



The Republic of Rwanda



SEASONAL AGRICULTURAL SURVEY

SEASON B 2021 REPORT

October 2021

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National Institute of Statistics of Rwanda

Po. Box 6139 Kigali Rwanda

Website: www.statistics.gov.rw

Email: info@statistics.gov.rw

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

The survey data are supplemented by administrative records on tea and coffee from the National Agriculture Export Board (NAEB). These data are collected through routine activities during monitoring of coffee and tea production. Other agriculture related information including total of quantity of agricultural inputs used, total agricultural exports, crop varieties grown, crop intensification program among others is obtained from MINAGRI working closely with 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 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 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. 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 2021 Seasonal Agricultural Survey (SAS), Season B 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 among others).

II. SURVEY DESIGN

2.1. Sample frame design

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

2.1.1. Land classification

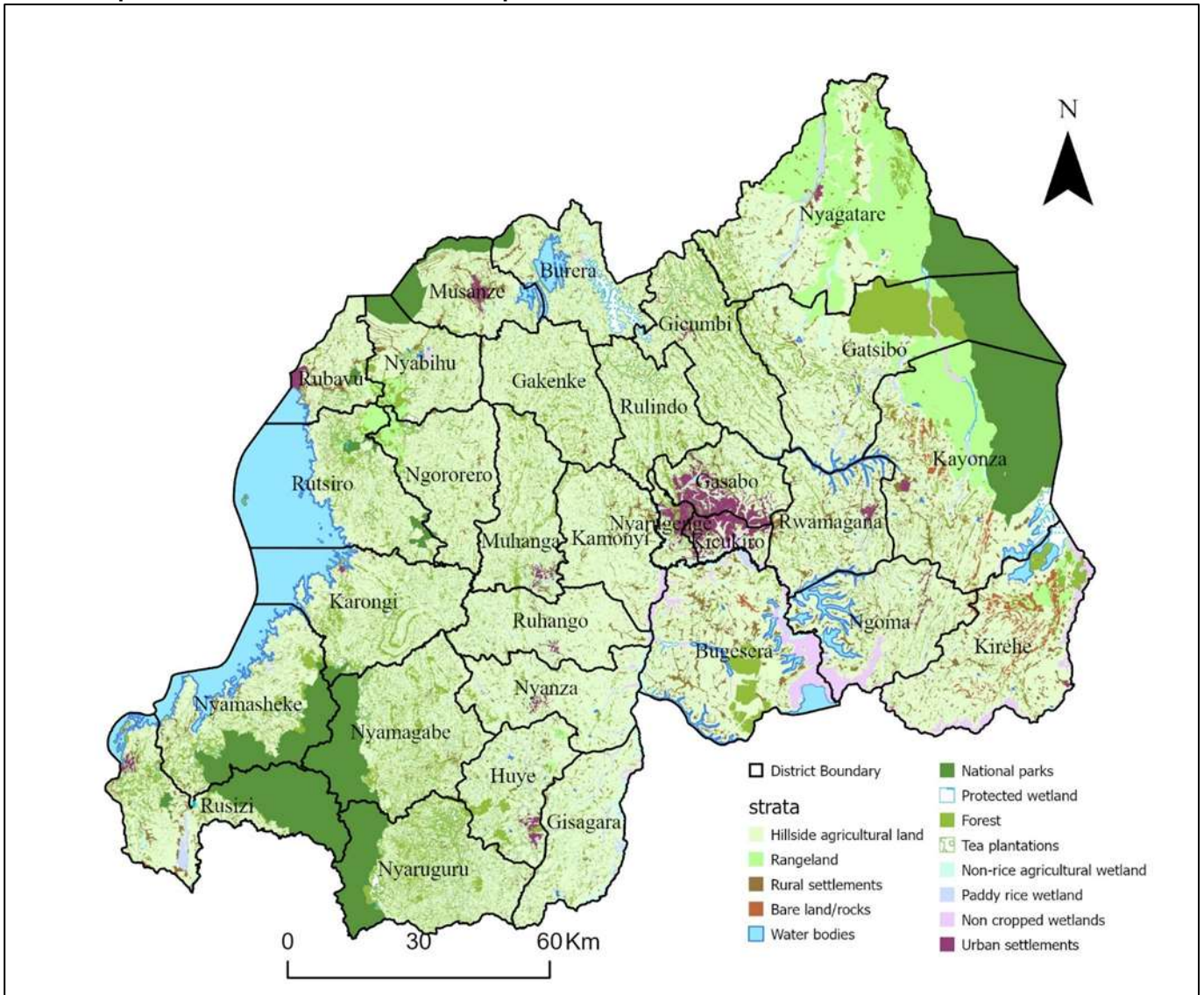
Land classification was done using Rwanda land cover map which is a combination of different layers available in the country, plus a photo interpretation of a series (2010 to 2020) of high-resolution satellite images from Worldview. The Rwanda land cover map has been divided into 13 land cover classes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

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, 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

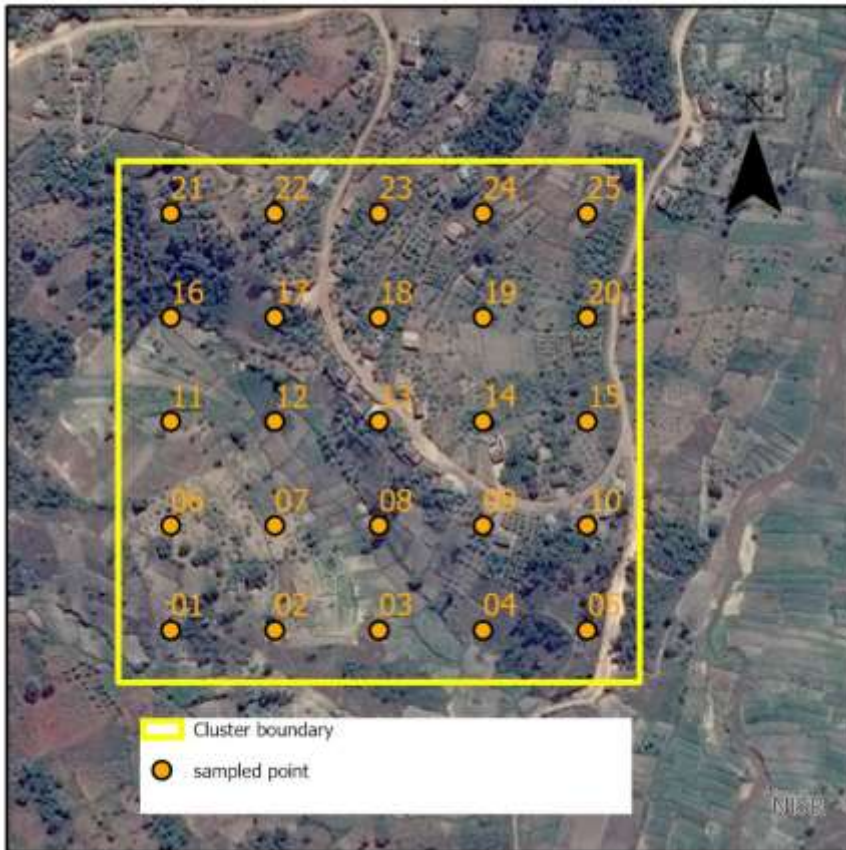
District	Stratum				Total
	Dominant hill crop land	Dominant wetland crops	Dominant rangeland	Mixed stratum	
Nyarugenge	12	6	-	2	20
Gasabo	22	4	-	3	29
Kicukiro	13	5	-	2	20
Nyanza	37	4	-	2	43
Gisagara	33	5	-	3	41
Nyaruguru	25	3	-	7	35
Huye	27	3	-	5	35
Nyamagabe	36	2	-	6	44
Ruhango	36	3	-	3	42
Muhanga	33	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
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 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 128 enumerators and 29 team leaders served in the field data collection after a refresher training conducted by NISR headquarter staff. Throughout the data collection activities, higher-level supervision of staff from NISR was conducted to ensure data quality.

2.2.1. Time frame

The planting for season B starts in early March, the harvesting goes up to June, data collection started from 2nd May 2021 to 30th June 2021 covering 1,200 segments and 330 large scale farmers' holdings across the country, while the analysis and reporting is completed by the end of September. During the farmer's interviews, the survey covered 13,807 small scale farmers and 290 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: agricultural area includes arable land, land under permanent³ 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.

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.

