	6,197	173	-	23	823	96	159	2,240	27,544
Burera	9,888	1,310	-	725	34	38	2,702	5,523	44	699	321	35	344	11,184	569	10,615	1,755	-	-	300	49	174	0	34,426
Gicumbi	4,579	134	-	188	-	617	7,032	2,886	64	1,738	758	401	579	20,474	7,018	13,456	1,562	294	162	715	261	848	27	41,582
Rwamagana	10,210	-	363	-	41	1,114	2,254	1,033	159	6,041	3,590	960	1,491	19,237	18,840	397	129	1,634	294	979	174	357	112	44,131
Nyagatare	26,575	15,223	1,537	-	165	1,235	1,851	523	15	5,138	2,852	632	1,654	19,935	18,003	1,931	265	1,546	635	744	97	16	199	75,700
Gatsibo	17,825	3,589	1,473	-	193	1,644	2,837	2,270	72	9,838	4,921	1,408	3,509	23,029	21,468	1,560	91	2,435	960	1,010	218	4	78	67,565
Kayanza	14,714	2,277	1,407	1	684	5,198	2,135	1,917	209	4,364	2,733	576	1,055	19,718	19,406	312	181	1,248	156	805	179	122	0	55,315
Kirehe	24,651	2,272	1,071	-	69	1,430	1,762	1,355	274	7,330	3,912	688	2,730	23,865	22,208	1,657	242	527	507	733	37	73	68	66,268
Ngoma	14,913	176	829	-	260	2,551	3,252	1,508	173	7,548	3,948	1,074	2,527	19,853	18,911	943	71	649	406	260	187	399	2	53,040
Bugesera	10,559	3,841	1,656	-	102	914	5,010	306	167	4,160	1,581	789	1,791	21,176	21,068	109	20	2,437	614	554	129	831	119	52,594
National	236,642	33,636	15,374	4,418	2,762	42,284	99,496	52,196	15,612	105,474	38,916	15,345	51,213	389,149	267,206	121,942	11,116	15,978	27,493	20,181	4,599	7,875	12,671	1,096,956
SSF	229,757	33,611	1,347	4,399	2,762	42,278	99,481	52,081	15,611	105,389	38,846	15,336	51,207	388,106	266,182	121,925	11,096	15,973	27,087	20,051	4,389	7,309	12,303	1,073,031
LSF	6,885	25	14,026	19	-	6	15	115	1	85	70	9	6	1,042	1,024	18	21	5	406	130	210	566	368	23,926

Source : NISR, SAS 2021

Table 10: Season A 2021 Average yield by crop type and district (Kg/Ha)

District	Maize	Sorghum	Paddy rice	Wheat	Other Cereals	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Bananas	Cooking Banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Peas	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops	Other crops
Nyarugenge	1,383	-	-	-	-	9,101	5,429	4,879	6,469	10,456	10,464	9,279	10,872	690	690	720	-	460	637	10,107	18,861	21,825	28,981
Gasabo	1,158	-	3,709	-	117	11,951	6,556	4,311	4,138	11,147	12,315	9,874	10,433	571	570	597	1,106	439	329	8,005	7,195	12,546	25,784
Kicukiro	1,663	-	6,293	-	-	10,286	6,956	3,756	5,057	10,399	10,533	11,096	10,009	625	627	509	-	458	538	4,913	6,971	32,718	11,730
Nyanza	1,552	603	3,798	-	-	15,870	5,607	3,582	3,292	7,885	6,968	7,302	8,631	600	608	543	787	234	289	9,292	5,708	14,569	2,245
Gisagara	1,902	760	4,266	-	539	15,962	5,893	2,751	9,367	7,955	6,745	7,122	8,876	566	563	598	922	388	530	6,081	11,898	10,245	9,113
Nyaruguru	1,924	-	-	901	324	11,043	9,265	5,620	7,145	10,481	11,051	8,380	10,873	549	523	557	860	216	349	9,000	2,755	17,941	11,050
Huye	1,551	-	4,117	-	423	18,716	5,610	3,627	7,546	10,327	10,175	8,551	11,351	645	635	681	989	427	499	6,832	2,381	13,390	13,655
Nyamagabe	1,476	-	2,155	487	-	9,722	6,682	5,741	4,450	8,143	6,868	6,940	8,834	532	459	571	929	238	475	7,203	2,593	15,077	-
Ruhango	1,296	323	4,900	-	527	21,308	6,216	3,672	3,719	9,138	8,837	6,868	9,704	649	607	783	708	268	498	7,262	1,542	12,281	18,219
Muhanga	1,272	725	3,466	3,625	711	13,415	6,401	3,150	6,735	9,134	10,308	9,569	8,770	525	470	585	927	373	548	11,642	2,093	24,221	3,288
Kamonyi	1,381	-	4,176	-	-	14,537	4,610	3,379	4,494	9,704	10,788	7,266	9,903	581	561	707	402	332	579	7,314	7,010	18,882	22,196
Karongi	1,582	-	-	537	-	8,070	6,877	8,721	5,621	11,907	13,062	12,020	11,541	849	572	1,013	925	-	584	9,931	7,445	17,450	1,023
Rutsiro	1,602	-	-	536	-	12,453	7,365	9,511	7,417	11,147	12,979	8,238	11,061	861	466	921	842	-	645	7,539	6,797	12,405	6,434
Rubavu	1,581	769	-	-	-	-	7,056	12,764	4,620	10,228	9,543	6,110	11,470	723	433	757	656	621	1,072	8,692	4,246	24,549	23,339
Nyabihu	1,216	858	-	1,021	-	10,812	6,973	12,734	8,410	7,902	11,107	6,609	7,223	560	382	566	819	-	-	12,903	2,590	7,384	324
Ngororero	921	819	-	864	-	15,981	6,321	4,651	6,728	7,824	8,035	7,324	7,917	696	432	748	782	-	325	8,288	6,063	10,303	14,434
Rusizi	1,512	429	4,833	-	-	10,786	5,842	3,897	6,562	9,271	8,530	7,417	9,948	620	619	623	848	602	738	7,329	8,695	4,411	10,952
Nyamasheke	1,548	726	5,658	504	1,146	9,991	4,026	4,742	4,834	7,846	8,351	7,963	7,600	793	591	891	730	498	610	8,971	8,108	22,021	5,617
Rulindo	1,534	-	3,919	878	-	11,896	6,764	4,803	4,693	9,737	10,378	9,545	9,381	522	500	539	713	438	516	9,510	6,038	9,691	42,045
Gakenke	1,646	1,558	2,022	563	750	13,514	6,222	5,546	6,467	10,677	11,889	8,982	10,642	801	506	890	772	718	537	6,821	11,450	16,714	3,379
Musanze	1,639	1,549	-	1,182	294	5,815	7,386	13,222	2,920	12,016	13,596	8,297	11,416	971	423	1,001	676	-	724	6,351	4,846	6,596	2,511
Burera	2,088	1,312	-	1,468	593	11,725	9,283	10,805	6,670	10,899	13,412	5,598	9,091	721	550	730	688	-	-	6,975	735	14,420	-
Gicumbi	1,391	886	-	612	-	13,092	8,970	9,018	6,235	10,529	12,958	7,517	9,436	797	570	916	657	596	489	6,921	2,685	13,575	894
Rwamagana	1,503	-	3,005	-	495	19,537	6,323	6,071	3,468	12,622	15,490	8,120	8,617	640	636	846	688	313	367	6,022	1,996	17,237	7,319
Nyagatare	1,794	1,658	4,199	-	936	15,613	4,426	6,609	1,881	14,820	18,428	8,399	11,051	744	744	750	624	541	658	4,801	2,842	7,602	37,778
Gatsibo	1,610	974	3,159	-	453	13,230	7,455	5,111	2,598	11,648	14,750	7,783	8,849	648	656	530	587	433	545	3,682	6,088	11,474	1,497
Kayanza	1,514	1,270	4,175	500	730	12,061	6,252	3,494	5,459	13,309	15,953	8,467	9,103	745	746	678	467	386	400	9,130	2,643	20,937	127
Kirehe	1,519	851	4,860	-	658	15,037	5,934	4,785	2,661	13,657	16,982	7,856	10,355	680	670	824	756	366	545	6,887	16,609	16,080	234
Ngoma	1,719	1,072	3,676	-	314	11,935	6,142	5,258	4,528	12,593	15,233	7,154	10,780	605	593	841	817	419	430	9,675	3,396	11,342	5,714
Bugesera	1,613	817	4,266	-	688	17,030	6,725	2,418	1,406	10,670	14,189	7,716	8,865	696	697	573	720	368	351	9,387	3,121	10,619	641
National	1,600	1,309	4,160	1,018	629	14,220	6,707	8,881	6,009	10,926	13,614	8,116	9,725	665	628	746	775	395	518	7,912	5,495	14,226	8,700
SSF	1,529	1,309	3,191	1,015	629	14,220	6,708	8,877	6,009	10,925	13,616	8,116	9,725	664	627	746	775	395	515	7,910	5,585	14,437	8,889
LSF	3,975	2,253	4,253	1,740	-	17,543	3,232	10,853	4,318	11,703	12,132	9,103	10,552	1,002	1,001	1,094	604	528	711	8,264	3,617	11,503	2,392

Source: NISR, SAS 2021

Table 11: Season A 2021 Average yield of large-scale farmers by crop type and district (Kg/Ha)

District/Crop	Maize	Sorghum	Paddy rice	Wheat	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Bananas	Cooking Banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Peas	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops	Other crops		
Nyarugenge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gasabo	3,843	-	3,709	-	-	6,825	-	-	8,851	8,851	-	-	755	755	-	-	342	1,201	2,888	7,195	8,179	2,991	-	
Kicukiro	1,106	-	6,293	-	-	-	-	-	10,255	10,554	9,600	-	153	153	-	-	-	1,883	3,735	-	10,805	-	-	
Nyanza	2,746	-	4,370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gisagara	3,215	-	4,335	-	-	1,921	-	-	8,265	11,091	5,228	8,246	446	446	-	-	-	1,007	2,089	-	-	-	10,918	
Nyaruguru	4,493	-	-	-	-	-	9,796	-	9,906	5,963	7,650	13,459	1,299	1,299	-	-	-	-	-	2,872	14,493	668	-	
Huye	4,150	-	4,117	-	-	5,098	-	-	8,389	8,389	-	-	335	335	-	-	-	-	23,775	-	-	-	13,655	
Nyamagabe	1,083	-	-	-	-	-	9,978	-	-	-	-	-	1,546	-	1,546	-	-	-	-	-	-	-	-	
Ruhango	1,034	-	5,115	-	20,849	-	-	10,600	8,944	8,944	-	-	217	217	265	-	209	147	9,474	-	29,915	-	-	
Muhanga	1,933	-	3,466	3,625	-	-	9,673	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Kamonyi	3,030	-	4,176	-	-	-	-	-	-	-	-	-	308	308	-	-	-	889	-	-	-	-	257	
Karongi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,028	
Rutsiro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rubavu	1,616	-	-	-	-	-	22,259	2,629	11,185	11,185	-	-	827	124	1,907	1,105	-	-	1,234	-	24,549	172	-	
Nyabihu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ngororero	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rusizi	2,337	-	4,950	-	-	2,554	-	6,116	11,986	9,144	-	12,775	788	788	-	-	-	1,906	-	-	-	-	139	
Nyamasheke	229	-	5,658	-	-	-	-	-	-	-	-	-	746	713	801	-	586	-	-	-	-	-	921	
Rulindo	4,223	-	3,919	1,636	-	-	8,704	-	10,631	-	-	10,631	806	408	2,174	-	-	707	13,812	-	-	-	804	
Gakenke	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Musanze	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Burera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Gicumbi	2,256	-	-	1,129	-	-	10,217	-	-	-	-	-	567	-	567	633	-	-	11,874	-	11,354	-	-	
Rwamagana	3,538	-	3,005	-	25,034	9,022	8,583	2,547	15,157	15,617	8,427	9,383	572	575	271	539	211	498	6,644	1,592	25,121	11,904	-	
Nyagatare	4,302	2,109	4,199	-	22,841	3,079	6,454	-	8,758	8,585	7,305	16,683	512	507	627	767	-	1,053	7,665	3,424	7,602	689	-	
Gatsibo	3,819	1,864	3,176	-	18,270	7,126	5,333	-	16,486	17,366	7,361	-	910	956	636	-	656	531	7,232	-	11,474	7,579	-	
Kayanza	5,202	3,028	4,175	500	8,686	2,933	3,991	1,783	15,410	16,360	7,853	8,111	811	811	-	645	453	1,204	11,216	1,866	19,302	127	-	
Kirehe	5,769	-	4,887	-	-	-	-	-	-	-	-	-	1,278	1,278	-	-	-	1,174	7,204	-	-	-	234	-
Ngoma	3,931	-	3,676	-	-	-	5,061	-	7,171	6,867	9,145	10,309	597	514	1,200	-	91	390	10,382	7,772	25,847	5,714	-	
Bugesera	2,108	-	4,358	-	17,947	5,616	4,622	-	10,586	13,274	10,686	8,663	684	684	-	-	530	257	7,979	2,643	7,629	833	-	
National_LS	3,975	2,253	4,253	1,740	17,543	3,232	10,853	4,318	11,703	12,132	9,103	10,552	1,002	1,001	1,094	604	528	711	8,264	3,617	11,503	2,392	-	

Source: NISR, SAS 2021

Table 12: Season A 2021_Crop production by crop type and district (MT)

District	Maize	Sorghum	Paddy rice	Wheat	Other Cereals	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Bananas	Cooking Banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Peas	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops	Other crops
Nyarugenge	1,209	-	-	-	-	1,704	2,016	401	353	10,492	2,663	1,829	6,000	1,689	1,685	4	-	22	176	2,491	114	630	416
Gasabo	3,613	-	862	-	1	10,731	7,814	2,699	611	20,365	9,586	2,839	7,940	5,280	5,040	240	159	193	119	6,118	15	7,083	1,205
Kicukiro	1,606	-	171	-	-	456	2,940	55	252	4,943	1,887	936	2,120	1,450	1,436	15	-	31	42	1,033	109	1,020	1,150
Nyanza	8,134	168	1,355	-	-	58,622	13,922	1,112	927	27,998	7,197	5,111	15,689	12,707	11,354	1,353	81	209	476	5,640	622	5,975	92
Gisagara	12,020	409	8,722	-	89	17,606	14,383	954	3,512	30,184	6,569	5,764	17,850	9,859	9,078	781	105	187	1,069	2,803	577	576	496
Nyaruguru	11,155	-	-	30	2	11,205	44,884	7,751	5,184	19,353	6,318	2,774	10,261	5,104	1,085	4,019	319	8	243	5,584	326	6,128	3,289
Huye	6,989	-	4,003	-	153	46,557	17,601	3,414	1,546	28,913	9,801	5,294	13,818	9,455	7,365	2,090	142	101	951	3,202	93	1,422	48
Nyamagabe	8,269	-	575	63	-	15,196	54,195	15,055	1,766	20,142	3,811	2,264	14,067	6,340	1,916	4,424	1,309	4	746	4,901	386	4,026	-
Ruhango	4,475	4	4,177	-	16	95,120	12,128	1,681	2,150	23,462	3,336	2,723	17,403	8,998	6,416	2,582	86	299	1,474	3,410	179	7,527	1,725
Muhanga	2,284	21	503	12	16	18,393	27,735	1,120	21,191	57,788	11,651	6,743	39,394	3,698	1,736	1,962	51	7	1,065	4,752	243	11,170	802
Kamonyi	5,617	-	767	-	-	24,521	10,976	2,273	1,473	44,022	8,410	4,387	31,225	8,041	6,713	1,328	33	318	1,538	5,757	5,670	6,811	2,631
Karongi	12,988	-	-	35	-	14,074	35,085	9,329	7,324	46,770	9,900	7,130	29,740	5,783	1,453	4,330	751	-	664	9,592	970	6,479	562
Rutsiro	10,727	-	-	171	-	2,225	28,640	29,874	9,676	32,913	8,971	3,133	20,808	3,734	266	3,468	510	-	542	3,408	3,380	3,542	8,642
Rubavu	3,366	103	-	-	-	-	4,998	69,790	492	15,673	5,172	980	9,521	5,634	354	5,281	51	26	278	17,255	137	24	28,453
Nyabihu	4,207	1,071	-	1,268	-	1,172	20,979	115,357	859	3,300	1,005	731	1,565	4,225	84	4,141	673	-	-	10,401	145	1,138	818
Ngororero	4,818	370	-	443	-	16,706	34,059	8,036	7,248	29,923	5,582	5,385	18,956	8,495	878	7,618	378	-	457	2,012	1,617	2,080	7,267
Rusizi	10,782	13	7,243	-	-	15,855	13,098	780	9,402	27,648	8,609	1,722	17,317	7,959	6,441	1,518	126	266	1,049	6,824	732	220	8,807
Nyamasheke	8,408	72	1,906	15	98	27,110	15,429	580	6,073	18,531	5,449	2,037	11,044	6,537	1,592	4,945	108	129	894	3,762	292	1,320	3,507
Rulindo	6,385	-	65	45	-	8,780	29,283	5,536	371	22,334	7,803	3,953	10,578	6,542	2,817	3,725	308	25	182	11,820	2,018	3,350	23,820
Gakenke	18,428	74	209	78	375	13,565	51,056	6,418	8,611	68,007	13,933	6,704	47,370	6,844	1,001	5,843	428	68	397	3,333	2,361	3,053	2,280
Musanze	12,023	3,019	-	1,161	7	161	16,892	52,462	448	9,065	4,667	788	3,610	6,354	148	6,206	117	-	17	5,226	466	1,051	5,625
Burera	20,650	1,720	-	1,065	20	446	25,086	59,671	296	7,622	4,303	196	3,123	8,066	313	7,754	1,208	-	-	2,095	36	2,515	-
Gicumbi	6,369	119	-	115	-	8,083	63,080	26,028	401	18,296	9,816	3,014	5,466	16,318	3,998	12,320	1,026	175	79	4,948	702	11,509	24
Rwamagana	15,341	-	1,091	-	21	21,768	14,251	6,272	550	76,253	55,608	7,797	12,848	12,309	11,973	336	89	511	108	5,897	347	6,145	821
Nyagatare	47,679	25,232	6,453	-	155	19,277	8,195	3,458	29	76,142	52,560	5,304	18,278	14,835	13,387	1,448	166	836	418	3,572	277	118	7,528
Gatsibo	28,704	3,496	4,653	-	87	21,751	21,152	11,601	186	114,590	72,581	10,958	31,051	14,912	14,086	827	53	1,055	524	3,719	1,330	41	117
Kayanza	22,280	2,890	5,876	0	500	62,691	13,349	6,700	1,141	58,082	43,605	4,873	9,605	14,685	14,473	212	84	482	62	7,350	472	2,546	0
Kirehe	37,451	1,933	5,206	-	45	21,509	10,456	6,484	728	100,103	66,428	5,408	28,267	16,240	14,875	1,365	183	193	276	5,050	622	1,174	16
Ngoma	25,636	189	3,049	-	82	30,443	19,975	7,930	783	95,056	60,135	7,681	27,240	12,011	11,218	793	58	272	175	2,518	637	4,531	14
Bugesera	17,026	3,137	7,064	-	70	15,561	33,690	739	235	44,393	22,431	6,086	15,876	14,745	14,683	62	15	896	215	5,197	403	8,829	76
2021 A	378,641	44,039	63,950	4,500	1,738	601,291	667,346	463,562	93,819	1,152,365	529,788	124,546	498,031	258,851	167,862	90,989	8,617	6,313	14,237	159,669	25,275	112,030	110,233
2020 A	353,999	42,231	52,225	4,138	1,930	578,545	635,007	427,471	85,414	1,100,082	502,972	120,868	476,241	226,570	142,983	83,588	7,933	5,762	12,284	160,114	24,713	129,651	176,592
Change	7%	4%	22%	9%	-10%	4%	5%	8%	10%	5%	5%	3%	5%	14%	17%	9%	9%	10%	16%	0%	2%	-14%	-38%