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

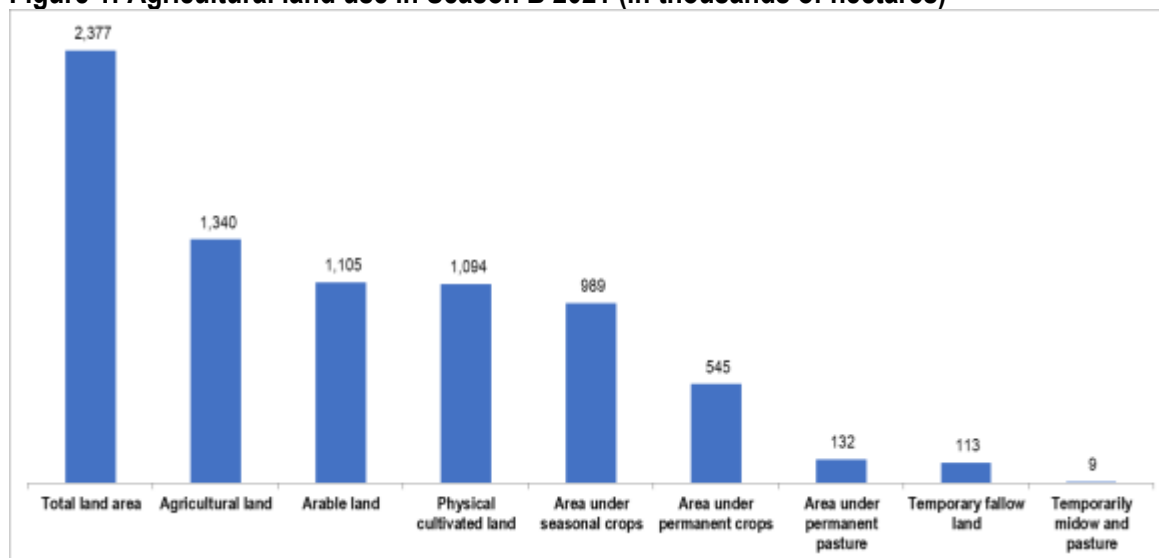
This section highlights key results for SAS 2021 Season B related to crop area (physical land use, cultivated area, and harvested area), yield, production, agricultural inputs, and agricultural practices in Rwanda.

3.1. Agricultural land use

3.1. Agricultural land use

The total country land area is estimated at 2.377 million of hectares for which 1.340 million hectares (56.4% of total country land) is used for agriculture. Out of the total agricultural land, 1 million hectares was used for Seasonal crops in season B, nearly 0.6 million hectares are area under permanent crops, while 0.132 million ha under permanent pasture. (See district details in Table 6).

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



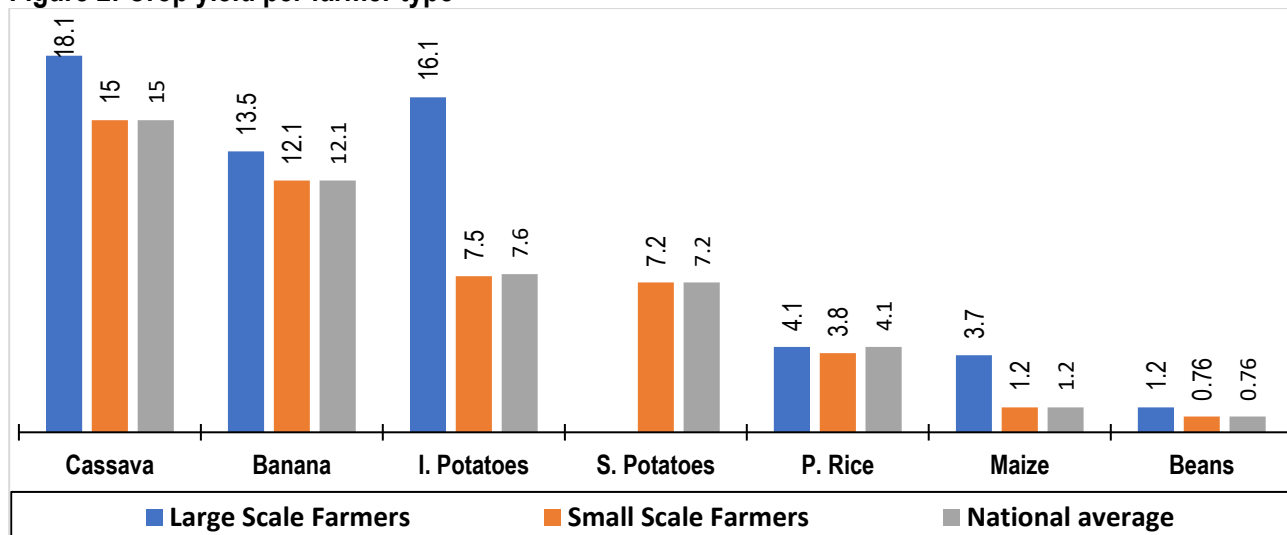
Source: NISR, SAS 2021

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 80,570 ha, this is 10 percent increase when compared to 2020 season B estimates. The total production was estimated at 104,041 MT, an increase of approximately 10 percent compared to 2020 season B. In this period the national average yield was 1.3 tons per hectare, with an average yield of 1.2 and 3.7 for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8, 9, 10, 11 and 12).
- **Sweet potato:** The cultivated area for sweet potato was estimated at 87,762 ha, an increase of 4 percent when compared to 2020 season B. Sweet potato production was estimated at 632,614 MT, an increase of 3 percent when compared to 2020 season B production estimates. The national average yield was 7.2 tons per hectare, with an average yield of 7.2 and 4.8 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8, 9, 10, 11 and 12).
- **Irish potatoes:** The total cultivated area for Irish potatoes was estimated to be 51,595 ha, an increase of 17 percent when compared to 2020 season B estimates. The production was estimated at 393,371 MT, an increase of approximately 12 percent compared to 2020 season B. The average yield of Irish potato was 7.6 tons per hectare, with an average yield of 7.5 and 16.1 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8, 9, 10, 11 and 12).
- **Cassava:** The cultivated area for cassava was estimated at 147,320 ha, a decrease of 23 percent when compared to 2020 season B. The production was 718,584 MT, an increase of 2.5 percent when compared to 2020 season B, while the national average yield of cassava was 15 tons per hectare, with an average yield of 15 and 18.1 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8, 9, 10, 11 and 12).
- **Paddy rice:** The cultivated area for paddy rice was estimated to be 16,302 ha, an increase of 8 percent when compared to 2020 season B. The production was 67,808 MT, an increase of 5.5 percent from the 2020 season B, while the national average yield was 4.2 tons per hectare, with an average yield of 3.8 and 4.1 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8, 9, 10, 11 and 12).
- **Banana:** The total cultivated area for Banana was estimated at 202,807 ha, a decrease of 2 percent when compared to 2020 season B. The production was estimated at 991,501 MT, an increase of 6 percent when compared to 2020 season B, while the average yield of banana was 12.1 tons per hectare, with an average yield of 12.1 and 13.5 tons per hectare for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8, 9, 10, 11 and 12).
- **Beans:** Beans cultivated area was estimated at 301,658 ha, an increase of 7 percent compared to 2020 season B. Bean's production was estimated at 229,559 MT, an increase of 9.6 percent change from 2020 season B estimates. The national average yield of beans was 761 kilograms per hectare, with an average yield of 759 and 1,195 kilograms for small scale farmers and large-scale farmers respectively (See district details in Tables 5, 8, 9, 10, 11 and 12).