Source: NISR, SAS, 2021

Table 13: The Use of production by farmers in 2021 Season A (in percentage)

Crops	Sold	Auto consumption	Wages for hired labour	Farm rent	Offered as gift	Barter trade/Exchanged with other things	Seeds	Fodder purposes	Stored	Post harvesting losses	Other usage
Cereals											
Maize	34.6	54.2	1.0	1.6	5.4	0.0	0.9	0.2	1.7	0.1	0.3
Sorghum	56.4	30.9	1.5	2.9	4.2	0.0	2.4	0.0	1.1	0.2	0.4
Paddy rice	79.3	16.0	1.2	0.2	0.3	0.0	0.7	-	-	0.6	1.7
Wheat	44.2	38.4	0.0	-	5.8	-	10.7	0.1	0.4	0.0	0.4
Other cereals	15.4	67.0	0.6	0.4	6.2	-	8.9	-	0.4	0.1	0.8
Tubers and Roots											
Sweet potato	20.5	71.0	1.5	0.6	4.8	0.0	0.0	1.4	0.1	0.0	0.1
Irish potato	40.4	41.4	0.6	0.3	3.4	0.0	13.2	0.0	0.2	0.2	0.3
Yam & Taro	22.5	64.5	1.2	1.0	6.0	0.1	4.7	-	-	-	0.1
Cassava	42.5	50.6	1.5	1.2	3.3	0.0	0.0	0.2	0.1	0.2	0.4
Legumes and Pulses											
Bush bean	18.9	56.5	1.6	2.0	3.9	0.1	13.5	0.0	3.0	0.3	0.2
Climbing bean	12.9	64.2	0.9	0.6	5.2	0.1	14.1	0.0	1.8	0.1	0.2
Pea	24.8	56.4	0.1	0.0	3.6	-	14.4	-	0.5	0.1	0.0
Groundnut	18.3	56.3	0.6	1.2	3.1	0.0	20.1	-	0.3	0.0	0.1
Soybean	15.6	60.4	0.2	0.9	3.1	0.3	18.0	0.2	1.0	0.1	0.0
Banana											
Cooking banana	30.3	64.9	1.0	0.1	3.3	-	0.0	0.0	-	0.1	0.3
Dessert banana	61.7	35.7	0.2	0.1	1.9	0.0	0.0	0.0	-	0.2	0.3
Banana for beer	78.6	17.2	0.1	0.0	3.1	0.0	-	0.0	-	0.7	0.2
Vegetables and fruits											
Vegetables	77.0	16.1	0.1	0.3	3.3	0.0	1.1	0.0	0.1	0.9	1.0
Fruits	71.7	23.7	-	-	3.3	-	0.0	0.0	-	0.2	1.1
<i>Fodder crops</i>	3.5	-	1.3	-	0.6	0.0	0.0	91.7	2.6	0.0	0.4
<i>Other crops</i>	84.0	12.4	0.1	-	1.3	-	0.0	-	-	0.2	2.0

Source: NISR, SAS, 2021

Table 14: Percentage of cultivated area by cropping system and district in 2021 Season A

District	Pure	Mixed	Total
Nyarugenge	14.9	85.1	100.0
Gasabo	20.8	79.2	100.0
Kicukiro	26.6	73.4	100.0
Nyanza	24.7	75.3	100.0
Gisagara	25.2	74.8	100.0
Nyaruguru	38.3	61.7	100.0
Huye	19.8	80.2	100.0
Nyamagabe	33.3	66.7	100.0
Ruhango	31.6	68.4	100.0
Muhanga	27.0	73.0	100.0
Kamonyi	28.4	71.6	100.0
Karongi	32.2	67.8	100.0
Rutsiro	38.1	61.9	100.0
Rubavu	54.3	45.7	100.0
Nyabihu	49.0	51.0	100.0
Ngororero	25.4	74.6	100.0
Rusizi	19.1	80.9	100.0
Nyamasheke	30.6	69.4	100.0
Rulindo	31.0	69.0	100.0
Gakenke	23.1	76.9	100.0
Musanze	47.3	52.7	100.0
Burera	48.8	51.2	100.0
Gicumbi	35.7	64.3	100.0
Rwamagana	14.3	85.7	100.0
Nyagatare	29.9	70.1	100.0
Gatsibo	21.5	78.5	100.0
Kayonza	23.8	76.2	100.0
Kirehe	18.0	82.0	100.0
Ngoma	22.1	77.9	100.0
Bugesera	20.9	79.1	100.0
National	28.3	71.7	100.0
SSF	26.7	73.3	100.0
LSF	96.0	4.0	100.0

Source: NISR, SAS 2021

Table 15: Sowing dates by district in Season A 2021 (Percentage)

District	Before 01/09	Between 01-15/09	Between 16-30/09	Between 01-15/10	Between 16-31/10	After 31/10	Other seasons for perennial crops	Total
Nyarugenge	11.1	2.8	14.4	30.6	13.0	7.6	20.5	100
Gasabo	14.8	5.9	25.4	25.1	8.1	6.6	14.2	100
Kicukiro	19.2	0.7	13.0	35.6	13.4	7.1	10.9	100
Nyanza	2.9	4.0	10.8	37.9	12.6	7.1	24.8	100
Gisagara	15.0	5.1	13.0	35.1	13.9	6.5	11.5	100
Nyaruguru	20.2	11.0	19.2	24.8	9.1	6.0	9.8	100
Huye	7.0	11.4	13.5	26.9	11.0	7.9	22.4	100
Nyamagabe	10.3	17.3	16.5	25.5	8.2	8.7	13.4	100
Ruhango	10.9	8.8	11.1	37.3	8.5	5.1	18.2	100
Muhanga	5.1	6.0	9.9	20.6	9.8	11.9	36.7	100
Kamonyi	2.3	4.3	8.5	37.5	11.7	8.0	27.6	100
Karongi	17.6	24.7	23.9	11.5	4.1	6.4	11.9	100
Rutsiro	26.2	22.5	15.2	8.1	2.7	8.3	17.0	100
Rubavu	37.7	31.5	9.8	8.9	3.2	3.3	5.7	100
Nyabihu	35.5	14.5	17.6	16.9	3.1	6.4	6.0	100
Ngororero	15.8	17.6	18.8	15.9	3.7	9.3	18.8	100
Rusizi	4.7	16.4	23.7	37.3	4.4	2.1	11.4	100
Nyamasheke	12.0	18.0	26.1	20.4	3.5	4.4	15.6	100
Rulindo	6.6	15.3	25.4	11.5	4.5	4.6	32.2	100
Gakenke	18.1	12.6	24.7	12.7	3.3	5.6	23.0	100
Musanze	31.8	30.5	11.7	7.9	2.5	7.7	8.1	100
Burera	20.1	28.9	27.0	8.4	4.0	5.0	6.7	100
Gicumbi	17.2	15.5	24.3	16.2	7.6	6.7	12.5	100
Rwamagana	19.7	8.1	18.5	21.9	11.1	4.1	16.8	100
Nyagatare	18.5	34.9	25.9	8.0	1.6	1.4	9.6	100
Gatsibo	16.2	16.5	23.9	19.4	5.8	2.4	15.8	100
Kayonza	5.8	8.7	23.1	26.2	8.1	4.2	23.9	100
Kirehe	9.4	2.1	10.6	39.5	11.3	4.4	22.7	100
Ngoma	24.6	10.8	21.4	26.0	5.0	2.1	10.2	100
Bugesera	6.3	5.3	8.6	36.7	15.9	7.5	19.7	100
National	14.3	13.0	17.9	24.1	7.8	5.7	17.3	100

Source: NISR, SAS 2021

Table 16: Percentage of crops by sowing date in Season A 2021 (Percentage)

Crops	Before 01/09	Between 01-15/09	Between 16-30/09	Between 01-15/10	Between 16-31/10	After 31/10	Other seasons for perennial crops	Total
Fruits	42.1	3.8	3.1	4.5	2.4	7.9	36.3	100
Vegetables	19.3	13.0	12.0	19.0	11.6	25.2	0.0	100
Other crops	66.3	3.6	2.5	4.1	2.5	4.9	16.2	100
Other cereals	0.6	16.2	22.8	43.7	13.2	3.6	0.0	100
Taro & Yams	17.0	23.5	18.5	18.5	5.8	16.4	0.3	100
Fodder crops	81.1	6.6	1.8	3.1	2.6	4.9	0.0	100
Maize	4.8	18.9	27.3	36.1	10.1	2.9	0.0	100
Paddy rice	86.2	9.6	1.6	1.1	0.5	1.1	0.0	100
Sorghum	28.5	30.6	21.6	13.9	4.8	0.6	0.0	100
Wheat	6.5	7.6	14.1	34.8	16.3	20.7	0.0	100
Bush bean	0.8	10.8	25.0	46.4	14.7	2.3	0.0	100
Climbing bean	5.5	26.8	34.5	26.4	6.1	0.7	0.0	100
Pea	8.6	20.7	31.8	22.4	10.0	6.5	0.0	100
Irish potato	13.9	20.1	21.5	23.1	9.3	12.1	0.0	100
Sweet potato	16.8	8.8	8.4	16.3	12.1	37.6	0.0	100
Soybean	0.9	11.8	21.7	43.3	16.6	5.8	0.0	100
Groundnut	0.5	15.5	29.3	39.7	12.3	2.8	0.0	100
Cooking banana	34.2	0.7	0.6	0.6	0.2	0.5	63.3	100
Dessert banana	30.9	0.8	0.4	0.6	0.2	0.6	66.5	100
Banana for beer	28.1	0.7	0.5	0.3	0.1	0.6	69.8	100
Cassava	12.8	15.9	17.4	23.4	6.0	6.2	18.4	100
National	14.3	13.0	17.9	24.1	7.8	5.7	17.3	100

Source: NISR, SAS 2021

Table 17: Use of seeds by farmer type per district during Season A 2021 (in 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	35.7	35.7	-	27.8	27.8	-	25.2	25.2	-
Gasabo	35.6	33.4	91.7	21.1	21.1	71.0	26.1	24.9	80.4
Kicukiro	44.1	42.8	100.0	28.0	28.0	83.3	29.8	28.3	91.1
Nyanza	30.7	29.7	87.5	21.8	21.8	77.8	23.7	22.7	83.9
Gisagara	45.5	43.3	90.9	35.2	35.2	71.4	33.3	29.3	81.4
Nyaruguru	38.4	36.9	90.0	31.0	31.0	84.6	27.4	26.7	88.6
Huye	38.6	35.4	96.0	27.3	27.3	73.5	27.4	25.4	90.7
Nyamagabe	28.3	28.3	-	26.3	26.3	-	20.9	21.0	-
Ruhango	25.1	23.9	88.9	19.5	19.5	65.2	20.1	18.7	85.0
Muhanga	17.7	16.2	100.0	10.5	10.5	90.9	11.5	10.2	99.3
Kamonyi	35.1	33.5	100.0	26.4	26.4	80.0	24.8	23.6	97.9
Karongi	39.0	39.1	-	33.9	33.9	-	28.4	28.5	-
Rutsiro	24.4	24.4	-	20.8	20.8	-	18.4	18.4	-
Rubavu	24.1	23.3	100.0	20.4	20.4	83.3	19.8	19.7	53.7
Nyabihu	21.9	21.9	-	19.2	19.2	-	18.0	18.0	-
Ngororero	25.5	25.5	-	16.8	16.8	-	20.2	20.2	-
Rusizi	41.2	40.2	90.0	29.7	29.7	86.7	30.3	27.7	98.1
Nyamasheke	30.5	30.1	57.1	27.7	27.7	66.7	23.0	22.8	49.7
Rulindo	35.5	34.8	100.0	31.1	31.1	47.4	25.9	25.8	57.5
Gakenke	40.3	40.3	-	35.6	35.6	-	29.0	29.0	-
Musanze	35.0	35.0	-	34.3	34.3	-	29.5	29.5	-
Burera	43.9	43.9	-	36.5	36.5	-	31.7	31.7	-
Gicumbi	25.3	24.9	100.0	19.9	19.9	58.3	18.5	18.5	81.5
Rwamagana	50.9	49.2	82.8	39.7	39.7	59.1	33.3	32.6	76.9
Nyagatare	44.1	40.0	93.3	26.3	26.3	82.4	31.4	28.8	95.5
Gatsibo	44.0	42.3	100.0	32.6	32.6	78.5	32.6	30.4	98.9
Kayonza	48.9	46.3	95.7	37.9	37.9	44.3	34.0	32.4	78.3
Kirehe	51.1	50.5	90.0	43.6	43.6	91.3	34.4	33.2	75.1
Ngoma	54.8	54.3	75.0	47.8	47.8	49.0	35.2	34.6	73.7
Bugesera	37.5	35.3	75.7	33.6	33.6	60.4	26.9	25.1	82.5
National	37.1	36.0	88.8	28.7	28.7	65.2	27.6	26.5	85.6

Source: NISR, SAS 2021

Table 18: Percentage of crops by seed type in Season A 2021

Crop	Traditional seeds	Improved seeds	Total
Maize	38.7	61.3	100
Paddy rice	28.3	71.7	100
Sorghum	100.0	-	100
Wheat	80.4	19.6	100
Other cereals	100.0	-	100
Bush bean	99.3	0.7	100
Climbing bean	99.7	0.3	100
Pea	99.7	0.3	100
Irish potato	97.1	2.9	100
Sweet potato	99.9	0.1	100
Taro & Yams	100.0	-	100
Soybean	97.0	3.0	100
Groundnut	99.5	0.5	100
Cooking banana	99.5	0.5	100
Dessert banana	98.6	1.4	100
Banana for beer	99.0	1.0	100
Cassava	99.7	0.3	100
Vegetables	55.0	45.0	100
Fruits	66.9	33.1	100
Fodder crops	82.7	17.3	100
Other crops	71.9	28.1	100
National	85.3	14.7	100

Source: NISR, SAS 2021

Table 19: Percentage of farmers by source of improved seeds per district in Season A 2021

District	Government (MINAGRI/RAB/NAEB)	Recognized seed multipliers	Agro- dealers	NGOs/Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	34.6	-	44.4	4.9	11.1	1.2	3.7	100
Gasabo	20.9	9.7	61.9	0.8	5.2	0.8	0.8	100
Kicukiro	6.2	3.1	70.1	1.0	16.5	2.1	1.0	100
Nyanza	4.8	1.8	15.5	67.3	4.2	3.0	3.6	100
Gisagara	8.0	4.2	23.9	60.3	1.3	1.7	0.8	100
Nyaruguru	5.4	1.4	21.6	64.9	3.4	0.7	2.7	100
Huye	6.8	14.0	15.9	51.2	11.1	0.5	0.5	100
Nyamagabe	0.8	16.9	35.4	29.2	8.5	7.7	1.5	100
Ruhango	9.4	4.0	47.7	6.0	22.8	9.4	0.7	100
Muhanga	14.1	3.5	31.8	18.8	4.7	27.1	-	100
Kamonyi	7.8	2.9	47.6	20.9	7.3	11.7	1.9	100
Karongi	17.1	2.0	12.2	65.9	1.5	0.5	1.0	100
Rutsiro	11.2	4.1	26.5	51.0	3.1	1.0	3.1	100
Rubavu	6.6	3.3	57.1	19.8	11.0	1.1	1.1	100
Nyabihu	2.9	1.0	58.1	28.6	3.8	5.7	-	100
Ngororero	6.8	10.2	20.4	57.8	3.4	1.4	-	100
Rusizi	6.1	3.5	37.8	49.6	1.3	-	1.7	100
Nyamasheke	17.0	1.8	12.3	62.6	2.3	1.8	2.3	100
Rulindo	9.9	2.3	65.1	15.7	7.0	-	-	100
Gakenke	2.3	4.5	67.4	18.0	5.6	2.3	-	100
Musanze	6.2	1.0	76.3	11.9	2.8	1.4	0.5	100
Burera	1.2	-	81.7	12.0	0.4	4.8	-	100
Gicumbi	7.1	0.6	64.7	10.9	12.8	1.9	1.9	100
Rwamagana	2.6	11.1	24.8	46.4	9.0	5.3	0.9	100
Nyagatare	8.7	4.0	47.7	29.5	1.7	8.1	0.3	100
Gatsibo	6.8	5.3	20.9	61.7	3.2	1.8	0.3	100
Kayonza	5.8	3.6	28.9	58.2	2.7	0.9	-	100
Kirehe	8.2	0.5	13.3	64.4	1.1	10.3	2.2	100
Ngoma	18.3	2.4	22.5	46.7	5.5	3.7	1.0	100
Bugesera	5.5	5.1	41.4	33.6	3.8	10.6	-	100
National	8.3	4.3	37.6	39.3	5.2	4.3	1.0	100