Figure 2: Crop yield per farmer type



Source: NISR, SAS 2021

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

Crop/crop groups	Cultivated Crop area (Ha)		Harvested Crop area (Ha)		Production (MT)		Yield (MT/ha)	
	2020 B	2021 B	2020 B	2021 B	2020 B	2021 B	2020 B	2021 B
Cereals	233,663	240,314	233,663	240,314				
Maize	72,918	80,570	72,918	80,570	94,634	104,041	1.3	1.3
Sorghum	136,124	133,033	136,124	133,033	128,258	134,331	0.9	1.0
Paddy rice	15,077	16,302	15,077	16,302	64,279	67,808	4.3	4.2
Wheat	8,122	8,749	8,122	8,749	8,673	9,184	1.1	1.0
Other cereals	1,422	1,660	1,422	1,660	1,540	1,600	1.1	1.0
Tubers and Roots	335,216	301,765	189,569	202,211				
Cassava	192,156	147,320	46,509	47,837	701,037	718,584	15.1	15.0
Sweet potato	84,545	87,762	84,545	87,762	611,425	632,614	7.2	7.2
Irish potato	43,950	51,595	43,950	51,595	352,441	393,371	8.0	7.6
Taro & Yams	14,565	15,088	14,565	15,017	102,628	107,037	7.0	7.1
Banana	207,635	202,807	79,107	82,137	931,990	991,501	11.8	12.1
Cooking banana	62,054	71,262	22,089	24,193	410,259	439,405	18.6	18.2
Dessert banana	30,911	37,668	11,337	12,174	138,090	142,487	12.2	11.7
Banana for beer	114,670	93,877	45,681	45,770	383,641	409,609	8.4	8.9
Legumes and Pulses	333,599	356,288	333,599	356,213				
Beans	283,104	301,658	283,104	301,584	209,383	229,559	0.7	0.8
Bush bean	189,488	199,864	189,488	201,783	125,425	138,659	0.7	0.7
Climbing bean	93,616	101,795	93,616	99,801	83,958	90,899	0.9	0.9
Pea	6,229	7,521	6,229	7,521	5,668	6,549	0.9	0.9
Groundnut	21,292	21,534	21,292	21,534	10,542	10,763	0.5	0.5
Soybean	22,974	25,574	22,974	25,574	10,955	12,194	0.5	0.5
Vegetables and Fruits	23,763	79,222	60,793	53,284	191,102	198,275		
Vegetables	15,939	15,574	15,945	15,574	166,272	172,936	10.4	11.1
Fruits	7,824	8,371	4,978	4,429	24,830	25,340	5.0	5.7
Fodder crops	12,010	8,260	11,665	8,249	114,825	109,181	9.1	13.2
Other crops	50,895	47,017	28,205	25,032	123,012	124,188	4.1	5.0
Total Developed Crop area	1,196,782	1,180,396	896,733	934,159	(NA)	(NA)	(NA)	(NA)

Source: NISR, SAS, 2021

3.3. Use of inputs

The survey 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

Overall, the results reveal that 17.2 percent of farmers used improved seeds during 2021 Season B. In regard to farmer type⁴, 15.9 percent of small-scale farmers (SSF) and 78.8 percent of Large-scale farmers (LSF) used improved seeds (See Figure 3). The results show that the major source of improved seed was agro-dealers (38.9 percent) and NGO/companies (30.3 percent), (See details in Tables, 17, 18, 19 and 20).

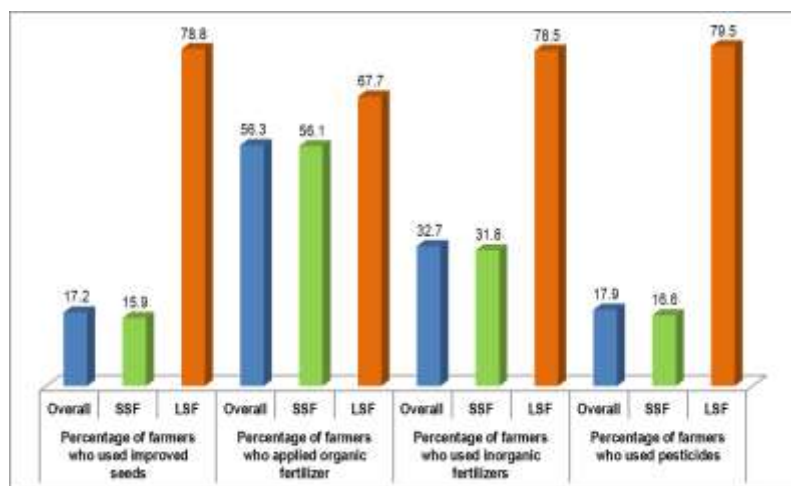
3.3.2. Use of fertilizers

Results show that 56.3 percent of farmers applied organic fertilizer in their farms. According to farmer type, 56.1 percent of small-scale farmers and 67.7 percent of Large-scale farmers applied organic fertilizer. Besides, 32.7 percent of famers applied inorganic fertilizer. According to farmer type, 31.8 percent of small-scale farmers and 78.5 percent of Large-scale farmers applied inorganic fertilizer (See figure 3). Regarding the source of fertilizers, agro-dealers and NGOs/companies account for over 87.1 percent of inorganic fertilizers provisions. DAP, UREA and NPK17-17-17 are inorganic fertilizers mostly used in 2021 Season B with 42.1 percent, 33.1 percent and 18.5 percent respectively (See details in Tables 7,21,22,23, 24 and 25).

3.3.3. Use of pesticides

The survey results revealed that 17.9 percent of farmers applied pesticides. According to farmer type, 16.6 percent of small-scale farmers and 79.5 percent of Large-scale farmers applied pesticides respectively (See figure 3). Dithane, Rocket, and Cypermethrin were the most used pesticides, with 28.8 percent of farmers, 24.6 percent and 15.8 percent respectively (See details in Tables 26 and 27).

Figure 3: Use of inputs in Season B 2021 (in percentage)



Source: NISR, SAS 2021

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

3.4. Agricultural practices

The survey covered information related to agricultural practices used by farmers on farm (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 B.

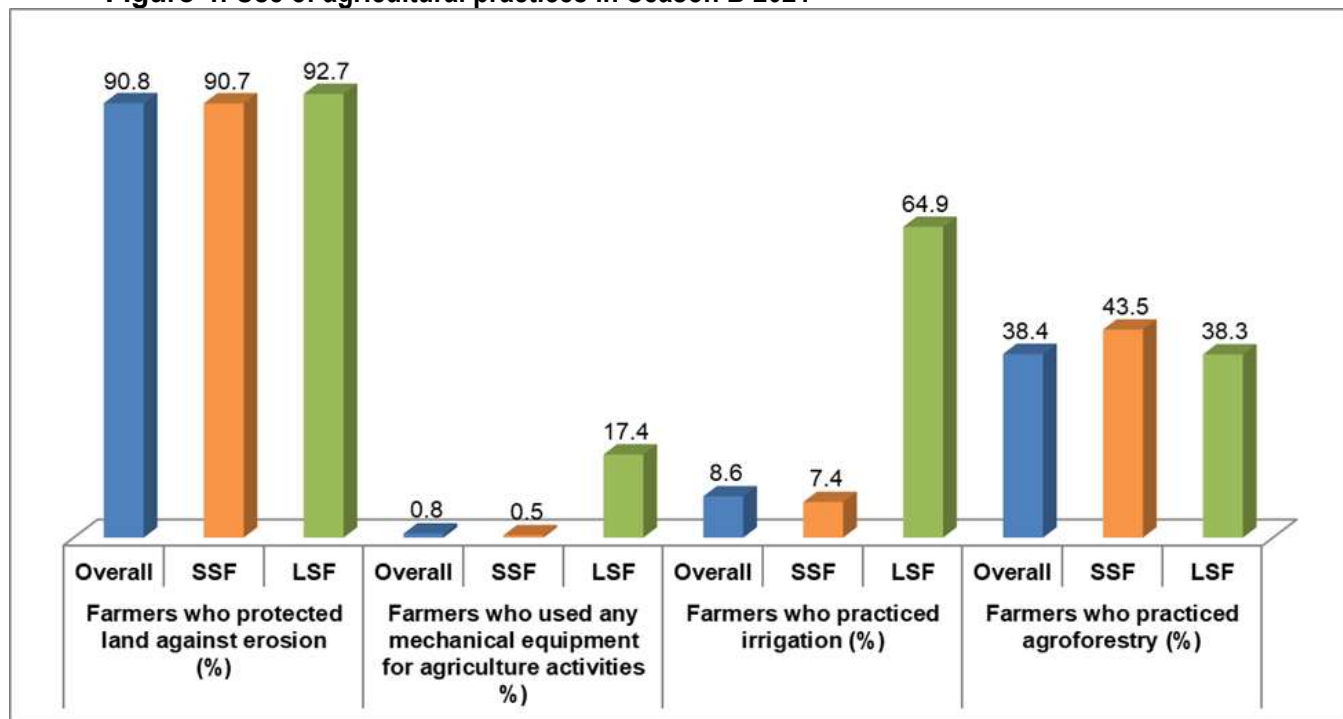
3.4.1. Irrigation practices

The survey results revealed that 8.3 percent of farmers practiced irrigation, whereby 7.2 percent of small-scale farmers and 64.9 percent of large-scale farmers were involved. Modern irrigation account for around 67.8 percent practices by farmers. Lakes/stream and underground water were the most used sources of water for irrigation with 51.2 percent and 27.9 percent respectively (See details in Tables 7,28,29 and 30).