Source: NISR, SAS 2021

Table 20: Percentage of crops by source of seeds

Crop	Government (MINAGRI/RAB/NAEB)	Recognized seed multipliers	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
Maize	7.3	2.4	39.4	44.0	3.4	3.0	0.7	100
Paddy rice	2.2	39.7	0.7	1.5	-	55.9	-	100
Wheat	15.8	-	63.2	10.5	-	10.5	-	100
Bush bean	17.7	8.8	38.2	19.1	13.2	2.9	-	100
Climbing bean	31.6	5.3	31.6	31.6	-	-	-	100
Irish potato	18.3	33.8	11.3	4.2	21.1	8.5	2.8	100
Sweet potato	9.1	-	81.8	9.1	-	-	-	100
Soybean	34.2	7.9	36.8	13.2	5.3	2.6	-	100
Cooking banana	27.8	50.0	-	5.6	-	5.6	11.1	100
Dessert banana	35.7	31.0	2.4	7.1	4.8	7.1	11.9	100
Banana for beer	26.3	42.1	13.2	-	-	10.5	7.9	100
Cassava	32.1	17.9	50.0	-	-	-	-	100
Vegetables	3.5	3.3	53.3	4.3	32.5	0.3	3.0	100
Fruits	24.7	34.8	14.6	5.6	13.5	6.7	-	100
Fodder	33.3	2.6	35.9	2.6	23.1	2.6	-	100
Other crops	32.2	25.6	4.4	8.9	13.3	7.8	7.8	100

Source: NISR, SAS 2021

Table 21: Season A 2021_ Use of organic fertilizer by farmer type per district (in 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	53.8	53.8		42.0	42.0	-	53.8	53.8	-
Gasabo	60.8	60.3	75.0	54.2	54.2	80.6	56.3	56.8	36.5
Kicukiro	44.1	42.8	100.0	32.0	32.0	83.3	45.0	43.9	79.4
Nyanza	57.9	57.4	87.5	55.9	55.9	88.9	57.6	56.8	92.9
Gisagara	59.7	58.6	81.8	56.4	56.4	68.6	60.0	59.3	66.3
Nyaruguru	83.5	83.0	100.0	79.5	79.5	92.3	81.7	81.5	99.6
Huye	75.7	74.3	100.0	73.1	73.1	91.2	73.2	72.2	97.0
Nyamagabe	77.8	77.7	100.0	73.4	73.4	100.0	74.3	74.3	100.0
Ruhango	69.7	70.1	44.4	64.1	64.1	65.2	65.6	67.1	8.8
Muhanga	72.4	71.9	100.0	65.5	65.5	100.0	70.9	70.4	100.0
Kamonyi	64.9	64.3	91.7	59.2	59.2	73.3	58.5	58.0	84.8
Karongi	78.6	78.6	100.0	74.2	74.2	100.0	76.9	76.9	100.0
Rutsiro	70.7	70.7		69.4	69.4	-	70.6	70.6	-
Rubavu	27.1	26.3	100.0	24.9	24.9	58.3	25.7	25.6	80.5
Nyabihu	61.2	61.2		56.1	56.1	-	58.8	58.8	-
Ngororero	89.6	89.6		86.8	86.8	-	89.5	89.5	-
Rusizi	71.5	72.5	20.0	74.7	74.7	46.7	66.5	69.9	1.9
Nyamasheke	83.3	83.0	100.0	81.0	81.0	88.9	81.5	81.2	99.8
Rulindo	85.6	85.7	80.0	82.4	82.4	63.2	82.8	82.9	41.1
Gakenke	89.5	89.5		87.1	87.1	-	87.9	87.9	-
Musanze	60.2	60.2		57.5	57.5	-	58.1	58.1	-
Burera	76.2	76.2		74.9	74.9	-	73.9	73.9	-
Gicumbi	88.4	88.3	100.0	84.9	84.9	58.3	86.9	86.9	78.3
Rwamagana	65.1	63.8	89.7	58.9	58.9	51.9	61.4	61.6	51.0
Nyagatare	40.0	38.7	55.6	35.2	35.2	56.0	38.5	38.9	30.5
Gatsibo	68.6	68.6	68.4	62.5	62.5	55.4	63.5	65.8	13.6
Kayanza	51.1	49.0	87.0	45.2	45.2	53.6	50.1	49.3	66.8
Kirehe	60.4	60.1	80.0	55.3	55.3	91.3	61.0	59.8	92.0
Ngoma	62.7	62.8	56.3	56.7	56.7	61.2	61.6	62.4	25.5
Bugesera	43.0	42.3	54.1	41.1	41.1	47.2	39.4	39.8	29.2
National	67.0	66.8	74.8	66.3	66.3	60.6	64.1	64.4	51.4

Source: NISR, SAS 2021

Table 22: Season A 2021_ Use of inorganic fertilizer by farmer type per district (in 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	16.7	16.7		9.3	9.3		14.5	14.5	-
Gasabo	28.0	25.9	83.3	18.1	18.1	27.4	26.1	24.8	74.0
Kicukiro	43.7	42.3	100.0	33.4	33.4	75.0	41.5	39.8	96.3
Nyanza	22.8	21.6	100.0	15.5	15.5	100.0	22.5	20.8	100.0
Gisagara	41.1	38.3	100.0	31.3	31.3	82.9	41.9	35.1	99.9
Nyaruguru	64.5	63.4	100.0	53.8	53.8	92.3	61.4	60.9	99.6
Huye	32.4	28.6	100.0	25.3	25.3	76.5	29.4	26.5	99.0
Nyamagabe	46.1	46.0	100.0	38.4	38.4	100.0	42.3	42.2	100.0
Ruhango	15.5	14.3	77.8	11.5	11.5	43.5	15.4	13.4	91.5
Muhanga	17.0	15.5	100.0	11.8	11.8	100.0	12.2	10.7	100.0
Kamonyi	21.1	19.2	100.0	16.7	16.7	80.0	16.2	14.5	97.9
Karongi	47.1	47.0	100.0	39.3	39.3	50.0	42.9	42.9	93.4
Rutsiro	41.5	41.5		30.4	30.4		40.3	40.3	-
Rubavu	42.4	42.3	50.0	33.3	33.3	25.0	40.8	40.8	48.4
Nyabihu	52.1	52.1		41.9	41.9		52.5	52.5	-
Ngororero	42.5	42.5		31.7	31.7		43.3	43.3	-
Rusizi	59.8	59.4	80.0	53.1	53.1	53.3	57.9	56.3	87.8
Nyamasheke	63.5	62.9	100.0	58.4	58.4	88.9	60.6	60.2	99.8
Rulindo	43.6	43.2	80.0	31.4	31.4	68.4	39.9	39.7	89.7
Gakenke	55.7	55.7		49.3	49.3		53.5	53.5	-
Musanze	42.9	42.9		37.3	37.3		42.3	42.3	-
Burera	43.7	43.7		33.2	33.2		40.7	40.7	-
Gicumbi	34.1	33.8	100.0	26.4	26.4	66.7	31.7	31.6	84.7
Rwamagana	46.1	45.0	65.5	34.4	34.4	32.5	42.5	41.8	71.8
Nyagatare	49.8	46.2	93.3	34.9	34.9	71.2	42.9	40.3	96.7
Gatsibo	40.1	38.3	100.0	29.4	29.4	69.2	39.6	37.0	98.7
Kayonza	37.4	34.6	87.0	24.8	24.8	37.9	36.6	33.8	91.2
Kirehe	47.4	46.7	90.0	34.9	34.9	87.0	46.0	43.9	97.9
Ngoma	43.9	42.6	93.8	32.3	32.3	55.1	39.8	38.7	92.5
Bugesera	32.1	30.3	62.2	27.2	27.2	41.0	27.9	26.0	75.3
National	40.9	39.8	87.2	32.8	32.8	52.9	38.9	37.5	93.3