3.4.2. Erosion control measures

In season B of 2021, 90.8 percent of farmers practiced anti-erosion activities where 90.7 percent of small-scale farmers and 92.7 percent were large-scale farmers protected their land against erosion. Cover plants was the most used type of anti-erosion with 58.7 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 56.6 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 38.3 percent of farmers practiced agroforestry.

Figure 4: Use of agricultural practices in Season B 2021



Source: NISR, SAS 2021

IV. MAIN TABLES

Table 6: Season B 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	5.1	38.9	4.5	4.8	4.2	2.3	0.3	0.1	0.0
Gasabo	42.7	19.5	45.8	18.1	15.6	14.2	6.4	3.8	0.4	0.1
Kicukiro	16.6	5.4	32.4	4.6	4.5	4.2	2.3	0.4	0.1	0.5
Nyanza	67.1	34.4	51.3	33.4	29.1	28.3	9.0	5.1	0.3	0.2
Gisagara	67.3	38.2	56.8	36.7	33.0	31.5	11.8	5.2	0.1	-
Nyaruguru	100.7	32.2	32.0	29.1	26.9	23.6	9.4	5.4	0.6	-
Huye	58.1	28.7	49.4	27.7	26.1	25.1	10.5	2.6	0.2	-
Nyamagabe	109.1	43.2	39.6	38.6	37.9	33.6	13.0	5.0	0.3	0.2
Ruhango	62.6	43.3	69.1	41.1	39.8	37.6	10.7	3.5	0.6	-
Muhanga	64.4	40.0	62.1	35.3	34.9	30.1	17.9	5.1	0.5	-
Kamonyi	65.8	42.1	64.0	37.5	39.3	34.7	18.2	2.8	0.3	-
Karongi	78.9	41.8	53.0	36.0	34.3	28.5	13.4	7.5	0.5	-
Rutsiro	66.0	40.1	60.8	29.6	27.3	22.8	17.4	6.8	0.3	6.1
Rubavu	33.8	23.3	68.8	21.7	21.5	20.1	6.1	1.5	0.5	0.3
Nyabihu	53.6	36.5	68.1	32.1	26.8	26.3	6.2	5.6	0.6	4.1
Ngororero	67.5	38.2	56.6	32.2	29.5	26.4	15.8	5.8	0.5	2.8
Rusizi	91.4	34.8	38.1	32.6	33.6	31.2	12.1	1.2	0.0	-
Nyamasheke	94.8	35.4	37.4	27.0	34.1	25.5	16.9	1.3	0.1	-
Rulindo	56.7	39.8	70.2	36.0	35.6	32.5	18.5	3.4	0.1	0.8
Gakenke	70.1	47.9	68.3	42.5	42.9	37.6	19.3	4.9	0.2	0.1
Musanze	50.9	25.5	50.0	24.8	22.5	21.8	3.3	2.9	0.3	-
Burera	58.4	36.9	63.2	36.3	33.8	33.5	4.2	2.9	0.2	0.2
Gicumbi	82.5	51.3	62.2	48.5	47.2	44.2	16.8	4.0	0.8	-
Rwamagana	65.3	50.8	77.7	42.6	46.6	41.3	27.8	1.3	0.5	2.8
Nyagatare	191.1	145.9	76.3	72.9	75.9	71.3	93.7	1.6	0.0	68.3
Gatsibo	153.6	71.9	46.8	54.9	59.9	51.1	37.0	3.6	0.1	8.4
Kayonza	179.2	91.3	50.9	59.9	58.3	54.0	45.7	5.8	0.1	27.2
Kirehe	114.9	65.0	56.5	54.0	56.7	51.5	24.5	2.5	-	5.7
Ngoma	80.5	55.3	68.6	48.4	52.1	45.2	27.2	2.9	0.5	0.2
Bugesera	120.4	76.1	63.2	65.8	63.6	57.3	28.0	8.6	0.7	4.0
National	2,377	1,340	56.4	1,105	1,094	989	545	113	9	132

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	51	2,596	2,596	443	2,231
Gasabo	300	16,321	10,494	3,274	8,446
Kicukiro	97	1,940	2,866	1,473	1,729
Nyanza	696	28,937	11,448	4,707	10,608
Gisagara	3,339	22,682	14,622	9,561	12,181
Nyaruguru	379	29,932	12,683	11,577	16,842
Huye	984	25,259	12,831	4,441	13,781
Nyamagabe	122	36,683	12,954	11,847	22,646
Ruhango	1,093	32,598	12,855	4,334	17,057
Muhanga	153	32,151	7,619	4,008	18,961
Kamonyi	348	30,568	12,947	4,271	21,230
Karongi	63	34,325	15,774	7,609	18,253
Rutsiro		28,513	11,303	9,756	15,518
Rubavu		18,250	6,626	11,368	7,640
Nyabihu		26,926	14,825	17,722	16,375
Ngororero		35,260	9,400	11,927	22,692
Rusizi	1,537	22,888	20,620	11,062	15,562
Nyamasheke	371	28,882	22,373	11,446	16,564
Rulindo	154	29,031	8,510	6,927	26,414
Gakenke	146	44,533	21,396	17,997	33,028
Musanze		23,469	8,419	12,717	14,390
Burera		29,829	8,207	10,973	22,715
Gicumbi	95	44,749	11,851	11,951	31,079
Rwamagana	1,335	36,353	22,533	13,914	20,638
Nyagatare	2,383	36,312	23,132	33,545	24,607
Gatsibo	2,238	57,270	33,526	16,293	29,230
Kayonza	2,043	36,044	24,554	17,943	20,005
Kirehe	3,123	41,108	31,183	14,553	18,424
Ngoma	605	34,722	24,007	6,886	15,904
Bugesera	2,321	35,766	27,383	16,419	22,649
National	23,976	903,900	459,535	320,944	537,398

Source: NISR, SAS 2021

Table 8: Season B 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	283	529				756	137	59	37	1,122	266	255	601	1,197	1,167	30	10	80	210	263	47	55	186	4,971
Gasabo	974	3,605	258			2,324	929	696	73	3,128	881	1,106	1,140	4,911	4,620	290	41	248	284	556	32	377	403	18,838
Kicukiro	505	790	26			423	397	48	67	829	298	214	318	1,469	1,449	20	11	62	181	51	35	49	142	5,086
Nyanza	2,095	4,179	598		63	8,432	2,227	355	511	3,725	633	1,180	1,912	10,991	8,841	2,149	29	1,022	1,244	326	165	258	1,113	37,333
Gisagara	2,244	4,387	3,184		174	4,142	2,357	172	202	4,195	854	1,237	2,104	13,445	11,769	1,677	39	743	2,062	332	968	108	471	39,224
Nyaruguru	513	3,677		521		3,675	4,038	1,618	355	2,333	518	713	1,102	4,504	854	3,650	208		823	318	165	496	3,602	26,844
Huye	678	6,436	953		180	5,277	2,477	478	458	3,329	844	969	1,517	7,180	4,582	2,598	62	328	1,716	182	167	158	1,284	31,345
Nyamagabe	797	4,498	19	1,564		4,618	7,637	2,506	332	4,373	334	442	3,597	5,975	1,219	4,757	1,679		815	388	62	256	3,146	38,666
Ruhango	789	3,138	890		150	17,309	2,845	250	543	5,232	529	846	3,857	11,680	8,155	3,524	74	2,129	2,161	313	39	604	1,335	49,480
Muhanga	344	184	148	5		8,532	6,061	101	1,842	12,444	1,762	1,997	8,685	8,597	3,544	5,053	44	148	2,265	419	278	398	693	42,503
Kamonyi	1,673	4,206	197		9	10,717	3,185	632	1,040	10,125	1,463	1,794	6,869	11,637	10,267	1,370	101	539	2,396	856	751	247	1,936	50,245
Karongi	632	2,007		312		8,242	3,649	874	813	7,644	527	793	6,324	7,347	2,338	5,009	406	22	1,788	561	103	407	2,919	37,725
Rutsiro	1,794	34		540		2,102	3,250	3,483	1,110	5,689	861	2,052	2,777	5,075	631	4,444	522		791	182	628	219	2,566	27,986
Rubavu	1,753	439				422	698	6,572	191	2,393	835	254	1,304	3,891	447	3,444	167		150	2,260	90	458	1,324	20,809
Nyabihu	3,652			1,326		293	2,725	7,605	38	805	158	389	258	2,038		2,038	195		40	862	455	526	766	21,325
Ngororero	2,849			1,444		1,740	7,259	1,316	781	7,473	505	1,073	5,894	4,179	738	3,441	308		774	235	22	364	812	29,555
Rusizi	1,241	85	1,482			14,293	1,935	81	605	3,153	962	333	1,857	8,677	6,036	2,641	144	237	719	231	375	50	2,509	35,817
Nyamasheke	615	15	357	48		8,975	3,445		974	4,110	677	512	2,920	5,365	1,243	4,121	182	690	1,563	304	251	60	6,968	33,920
Rulindo	969	4,310	17	74		4,051	3,265	994	160	8,585	1,826	2,150	4,610	10,612	5,375	5,237	215	47	182	530	221	90	1,093	35,413
Gakenke	1,415	552	28	490		3,795	7,607	1,249	1,275	12,750	1,570	3,955	7,225	12,236	1,068	11,168	200	49	754	406	287	170	1,566	44,829
Musanze	2,833	1,076		759		80	1,319	5,335	202	1,441	432	452	557	4,470	305	4,165	289		7	1,129	378	264	815	20,396
Burera	2,525	6,103		1,416		74	2,997	4,273	133	2,182	982	211	989	11,768	692	11,077	601			333	76	192	42	32,713
Gicumbi	2,089	16,871		208		1,305	5,845	2,792	142	7,913	2,580	2,157	3,175	10,833	3,609	7,224	930	298	79	300	417	794	1,167	51,982
Rwamagana	3,870	10,058	474			5,103	1,061	1,952	770	11,215	6,987	2,153	2,075	10,558	10,262	296	131	1,638	218	1,158	520	435	1,556	50,716
Nyagatare	18,329	7,569	1,493		12	4,317	1,748	886	114	12,681	7,434	1,695	3,552	31,180	29,978	1,202	89	3,519	1,076	793	247	11	186	84,249
Gatsibo	8,243	8,856	1,504		71	2,927	1,514	1,855	423	15,138	8,881	2,488	3,769	18,336	16,531	1,805	120	4,537	965	403	187	17	2,636	67,732
Kayonza	6,872	14,887	1,474		234	7,026	1,628	2,495	398	9,649	6,632	1,264	1,754	16,069	15,900	169	129	1,114	223	464	383	98	1,403	64,546
Kirehe	3,035	13,279	950	44	251	3,794	1,508	1,429	905	11,766	7,088	984	3,695	19,733	12,829	6,904	427	649	588	566	67		789	59,781
Ngoma	2,405	4,764	857		477	6,927	1,504	796	268	14,771	9,873	1,705	3,193	19,878	17,818	2,060	125	618	605	357	616	531	1,719	57,219
Bugesera	4,556	6,500	1,393		38	5,648	2,517	692	327	12,615	4,070	2,295	6,250	17,831	17,595	235	42	2,818	895	497	337	568	1,872	59,147
National	80,570	133,033	16,302	8,749	1,660	147,320	87,762	51,595	15,088	202,807	71,262	37,668	93,877	301,658	199,864	101,795	7,521	21,534	25,574	15,574	8,371	8,260	47,017	1,180,396
SSF	78,782	132,985	335	8,700	1,643	147,251	87,751	51,263	15,082	202,665	71,146	37,651	93,868	300,223	198,531	101,692	7,321	21,506	25,162	15,364	8,037	7,721	46,226	1,158,015
LSF	1,788	48	15,967	48	18	70	11	333	6	142	116	18	9	1,435	1,332	103	200	28	412	210	335	540	791	22,381

Source: NISR, SAS, 2021

Table 9: Season B 2021_Harvested area by crop type and district (Ha)

District	Maize	Sorghum	Paddy rice	Wheat	Other cereals	Cassava	Sweet potato	Irish potato	Yams & Taro	Bananas	Cooking banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Pea	Groundnut	Soybean	vegetables	Fruits	Fodder crops	Other crops	Developed land
Nyarugenge	283	529	-	-	-	190	137	59	37	635	93	87	455	1,197	1,167	30	10	80	210	263	14	55	61	3,760
Gasabo	974	3,605	258	-	-	312	929	696	73	1,233	383	388	462	4,911	4,620	290	41	248	284	556	9	371	193	14,691
Kicukiro	505	790	26	-	-	84	397	48	67	411	118	94	198	1,469	1,449	20	11	62	181	51	11	49	118	4,281
Nyanza	2,095	4,179	598	-	63	1,334	2,227	355	496	1,041	197	344	500	10,991	8,841	2,149	29	1,022	1,244	326	66	257	845	27,167
Gisagara	2,244	4,387	3,184	-	174	2,574	2,357	172	202	1,479	279	451	749	13,420	11,743	1,677	39	743	2,062	332	112	108	279	33,867
Nyaruguru	513	3,677	-	521	-	1,404	4,038	1,618	355	656	173	154	329	4,504	854	3,650	208	-	823	318	53	496	610	19,794
Huye	678	6,436	953	-	180	859	2,477	478	458	950	218	226	506	7,180	4,582	2,598	62	328	1,716	182	24	158	823	23,944
Nyamagabe	797	4,498	19	1,564	-	1,101	7,637	2,506	332	1,396	98	118	1,181	5,975	1,219	4,757	1,679	-	815	388	62	256	818	29,844
Ruhango	789	3,138	890	-	150	6,831	2,845	250	543	1,895	124	196	1,576	11,671	8,147	3,524	74	2,129	2,161	313	39	604	1,028	35,350
Muhanga	344	184	148	5	-	2,681	6,061	101	1,842	6,650	463	584	5,603	8,597	5,538	3,060	44	148	2,265	419	142	398	405	30,432
Kamonyi	1,673	4,206	197	-	9	1,514	3,185	632	1,040	4,548	374	666	3,508	11,637	10,267	1,370	101	539	2,396	856	685	247	1,656	35,119
Karongi	632	2,007	-	312	-	1,855	3,649	874	813	4,584	179	296	4,110	7,347	2,338	5,009	406	22	1,788	561	60	407	1,016	26,332
Rutsiro	1,794	34	-	540	-	924	3,250	3,483	1,110	2,317	307	836	1,173	5,075	631	4,444	522	-	791	182	554	219	1,894	22,689
Rubavu	1,753	439	-	-	-	196	698	6,572	191	907	169	146	591	3,891	447	3,444	167	-	150	2,260	68	458	906	18,656
Nyabihu	3,652	-	-	1,326	-	66	2,725	7,605	38	259	41	123	96	2,038	-	2,038	195	-	40	862	92	526	697	20,120
Ngororero	2,849	-	-	1,444	-	325	7,259	1,316	769	3,767	193	318	3,256	4,179	738	3,441	308	-	774	235	11	364	61	23,662
Rusizi	1,241	85	1,482	-	-	8,143	1,935	81	605	1,235	409	130	697	8,677	6,036	2,641	144	237	719	231	193	50	2,066	27,125
Nyamasheke	615	15	357	48	-	3,720	3,445	-	974	1,247	193	153	901	5,333	1,211	4,121	182	690	1,563	304	212	60	2,794	21,558
Rulindo	969	4,310	17	74	-	1,068	3,265	994	160	2,587	454	677	1,456	10,612	5,375	5,237	215	47	182	530	89	90	550	25,758
Gakenke	1,415	552	28	490	-	1,072	7,607	1,249	1,275	5,935	720	1,495	3,720	12,236	1,068	11,168	200	49	754	406	210	170	1,027	34,675
Musanze	2,833	1,076	-	759	-	-	1,319	5,335	202	445	102	166	177	4,470	305	4,165	289	-	7	1,129	75	264	742	18,944
Burera	2,525	6,103	-	1,416	-	28	2,997	4,273	133	612	236	106	271	11,768	692	11,077	601	-	-	333	28	192	42	31,050
Gicumbi	2,089	16,871	-	208	-	500	5,845	2,792	142	1,959	508	485	966	10,833	3,609	7,224	930	298	79	300	356	794	259	44,254
Rwamagana	3,870	10,058	474	-	-	1,634	1,061	1,952	770	4,274	2,724	649	901	10,558	10,262	296	131	1,638	218	1,158	332	431	767	39,326
Nyagatare	18,329	7,569	1,493	-	12	1,770	1,748	886	114	4,774	2,499	389	1,885	31,180	29,978	1,202	89	3,519	1,076	793	82	11	46	73,490
Gatsibo	8,243	8,856	1,504	-	71	680	1,514	1,855	423	5,541	2,613	897	2,031	18,336	16,531	1,805	120	4,537	965	403	106	17	2,020	55,191
Kayanza	6,872	14,887	1,474	-	234	2,626	1,628	2,495	396	3,228	2,252	299	678	16,069	15,900	169	129	1,114	223	464	187	97	749	52,872
Kirehe	3,035	13,279	950	44	251	1,821	1,508	1,429	892	4,432	2,636	341	1,455	19,724	12,820	6,904	427	649	588	566	67	-	510	50,174
Ngoma	2,405	4,764	857	-	477	1,471	1,504	796	268	6,301	3,983	497	1,821	19,878	17,818	2,060	125	618	605	357	297	531	1,144	42,398
Bugesera	4,556	6,500	1,393	-	38	1,053	2,517	692	298	6,839	1,456	865	4,519	17,831	17,595	235	42	2,818	895	497	193	568	903	47,635
National	80,570	133,033	16,302	8,749	1,660	47,837	87,762	51,595	15,017	82,137	24,193	12,174	45,770	301,584	201,783	99,801	7,521	21,534	25,574	15,574	4,429	8,249	25,032	934,159
SSF	78,782	132,985	335	8,700	1,643	47,818	87,751	51,263	15,014	82,086	24,151	12,171	45,765	300,148	200,450	99,698	7,321	21,506	25,162	15,364	4,265	7,721	24,509	912,373
LSF	1,787	48	15,967	48	18	19	11	333	4	51	42	4	5	1,435	1,332	103	200	28	412	210	164	529	523	21,786