Source: NISR, SAS 2021

Table 23: Percentage of farmers by source of inorganic fertilizers per district in Season A 2021

District	Government (MINAGRI/RAB/NAEB)	Agro dealers	NGOs/Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	11.4	65.7	2.9	14.3	-	5.7	100
Gasabo	14.1	82.6	1.1	-	2.2	-	100
Kicukiro	3.2	77.7	1.1	17.0	1.1	-	100
Nyanza	3.5	9.6	78.9	1.8	2.6	3.5	100
Gisagara	4.5	24.0	58.5	4.0	7.0	2.0	100
Nyaruguru	1.8	22.0	70.4	4.9	0.9	-	100
Huye	2.0	39.2	54.2	3.3	1.3	-	100
Nyamagabe	1.0	47.2	40.4	5.7	5.7	-	100
Ruhango	3.8	65.4	10.3	12.8	6.4	1.3	100
Muhanga	2.6	44.2	26.0	2.6	22.1	2.6	100
Kamonyi	3.6	50.9	25.5	4.5	11.8	3.6	100
Karongi	12.9	16.3	66.5	2.9	1.4	-	100
Rutsiro	9.3	51.9	33.3	2.5	1.9	1.2	100
Rubavu	1.2	76.4	16.1	6.2	-	-	100
Nyabihu	0.4	79.0	17.0	1.3	1.7	0.4	100
Ngororero	3.3	33.8	56.8	5.2	0.9	-	100
Rusizi	1.7	38.9	53.8	5.3	0.3	-	100
Nyamasheke	2.8	10.5	85.3	0.7	0.7	-	100
Rulindo	10.2	64.5	22.8	2.0	0.5	-	100
Gakenke	0.9	73.0	18.1	4.9	2.3	0.9	100
Musanze	3.2	88.6	7.8	0.5	-	-	100
Burera	-	83.8	11.4	0.4	4.4	-	100
Gicumbi	2.5	72.2	19.2	5.1	0.5	0.5	100
Rwamagana	1.5	35.3	54.4	3.3	4.8	0.7	100
Nyagatare	5.0	55.1	28.6	3.0	8.0	0.3	100
Gatsibo	2.6	31.5	60.7	1.9	3.0	0.4	100
Kayonza	2.5	24.2	64.6	7.5	1.2	-	100
Kirehe	3.9	16.1	65.9	2.9	10.0	1.3	100
Ngoma	2.5	24.8	59.6	5.3	5.3	2.5	100
Bugesera	7.5	46.2	32.1	2.8	11.3	-	100
National	3.6	46.0	42.2	3.8	3.7	0.7	100

Source: NISR, SAS 2021

Table 24: Source of inorganic fertiliser by type of fertilizer in Season A 2021

Fertilizer name	Government (MINAGRI/RAB/NAEB)	Agro dealers	NGOs/Companies	Market	Agriculture cooperative	Other source
NPK 17-17-17	4.9	62.6	22.1	3.9	5.8	0.8
NPK 20-10-10	30.8	23.1	30.8	-	7.7	7.7
NPK 25-5-5	66.7	-	33.3	-	-	-
NPK 22-6-12	57.1	14.3	4.8	-	23.8	-
Other NPK	3.0	78.8	15.2	-	3.0	-
Urea	3.4	41.5	47.1	3.5	3.8	0.6
liquid urea (Mbonea Majimaji)	-	76.6	14.9	6.4	2.1	-
DAP	3.1	42.1	48.8	2.8	2.8	0.4
TSP	100	-	-	-	-	-
KCL/MOP,	25.0	25.0	-	-	50.0	-
Omax	-	87.5	12.5	-	-	-
Winner	-	100	-	-	-	-
Yara Viva	34.4	37.5	9.4	-	18.8	-
Amidas	2.1	63.8	12.8	2.1	17.0	2.1
Cereal	5.5	53.8	20.9	1.1	15.4	3.3
Boaster	-	40.0	60.0	-	-	-
DI Grow	-	81.0	9.5	4.8	4.8	-
Dyna gro	100	-	-	-	-	-
Rhizobium	-	100	-	-	-	-
Other type of fertilizer	11.7	65.0	8.3	8.3	6.7	-
Total	3.8	45.0	43.6	3.2	3.9	0.6

Source: NISR, SAS 2021

Table 25: Percentage of plots by type of inorganic fertilizer, per district in Season A 2021 (percentage)

District	NPK 17-17-17	NPK 20-10-10	NPK 25-5-5	Urea	Liquid urea	DAP	KCL/MOP	Others
Nyarugenge	14.30	-	-	50.00	3.60	25.00	-	7.10
Gasabo	13.60	-	-	48.10	-	37.70	-	0.60
Kicukiro	7.30	-	-	44.20	-	41.80	-	6.70
Nyanza	5.70	0.50	0.50	43.90	-	49.10	-	0.30
Gisagara	9.20	-	-	41.60	-	43.90	-	5.30
Nyaruguru	4.90	-	-	39.90	-	54.50	-	0.70
Huye	12.70	0.40	-	40.60	-	38.20	-	8.10
Nyamagabe	15.00	-	-	36.00	-	47.40	-	1.60
Ruhango	16.30	-	-	45.50	-	33.30	-	4.90
Muhanga	11.10	-	-	35.60	-	45.20	-	8.10
Kamonyi	13.30	1.20	-	43.40	-	35.30	-	6.80
Karongi	7.00	-	-	41.00	-	48.60	-	3.40
Rutsiro	28.60	-	-	29.00	0.40	35.50	-	6.50
Rubavu	46.80	-	-	21.90	3.80	26.60	-	0.90
Nyabihu	35.80	-	-	25.30	5.00	30.00	-	3.90
Ngororero	8.50	-	-	40.00	-	51.20	-	0.30
Rusizi	9.90	0.40	-	40.90	0.20	47.80	-	0.80
Nyamasheke	7.40	-	-	37.20	-	54.80	-	0.60
Rulindo	12.20	0.30	-	41.60	-	42.80	0.30	2.80
Gakenke	3.60	-	-	38.50	0.20	56.50	-	1.20
Musanze	25.10	-	-	36.50	0.90	35.60	-	1.90
Burera	17.90	-	-	31.10	1.70	47.80	-	1.50
Gicumbi	22.70	0.30	0.30	33.70	-	42.70	-	0.30
Rwamagana	10.70	-	0.20	43.50	-	44.00	-	1.60
Nyagatare	5.60	-	-	46.20	-	40.80	-	7.40
Gatsibo	9.50	0.20	-	43.90	0.60	41.20	-	4.60
Kayonza	11.20	-	-	41.50	-	40.40	-	6.90
Kirehe	3.10	0.70	-	39.20	0.50	50.30	-	6.20
Ngoma	4.00	-	-	47.40	-	46.50	-	2.10
Bugesera	15.60	-	-	35.60	-	45.70	-	3.10
National	12.00	0.10	-	39.50	0.40	44.60	-	3.40

Source: NISR, SAS 2021

Table 26: Season A 2021_ Use of pesticides by farmer type per district (in percentage)

District	Percentage of farmers who used pesticides			Percentage of plots in which pesticides were used			Percentage of land size in which pesticides were used		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	21.4	21.4	-	14.1	14.1	-	17.3	17.3	-
Gasabo	21.6	19.2	83.3	13.5	13.5	41.9	18.9	17.5	74.2
Kicukiro	30.0	28.4	100.0	14.7	14.7	75.0	28.8	26.7	96.3
Nyanza	17.6	16.3	100.0	12.0	12.0	100.0	16.9	15.1	100.0
Gisagara	26.7	23.4	95.5	21.6	21.6	68.6	28.7	20.7	96.5
Nyaruguru	31.8	30.1	90.0	25.3	25.3	84.6	28.6	27.8	89.2
Huye	22.2	17.8	100.0	15.4	15.4	76.5	20.6	17.3	99.0
Nyamagabe	18.1	17.9	100.0	9.0	9.0	66.7	17.0	16.9	75.6
Ruhango	15.3	13.7	100.0	10.1	10.1	52.2	13.8	11.5	98.4
Muhanga	13.5	11.9	100.0	6.0	6.0	100.0	8.7	7.2	100.0
Kamonyi	21.1	19.4	91.7	17.6	17.6	93.3	16.3	14.6	97.2
Karongi	18.7	18.5	100.0	16.7	16.7	50.0	16.9	16.9	93.4
Rutsiro	18.4	18.4	-	17.6	17.6	-	19.4	19.4	-
Rubavu	44.0	43.6	75.0	27.1	27.1	33.3	41.8	41.8	50.0
Nyabihu	40.2	40.2	-	28.4	28.4	-	38.8	38.8	-
Ngororero	13.2	13.2	-	8.9	8.9	-	14.1	14.1	-
Rusizi	11.2	9.6	90.0	7.2	7.2	60.0	12.7	8.8	88.5
Nyamasheke	9.4	7.9	100.0	4.5	4.5	88.9	7.5	6.5	99.8
Rulindo	30.6	30.0	80.0	19.9	19.9	68.4	27.7	27.5	93.0
Gakenke	18.7	18.7	-	15.9	15.9	-	17.2	17.2	-
Musanze	42.9	42.9	-	34.3	34.3	-	44.3	44.3	-
Burera	38.7	38.7	-	30.0	30.0	-	37.0	37.0	-
Gicumbi	21.7	21.3	100.0	16.5	16.5	50.0	19.0	19.0	72.6
Rwamagana	31.8	29.5	75.9	20.2	20.2	35.7	27.5	26.4	74.9
Nyagatare	19.0	13.6	84.4	9.2	9.1	71.2	15.5	12.7	73.8
Gatsibo	22.3	20.3	89.5	13.1	13.1	53.8	23.5	20.2	98.6
Kayonza	16.5	12.2	91.3	9.2	9.2	43.6	15.8	12.0	92.6
Kirehe	17.0	15.8	90.0	10.4	10.4	87.0	16.9	13.7	97.9
Ngoma	16.5	14.5	93.8	11.2	11.2	49.0	17.1	15.5	91.5
Bugesera	16.2	13.3	64.9	12.1	12.1	42.4	14.2	11.7	76.2
Total	22.4	20.9	87.2	16.0	16.0	53.8	20.2	18.5	90.2