Source : NISR, SAS 2021

Table 10: Season B 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	1,108	752	2,903	1,133	-	16,332	6,809	3,874	7,116	9,077	15,172	10,058	8,471	632	595	699	505	363	385	10,258	3,435	21,840	4,458
Gasabo	885	1,026	3,029	-	700	16,035	5,943	2,291	8,860	9,303	17,576	11,167	8,066	583	555	793	856	394	443	10,609	5,601	10,845	8,816
Kicukiro	1,385	757	-	888	-	14,071	10,967	4,537	9,463	10,182	15,614	12,758	9,761	793	766	806	1,105	467	467	9,390	3,057	11,901	1,279
Nyanza	1,518	1,333	-	380	-	14,660	6,634	4,597	8,146	14,458	23,250	17,814	9,764	800	675	817	740	-	544	10,683	6,249	9,337	1,592
Gisagara	1,849	1,769	-	-	-	11,902	6,340	10,845	5,284	12,830	18,656	12,624	11,212	926	388	995	903	-	991	14,384	3,449	447	13,543
Nyaruguru	1,436	-	-	965	-	9,276	5,945	11,075	8,690	9,834	16,985	9,276	7,522	945	-	945	697	-	370	18,284	3,778	8,032	248
Huye	1,031	-	-	862	-	12,108	6,452	4,063	9,496	9,941	15,336	12,944	9,330	683	564	708	950	-	325	11,556	792	10,199	1,468
Nyamagabe	1,337	585	5,317	-	-	9,133	8,952	6,989	7,416	12,818	17,741	17,075	9,133	797	774	849	917	457	539	6,850	3,324	2,646	2,104
Ruhango	1,034	1,040	4,290	670	-	11,362	8,303	-	6,579	12,209	14,741	13,919	11,376	729	542	784	792	480	500	11,249	5,293	9,175	2,183
Muhanga	1,158	1,003	2,398	840	-	15,873	7,033	5,359	6,278	12,027	19,968	12,669	9,251	793	678	911	554	488	513	7,998	6,007	22,192	36,725
Kamonyi	1,104	1,107	3,921	1,409	-	18,310	10,906	5,160	7,359	11,651	21,054	13,066	9,263	934	647	962	509	378	614	9,768	7,436	6,198	1,975
Karongi	1,605	1,219	-	1,159	-	-	10,188	10,736	10,086	9,530	14,167	7,139	9,099	1,114	901	1,130	1,224	-	612	7,915	8,006	10,613	3,339
Rutsiro	1,238	1,369	-	1,335	-	12,410	7,610	10,604	7,696	13,449	20,214	12,240	8,041	1,092	740	1,114	812	-	-	11,304	2,381	10,888	-
Rubavu	1,051	1,120	-	856	-	15,670	7,117	8,328	7,620	12,641	20,494	11,166	9,250	967	664	1,119	945	602	306	12,908	-	11,888	1,045
Nyabihu	977	1,221	4,912	-	-	16,006	4,615	4,299	6,207	14,792	18,509	9,119	7,642	629	618	1,023	380	329	372	10,488	5,549	16,318	2,648
Ngororero	1,430	921	4,543	-	1,041	18,337	3,976	3,606	5,495	13,816	18,599	8,078	8,661	837	836	852	491	637	655	9,784	5,921	10,166	327
Rusizi	1,410	1,145	3,646	-	942	15,163	8,056	4,345	7,729	13,764	17,611	10,550	10,234	699	679	888	617	522	639	7,763	5,995	10,011	2,563
Nyamashoke	977	1,135	4,246	-	884	16,480	4,866	3,233	5,513	16,145	18,665	13,833	8,793	639	635	1,047	654	575	620	9,413	6,418	4,340	1,105
Rulindo	2,092	858	4,494	50	1,004	17,813	5,659	2,390	4,758	16,533	21,725	10,303	8,586	703	632	834	1,042	444	564	8,160	12,161	-	2,213
Gakenke	807	991	3,190	-	1,113	17,048	6,225	4,668	3,551	14,828	17,421	8,153	10,980	823	801	1,012	560	560	496	10,705	8,980	21,127	1,298
Musanze	1,162	687	6,054	-	1,334	17,240	3,986	2,365	6,684	9,719	13,768	12,275	7,927	674	673	719	445	486	318	10,909	5,175	32,715	1,238
Burera	1,291	1,010	4,159	1,050	964	15,021	7,208	7,624	7,128	12,071	18,163	11,704	8,949	761	687	911	871	500	477	11,104	5,721	13,235	4,961
Gicumbi	1,236	1,009	3,823	1,048	968	15,020	7,209	7,569	7,128	12,070	18,170	11,704	8,949	759	684	910	852	499	464	11,126	5,766	12,103	5,019
Rwamagana	3,749	1,804	4,166	1,412	606	18,133	4,865	16,166	4,500	13,514	13,929	11,918	11,216	1,195	1,192	1,235	1,545	788	1,273	9,481	4,542	29,775	2,252
Nyagatare	1,108	752	2,903	1,133	-	16,332	6,809	3,874	7,116	9,077	15,172	10,058	8,471	632	595	699	505	363	385	10,258	3,435	21,840	4,458
Gatsibo	885	1,026	3,029	-	700	16,035	5,943	2,291	8,860	9,303	17,576	11,167	8,066	583	555	793	856	394	443	10,609	5,601	10,845	8,816
Kayonza	1,385	757	-	888	-	14,071	10,967	4,537	9,463	10,182	15,614	12,758	9,761	793	766	806	1,105	467	467	9,390	3,057	11,901	1,279
Kirehe	1,518	1,333	-	380	-	14,660	6,634	4,597	8,146	14,458	23,250	17,814	9,764	800	675	817	740	-	544	10,683	6,249	9,337	1,592
Ngoma	1,849	1,769	-	-	-	11,902	6,340	10,845	5,284	12,830	18,656	12,624	11,212	926	388	995	903	-	991	14,384	3,449	447	13,543
Bugesera	1,436	-	-	965	-	9,276	5,945	11,075	8,690	9,834	16,985	9,276	7,522	945	-	945	697	-	370	18,284	3,778	8,032	248
National	1,031	-	-	862	-	12,108	6,452	4,063	9,496	9,941	15,336	12,944	9,330	683	564	708	950	-	325	11,556	792	10,199	1,468
SSF	1,337	585	5,317	-	-	9,133	8,952	6,989	7,416	12,818	17,741	17,075	9,133	797	774	849	917	457	539	6,850	3,324	2,646	2,104
LSF	1,034	1,040	4,290	670	-	11,362	8,303	-	6,579	12,209	14,741	13,919	11,376	729	542	784	792	480	500	11,249	5,293	9,175	2,183

Source: NISR, SAS 2021

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

	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	Pea	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops
Nyarugenge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gasabo	2,755	1,536	3,416	-	-	-	6,060	-	-	3,848	3,848	-	-	830	830	-	-	-	446	3,525	20,376	5,850
Kicukiro	988	1,769	6,632	-	-	-	-	-	-	13,322	11,720	14,736	-	236	236	-	-	-	1,848	67,075	-	30,901
Nyanza	-	-	3,367	-	-	-	-	7,220	-	-	-	-	-	1,443	-	1,443	-	-	-	-	-	-
Gisagara	2,054	-	3,541	-	-	-	6,118	-	-	10,854	16,431	6,288	10,837	311	281	1,012	-	-	1,278	1,002	-	-
Nyaruguru	4,000	-	-	-	-	-	-	20,472	-	8,293	6,133	7,220	9,500	1,048	1,054	795	-	-	-	-	7,270	38,614
Huye	3,692	-	3,856	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nyamagabe	-	-	-	846	-	-	-	6,622	-	-	-	-	-	401	-	401	653	-	-	-	-	-
Ruhango	3,715	-	3,223	-	-	26,398	-	-	4,240	10,556	11,001	15,017	10,468	331	331	-	-	-	-	3,956	-	-
Muhanga	1,114	-	2,903	1,133	-	-	-	6,776	-	-	-	-	-	1,053	293	1,078	-	-	-	8,705	-	-
Kamonyi	4,088	-	3,029	-	-	-	-	2,799	-	-	-	-	-	1,290	1,290	-	1,425	-	-	15,073	-	-
Karongi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rutsiro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubavu	2,919	-	-	-	-	-	-	12,707	4,790	12,387	12,387	-	-	1,430	-	1,430	-	-	-	-	-	-
Nyabihu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ngororero	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rusizi	2,256	-	5,334	-	-	9,489	-	-	-	9,664	8,619	-	11,057	830	830	-	-	-	-	-	-	-
Nyamasheke	-	-	4,290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	238	-	-	-	-
Rulindo	2,846	1,857	2,398	2,104	-	-	-	8,469	-	-	-	-	-	926	911	935	-	-	-	3,187	-	-
Gakenke	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Musanze	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Burera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gicumbi	665	-	-	1,278	-	-	-	6,350	-	-	-	-	-	891	-	891	-	-	-	-	-	27,737
Rwamagana	1,848	2,097	4,912	-	-	17,782	5,535	6,936	4,798	16,400	17,280	8,056	-	720	710	3,216	-	467	138	8,467	4,140	19,693
Nyagatare	3,354	1,668	4,543	-	-	49,096	2,661	4,433	-	15,374	15,755	10,474	12,223	1,295	1,294	1,450	855	-	1,312	4,585	12,206	10,166
Gatsibo	1,187	-	3,651	-	-	-	1,416	-	-	11,504	11,207	12,889	-	785	725	1,343	-	192	1,136	4,195	-	16,305
Kayonza	3,517	1,164	4,246	-	606	19,112	5,100	3,759	1,115	14,307	14,422	14,451	12,102	693	693	-	345	1,419	989	5,792	3,717	9,192
Kirehe	5,827	-	4,417	-	-	-	-	5,665	-	-	-	-	-	1,389	1,389	-	1,613	855	1,745	11,049	19,077	-
Ngoma	2,570	1,789	3,190	-	-	-	1,249	-	-	11,799	12,104	7,764	10,564	868	870	666	-	-	388	6,205	3,397	8,308
Bugesera	2,214	1,723	6,120	-	-	7,607	-	3,694	-	10,760	10,690	11,259	9,981	324	324	551	-	250	515	4,130	1,276	43,232
LSF	3,749	1,804	4,166	1,412	606	18,133	4,865	16,166	4,500	13,514	13,929	11,918	11,216	1,195	1,192	1,235	1,545	788	1,273	9,481	4,542	29,775

Source: NISR, SAS 2021

Table 12: Season B 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	317	445	-	-	-	2,200	617	153	270	6,253	1,810	679	3,764	762	737	24	5	22	90	2,266	72	302	86
Gasabo	1,179	3,719	883	-	-	4,012	5,245	2,354	177	15,817	6,818	5,173	3,826	3,677	3,448	229	28	83	124	6,697	60	4,166	175
Kicukiro	541	932	172	-	-	1,214	4,122	182	372	5,523	2,261	1,360	1,902	1,097	1,077	20	6	31	152	728	40	1,029	3,828
Nyanza	2,352	4,669	2,035	-	58	24,382	20,313	1,118	1,975	9,859	2,453	3,012	4,394	7,613	5,902	1,711	18	352	424	4,487	455	1,390	415
Gisagara	2,370	3,636	11,248	-	140	44,084	12,599	435	732	16,899	4,666	4,461	7,773	8,307	6,893	1,414	22	317	861	3,512	2,205	884	369
Nyaruguru	875	2,321	-	442	-	20,764	32,234	11,234	3,737	6,413	2,569	1,240	2,605	4,109	529	3,580	235	-	467	3,222	316	5,366	793
Huye	920	5,536	3,676	-	156	15,990	21,280	1,545	1,995	9,324	2,681	2,287	4,357	4,916	2,899	2,017	56	157	765	2,206	13	521	838
Nyamagabe	1,017	3,217	63	1,997	-	13,944	46,093	18,117	2,777	10,026	955	1,513	7,558	4,089	702	3,387	1,581	-	362	4,254	156	6,370	681
Ruhango	825	2,628	2,851	-	119	128,115	11,293	916	3,833	17,621	2,272	2,507	12,842	7,472	4,874	2,598	71	1,070	1,123	2,953	287	7,119	36,543
Muhanga	381	138	428	6	-	43,782	41,272	391	13,107	60,360	7,025	5,872	47,462	5,434	3,295	2,139	22	54	873	4,303	487	8,701	1,804
Kamonyi	1,480	4,314	595	-	7	24,270	18,925	1,448	9,216	42,313	6,580	7,433	28,300	6,786	5,700	1,086	86	212	1,062	9,085	3,838	2,677	14,595
Karongi	875	1,520	-	277	-	26,106	40,014	3,966	7,697	46,681	2,788	3,774	40,118	5,827	1,791	4,036	449	10	834	5,265	182	4,847	1,299
Rutsiro	2,724	45	-	205	-	13,542	21,559	16,010	9,042	33,493	7,147	14,891	11,456	4,058	426	3,632	387	-	430	1,940	3,464	2,046	3,015
Rubavu	3,240	777	-	-	-	2,335	4,428	71,273	1,008	11,632	3,159	1,844	6,629	3,602	173	3,428	151	-	149	32,505	234	205	12,264
Nyabihu	5,244	-	-	1,280	-	609	16,199	84,219	329	2,546	689	1,137	720	1,927	-	1,927	136	-	15	15,759	346	4,225	173
Ngororero	2,938	-	-	1,245	-	3,941	46,830	5,349	7,301	37,446	2,955	4,110	30,382	2,853	416	2,437	293	-	251	2,718	9	3,715	90
Rusizi	1,660	50	7,880	-	-	74,377	17,325	565	4,484	15,837	7,258	2,217	6,362	6,912	4,669	2,243	132	108	387	1,581	642	132	4,347
Nyamasheke	636	16	1,533	32	-	42,266	28,601	-	6,406	15,220	2,844	2,128	10,248	3,887	657	3,231	144	331	782	3,417	1,122	550	6,099
Rulindo	1,122	4,323	40	62	-	16,956	22,962	5,326	1,003	31,120	9,075	8,573	13,473	8,418	3,647	4,771	119	23	93	4,237	535	2,002	20,214
Gakenke	1,562	611	111	690	-	19,630	82,959	6,447	9,386	69,141	15,149	19,533	34,459	11,431	690	10,741	102	18	463	3,965	1,565	1,057	2,028
Musanze	4,546	1,312	-	879	-	-	13,439	57,278	2,040	4,237	1,445	1,185	1,607	4,980	275	4,705	354	-	4	8,932	598	2,801	2,476
Burera	3,127	8,356	-	1,890	-	351	22,808	45,308	1,022	8,236	4,762	1,295	2,179	12,857	512	12,345	488	-	-	3,760	67	2,086	-
Gicumbi	2,195	18,903	-	178	-	7,839	41,602	23,255	1,081	24,769	10,416	5,419	8,935	10,477	2,395	8,082	878	179	24	3,878	-	9,438	270
Rwamagana	3,780	12,275	2,327	-	-	26,152	4,897	8,390	4,779	63,219	50,417	5,920	6,882	6,645	6,342	303	50	540	81	12,147	1,844	7,039	2,031
Nyagatare	26,215	6,972	6,781	-	12	32,451	6,950	3,195	628	65,959	46,485	3,143	16,331	26,095	25,071	1,024	43	2,242	705	7,761	486	109	15
Gatsibo	11,623	10,136	5,485	-	67	10,311	12,199	8,060	3,269	76,267	46,018	9,467	20,782	12,824	11,221	1,603	74	2,369	616	3,127	634	167	5,178
Kayonza	6,714	16,898	6,258	-	207	43,280	7,920	8,066	2,181	52,119	42,026	4,133	5,959	10,273	10,096	177	85	640	138	4,368	1,202	422	827
Kirehe	6,350	11,395	4,271	2	252	32,442	8,532	3,415	4,245	73,266	57,261	3,515	12,490	13,858	8,101	5,757	445	288	332	4,622	819	-	1,130
Ngoma	1,941	4,721	2,734	-	531	25,081	9,364	3,718	951	93,429	69,383	4,053	19,993	16,356	14,273	2,084	70	346	300	3,817	2,663	11,228	1,485
Bugesera	5,294	4,464	8,437	-	51	18,157	10,031	1,637	1,994	66,474	20,040	10,613	35,821	12,018	11,849	169	19	1,369	284	5,423	997	18,591	1,118
2021 B	104,041	134,331	67,808	9,184	1,600	718,584	632,614	393,371	107,037	991,501	439,405	142,487	409,609	229,559	138,659	90,899	6,549	10,763	12,194	172,936	25,340	109,181	124,188
2020 B	94,634	128,258	64,279	8,673	1,540	701,037	611,425	352,441	102,628	931,991	410,259	138,090	383,641	209,383	125,425	83,958	5,668	10,542	10,955	166,272	24,830	114,825	123,012
Change	9.9%	4.7%	5.5%	5.9%	3.9%	2.5%	3.5%	11.6%	4.3%	6.4%	7.1%	3.2%	6.8%	9.6%	10.6%	8.3%	15.5%	2.1%	11.3%	4.0%	2.1%	-4.9%	1.0%