Source: NISR, SAS 2021

Table 27: Percentage of plots by type of pesticides, per district in Season A 2021

District	Dithane	Ridomil	Dimethoate	Cypermethrin	Dursiban	Rocket	Beam	Others
Nyarugenge	26.8	-	15.9	8.5	-	42.7	-	6.1
Gasabo	16.0	2.1	5.6	6.3	-	49.3	1.4	19.3
Kicukiro	5.4	1.1	3.2	8.6	-	48.4	1.1	32.2
Nyanza	10.1	0.8	0.8	11.8	-	68.9	3.4	4.2
Gisagara	4.8	-	5.5	12.1	-	68.5	5.5	3.6
Nyaruguru	18.5	-	-	9.2	-	67.7	-	4.6
Huye	3.5	-	0.7	18.8	-	57.6	9.7	9.7
Nyamagabe	36.0	2.0	-	38.0	-	24.0	-	-
Ruhango	8.3	2.1	-	9.4	-	74.0	6.3	-0.1
Muhanga	12.0	2.7	6.7	9.3	1.3	44.0	4.0	20.0
Kamonyi	19.1	4.0	5.2	6.9	-	54.9	1.2	8.7
Karongi	21.2	-	28.3	14.1	-	28.3	-	8.1
Rutsiro	55.2	1.0	1.9	17.1	-	9.5	-	15.3
Rubavu	34.4	24.9	19.9	17.1	-	3.5	-	0.2
Nyabihu	35.5	21.4	17.1	18.8	-	5.5	-	1.7
Ngororero	35.5	7.9	1.3	13.2	-	38.2	-	3.9
Rusizi	17.6	1.9	24.1	19.4	-	26.9	1.9	8.2
Nyamasheke	8.3	3.3	8.3	33.3	-	33.3	5.0	8.5
Rulindo	22.9	2.5	3.0	9.0	-	51.7	0.5	10.4
Gakenke	12.8	5.7	1.4	25.5	-	52.5	-	2.1
Musanze	32.1	5.0	10.4	9.4	-	39.9	-	3.2
Burera	30.7	10.4	7.4	28.2	-	22.7	-	0.6
Gicumbi	45.7	1.8	3.7	3.0	-	37.2	-	8.6
Rwamagana	11.6	1.2	5.1	14.0	-	51.0	3.9	13.2
Nyagatare	6.9	1.3	8.2	11.1	-	30.5	4.6	37.4
Gatsibo	13.1	2.0	9.0	6.6	-	54.5	2.9	11.9
Kayonza	17.9	2.2	10.7	9.4	-	24.1	3.1	32.6
Kirehe	6.7	1.8	7.3	17.6	-	47.3	6.1	13.2
Ngoma	10.0	-	8.0	11.3	-	60.0	4.0	6.7
Bugesera	7.8	1.7	5.6	14.7	-	46.8	6.9	16.5
National	20.9	5.9	8.6	14.3	-	37.8	2.2	10.3

Source: NISR, SAS 2021

Table 28: Percentage of farmers who practiced agricultural practices in Season A 2021

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	85.7	85.7	-	0.5	0.5	-	11.0	11.0	-	48.5	48.5	-
Gasabo	89.7	89.6	91.7	1.2	0.3	25.0	13.7	12.0	58.3	43.1	42.3	66.7
Kicukiro	63.4	63.0	80.0	1.9	1.0	40.0	8.0	7.2	40.0	45.5	44.8	80.0
Nyanza	93.6	93.5	100.0	0.2	-	12.5	18.2	17.3	75.0	29.3	29.4	25.0
Gisagara	90.8	90.4	100.0	0.2	0.2	-	17.5	16.0	50.0	34.6	35.6	8.7
Nyaruguru	98.6	98.5	100.0	0.3	0.3	-	9.8	9.5	20.0	40.9	40.1	70.0
Huye	93.8	93.5	100.0	-	-	-	20.0	16.7	80.0	34.2	34.5	29.2
Nyamagabe	95.2	95.2	100.0	0.5	0.5	-	6.0	6.1	-	33.8	33.7	100.0
Ruhango	96.0	95.9	100.0	0.6	0.6	-	15.3	13.9	88.9	28.3	27.9	55.6
Muhanga	98.0	98.0	100.0	0.7	0.7	-	5.2	4.3	50.0	21.0	20.6	50.0
Kamonyi	92.3	92.4	91.7	0.4	0.4	-	9.4	8.0	66.7	35.8	35.8	33.3
Karongi	96.6	96.6	100.0	-	-	-	5.2	5.2	-	35.1	34.9	100.0
Rutsiro	96.6	96.6	-	0.3	0.3	-	0.3	0.3	-	36.4	36.4	-
Rubavu	93.6	93.5	100.0	0.3	0.3	-	0.3	0.3	-	37.4	37.0	75.0
Nyabihu	97.5	97.5	-	-	-	-	0.5	0.5	-	49.8	49.8	-
Ngororero	92.2	92.2	-	-	-	-	2.2	2.2	-	21.3	21.3	-
Rusizi	91.4	91.4	90.0	1.4	1.2	10.0	9.6	8.4	70.0	58.2	58.4	50.0
Nyamasheke	90.9	91.0	85.7	0.2	0.2	-	5.4	4.3	71.4	56.8	57.1	33.3
Rulindo	98.9	98.9	100.0	0.5	0.5	-	20.0	19.6	60.0	27.0	26.9	40.0
Gakenke	97.3	97.3	-	0.2	0.2	-	6.0	6.0	-	41.6	41.6	-
Musanze	95.5	95.5	-	0.2	0.2	-	0.8	0.8	-	34.1	34.1	-
Burera	93.7	93.7	-	0.4	0.4	-	1.0	1.0	-	13.9	13.9	-
Gicumbi	98.1	98.1	100.0	0.2	0.2	-	10.1	10.1	-	30.9	30.5	100.0
Rwamagana	95.9	95.7	100.0	1.4	0.4	20.7	11.0	8.3	62.1	45.9	44.7	72.4
Nyagatare	66.6	64.6	91.1	7.1	2.4	64.4	10.0	6.6	51.1	42.7	42.1	52.2
Gatsibo	96.4	96.3	100.0	3.0	1.4	57.9	8.8	8.0	36.8	52.7	52.5	63.2
Kayonza	70.1	68.4	100.0	2.6	0.5	39.1	11.5	8.2	69.6	36.0	35.6	45.5
Kirehe	81.2	81.4	70.0	0.8	0.5	20.0	10.4	9.2	90.0	46.3	46.6	25.0
Ngoma	89.9	89.7	100.0	0.6	0.2	18.8	9.0	7.8	56.3	47.5	47.8	37.5
Bugesera	80.5	80.9	73.0	0.8	0.2	10.8	15.1	13.0	51.4	45.8	45.2	56.8
National	91.0	90.9	93.2	0.9	0.5	22.1	9.2	8.1	57.3	38.4	38.2	48.6

Source: NISR, SAS 2021

Table 29: Percentage of plots by types of irrigation used in 2021 Season A

District	Modern irrigation					Traditional techniques
	Surface irrigation	Flood irrigation	Drip irrigation	Sprinkler irrigation	Pivot irrigation	
Nyarugenge	13.3	-	-	-	-	86.7
Gasabo	10.7	10.7	-	14.3	-	64.3
Kicukiro	64.7	5.9	-	-	5.9	23.5
Nyanza	19.1	19.1	-	-	-	61.9
Gisagara	7.1	46.4	-	-	-	46.4
Nyaruguru	40.0	-	-	-	-	60.0
Huye	2.7	51.4	-	-	-	46.0
Nyamagabe	-	42.9	-	-	-	57.1
Ruhango	33.3	30.0	-	-	-	36.7
Muhanga	-	21.4	-	-	-	78.6
Kamonyi	7.4	7.4	-	-	-	85.2
Karongi	-	-	-	-	-	100.0
Rutsiro						
Rubavu						
Nyabihu	-	-	-	-	-	100.0
Ngororero	-	-	-	-	-	100.0
Rusizi	-	66.7	-	-	-	33.3
Nyamasheke	22.2	33.3	-	-	-	44.4
Rulindo	43.9	2.4	-	4.9	-	48.8
Gakenke	11.1	22.2	-	-	-	66.7
Musanze	-	-	-	-	-	100.0
Burera	-	-	-	-	-	100.0
Gicumbi	5.9	-	-	-	-	94.1
Rwamagana	14.1	23.4	25.0	1.6	-	35.9
Nyagatare	33.3	21.2	-	10.6	22.7	12.1
Gatsibo	42.3	15.4	-	3.9	-	38.5
Kayonza	47.6	11.1	-	17.5	4.8	19.1
Kirehe	14.6	31.7	-	12.2	24.4	17.1
Ngoma	5.9	41.2	23.5	-	-	29.4
Bugesera	6.5	31.2	6.5	32.3	-	23.7
National	20.8	22.8	3.7	8.7	4.1	40.0

Source: NISR, SAS 2021

Table 30: Percentage of plots by source of water used and district in 2021 Season A

District	Rainwater	Water treatment	Underground	Lake / streams	Water catchment
Nyarugenge	-	20.0	33.3	46.7	-
Gasabo	3.5	10.3	37.9	48.3	-
Kicukiro	-	15.0	35.0	25.0	25.0
Nyanza	-	-	66.7	19.1	14.3
Gisagara	-	6.9	44.8	44.8	3.5
Nyaruguru	-	-	-	100.0	-
Huye	-	5.4	10.8	62.2	21.6
Nyamagabe	-	-	57.1	42.9	-
Ruhango	2.7	2.7	62.2	29.7	2.7
Muhanga	-	7.1	42.9	35.7	14.3
Kamonyi	-	-	25.8	64.5	9.7
Karongi	-	-	33.3	66.7	-
Rutsiro	-	-	-	-	-
Rubavu	-	-	-	-	-
Nyabihu	-	-	100.0	-	-
Ngororero	-	-	50.0	25.0	25.0
Rusizi	-	8.3	-	91.7	-
Nyamasheke	-	11.1	22.2	66.7	-
Rulindo	2.4	7.3	19.5	48.8	22.0
Gakenke	-	-	66.7	33.3	-
Musanze	-	50.0	-	50.0	-
Burera	-	-	-	100.0	-
Gicumbi	-	17.7	-	82.4	-
Rwamagana	2.9	11.8	14.7	38.2	32.4
Nyagatare	1.5	4.6	3.0	75.8	15.2
Gatsibo	-	3.9	26.9	50.0	19.2
Kayanza	-	-	19.7	68.2	12.1
Kirehe	4.1	2.0	18.4	61.2	14.3
Ngoma	5.9	17.7	35.3	11.8	29.4
Bugesera	2.0	1.0	28.0	58.0	11.0
National	1.5	5.5	25.6	53.7	13.6

Source: NISR, SAS 2021

Table 31: Percentage of plots by type of anti-erosion activities and district in 2021 Season A

District	Ditches	Trees/Windbreak/ shelterbelt	Bench terraces	Progressive terraces	Cover plants	Water drainage	Mulching	Beds/ridges	Water channels	Others
Nyarugenge	11.2	20.2	-	3.9	50.1	-	4.3	8.4	1.9	-
Gasabo	2.3	10.1	0.1	19.2	57.6	1.1	1.1	4.1	4.5	0.0
Kicukiro	8.8	20.6	1.9	24.2	15.5	0.1	6.0	5.7	17.4	-
Nyanza	8.6	4.9	2.6	5.3	48.8	0.0	2.7	11.8	15.3	-
Gisagara	5.5	2.4	2.3	20.8	45.5	0.7	0.0	3.7	19.1	-
Nyaruguru	14.6	7.9	2.7	3.8	54.0	5.1	1.3	0.5	10.1	-
Huye	10.4	5.6	2.2	20.2	48.5	0.1	1.1	0.7	11.2	-
Nyamagabe	4.3	2.0	7.7	18.9	56.9	0.6	1.9	0.4	7.4	-
Ruhango	4.0	5.8	0.4	7.6	60.3	0.2	1.3	6.7	13.7	-
Muhanga	3.3	0.6	3.3	4.9	77.4	0.0	3.8	3.4	3.4	-
Kamonyi	10.3	2.3	0.8	8.0	58.1	0.0	3.0	3.6	13.9	-
Karongi	17.9	3.0	2.5	8.0	59.8	3.0	0.7	0.7	4.4	-
Rutsiro	6.8	7.5	6.0	2.8	65.4	1.4	6.2	0.8	3.1	-
Rubavu	1.6	13.6	7.3	0.7	27.7	-	-	40.5	8.6	-
Nyabihu	0.2	1.5	10.6	15.8	55.3	0.1	0.1	15.2	0.8	0.4
Ngororero	8.2	2.5	4.0	6.5	69.9	-	1.1	1.8	6.0	-
Rusizi	34.5	8.7	0.5	7.3	41.8	0.1	2.3	2.0	2.9	-
Nyamasheke	9.2	13.6	5.5	6.0	55.8	0.3	2.6	0.3	6.4	0.3
Rulindo	1.9	4.3	8.7	15.6	57.6	0.4	1.0	2.1	8.5	0.0
Gakenke	2.7	1.5	4.3	10.0	69.2	0.1	4.2	2.6	5.4	-
Musanze	1.4	1.4	7.4	2.0	41.4	-	0.6	42.5	3.1	-
Burera	0.4	1.4	3.4	6.5	59.3	1.0	0.1	23.8	4.1	-
Gicumbi	0.3	0.5	12.2	20.9	57.4	-	0.9	0.0	7.9	-
Rwamagana	5.9	9.8	3.2	9.4	63.1	1.1	5.0	0.8	1.8	0.0
Nyagatare	6.0	6.7	1.6	10.1	52.6	0.6	8.0	3.9	10.5	0.0
Gatsibo	2.5	12.8	0.3	10.1	58.1	0.8	8.0	3.1	4.4	-
Kayanza	1.6	4.2	13.6	0.1	47.8	13.4	6.7	1.3	11.3	-
Kirehe	6.5	3.5	0.7	4.7	68.4	0.2	11.3	0.9	3.8	-
Ngoma	1.3	3.8	3.9	7.1	67.6	0.1	7.0	4.6	4.4	0.4
Bugesera	7.9	14.0	-	21.3	38.7	0.5	2.1	9.4	6.0	-
National	6.7	5.0	4.5	10.0	57.2	0.9	2.5	6.0	7.2	0.0

Source: NISR, SAS 2021

Table 32 : Percentage of plots by degree of erosion per district in Season A of 2021

District	Severe (Rill erosion, Gully erosion, Mass movement/Landslides)	Moderate (Diffuse overland flow erosion, overland flow erosion)	Low (wind erosion)	Very Low (splash erosion)
Nyarugenge	0.0	13.7	22.7	63.6
Gasabo	3.8	2.1	25.2	68.9
Kicukiro	0.2	14.9	10.0	74.8
Nyanza	2.0	33.8	26.1	38.1
Gisagara	0.1	0.8	21.2	77.9
Nyaruguru	-	5.0	59.4	35.6
Huye	-	12.9	20.8	66.3
Nyamagabe	1.1	2.3	4.7	91.9
Ruhango	1.1	4.7	55.8	38.4
Muhanga	0.5	7.6	55.6	36.3
Kamonyi	4.6	6.4	64.3	24.6
Karongi	2.8	11.0	22.8	63.4
Rutsiro	1.7	18.1	33.9	46.4
Rubavu	7.1	10.1	17.8	65.0
Nyabihu	1.6	30.4	49.8	18.2
Ngororero	10.9	30.6	5.1	53.4
Rusizi	3.8	10.9	51.0	34.3
Nyamasheke	0.1	15.4	16.3	68.2
Rulindo	1.0	29.7	44.9	24.5
Gakenke	0.7	12.2	62.2	24.9
Musanze	2.1	10.0	30.4	57.5
Burera	0.2	2.7	7.6	89.5
Gicumbi	2.0	8.6	26.5	63.0
Rwamagana	5.3	1.6	40.9	52.2
Nyagatare	1.0	7.5	19.7	71.9
Gatsibo	1.1	3.4	19.0	76.5
Kayonza	0.2	0.8	11.5	87.5
Kirehe	0.2	10.4	22.4	67.0
Ngoma	0.1	6.1	23.6	70.2
Bugesera	0.9	1.5	40.0	57.7
National	2.0	11.2	31.9	55.0

Source: NISR, SAS 2021

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