Source: NISR, SAS, 2021

Table 13: The Use of production by farmers in 2021 Season B (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
<i>Cereals</i>											
Maize	25.6	63.8	0.9	1.8	5.3	0.0	0.6	0.4	1.5	0.0	0.1
Sorghum	44.4	41.6	0.9	2.2	5.5	0.1	3.4	0.0	1.5	0.1	0.3
Paddy rice	79.5	13.6	0.9	0.1	0.0	-	0.4	0.0	-	0.8	4.6
Wheat	43.0	41.4	-	0.2	7.0	-	8.0	0.0	0.2	0.1	0.0
Other cereals	17.2	72.4	0.3	1.2	2.9	0.6	4.0	-	1.3	0.1	0.0
<i>Tubers and Roots</i>											
Sweet potato	24.3	65.8	1.6	0.7	4.8	0.1	0.0	2.5	0.1	0.0	0.1
Irish potato	40.2	39.6	0.4	0.4	3.5	0.0	15.4	-	0.1	0.3	0.1
Yam & Taro	27.4	65.5	0.3	0.9	4.0	-	1.9	-	-	0.0	0.0
Cassava	42.0	50.6	1.3	1.6	4.0	0.0	-	0.2	0.1	0.1	0.1
<i>Legumes and Pulses</i>											
Bush bean	21.7	54.3	1.6	2.8	4.0	0.1	13.1	0.0	2.1	0.1	0.1
Climbing bean	15.0	60.6	0.9	0.6	6.0	0.1	15.0	0.0	1.6	0.1	0.1
Pea	31.3	51.4	0.1	0.2	2.7	0.0	14.2	-	0.1	0.1	0.0
Groundnut	34.7	42.7	0.5	1.0	3.5	-	15.8	-	1.6	0.0	0.2
Soybean	19.5	57.9	0.3	0.5	3.2	0.1	17.8	0.2	0.3	0.1	0.1
<i>Banana</i>											
Cooking banana	38.1	56.6	0.9	0.1	4.0	0.0	-	0.0	-	0.0	0.2
Dessert banana	64.4	32.7	0.2	0.1	1.9	0.0	-	0.0	-	0.2	0.5
Banana for beer	79.9	15.2	0.1	0.2	3.7	0.0	0.0	0.0	-	0.7	0.3
<i>Vegetables and fruits</i>											
Vegetables	76.9	18.7	0.5	0.0	2.9	-	0.3	0.1	-	0.6	0.1
Fruits	80.9	15.5	-	-	2.7	-	0.0	0.0	-	0.0	0.8
Fodder crops	4.0	-	3.1	-	0.9	-	0.0	88.9	0.1	0.0	3.0
Other crops	93.6	3.8	0.0	0.0	0.6	0.0	0.2	-	-	0.1	1.6

Source: NISR, SAS, 2021

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

District	Cropping system	
	Pure Cropping	Mixed Cropping
Nyarugenge	15.8	84.2
Gasabo	28.4	71.6
Kicukiro	20.5	79.5
Nyanza	26.1	73.9
Gisagara	35.0	65.0
Nyaruguru	42.0	58.0
Huye	25.2	74.8
Nyamagabe	37.0	63.0
Ruhango	31.4	68.6
Muhanga	30.2	69.8
Kamonyi	22.1	77.9
Karongi	48.9	51.1
Rutsiro	41.6	58.4
Rubavu	53.8	46.2
Nyabihu	61.7	38.3
Ngororero	36.1	63.9
Rusizi	36.2	63.8
Nyamasheke	46.7	53.3
Rulindo	28.1	71.9
Gakenke	30.0	70.0
Musanze	56.0	44.0
Burera	48.1	51.9
Gicumbi	39.3	60.7
Rwamagana	20.9	79.1
Nyagatare	21.0	79.0
Gatsibo	22.5	77.5
Kayonza	26.5	73.5
Kirehe	33.4	66.6
Ngoma	19.0	81.0
Bugesera	23.9	76.1
National	32.2	67.8
SSF	30.9	69.1
LSF	93.8	6.2

Source: NISR, SAS 2021

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

District	Before 01/01	Between 01-15/01	Between 16-31/01	Between 01-15/02	Between 16-28/02	Between 01- 15/03	Between 16-31/03	After 31/03	Other season (for perennial crops only)	Total
Nyarugenge	3.3	6.5	2.1	20.0	18.3	6.7	1.7	0.3	41.2	100.0
Gasabo	23.2	10.6	3.9	17.4	15.8	9.1	3.4	3.1	13.6	100.0
Kicukiro	5.6	8.0	2.3	9.8	19.7	12.7	4.7	1.6	35.6	100.0
Nyanza	2.9	6.3	4.0	22.4	19.6	9.1	2.3	2.4	31.0	100.0
Gisagara	9.5	7.0	3.6	21.6	17.7	8.4	2.4	2.5	27.4	100.0
Nyaruguru	16.0	10.2	3.5	11.1	11.4	13.6	8.2	6.8	19.3	100.0
Huye	2.6	5.8	7.8	21.7	19.7	4.6	1.5	1.4	35.0	100.0
Nyamagabe	6.2	9.2	5.6	10.1	16.0	17.3	8.8	6.4	20.5	100.0
Ruhango	15.4	7.6	9.7	31.5	9.5	4.7	0.6	0.6	20.4	100.0
Muhanga	4.5	4.2	2.0	9.3	15.9	9.9	2.9	2.1	49.3	100.0
Kamonyi	26.2	5.6	3.9	26.7	12.4	4.3	1.4	4.0	15.5	100.0
Karongi	12.5	1.7	3.0	6.2	23.7	15.2	7.0	6.3	24.4	100.0
Rutsiro	4.0	0.9	2.6	10.1	16.0	14.3	6.3	6.6	39.3	100.0
Rubavu	24.1	3.4	6.1	18.8	18.8	12.3	10.1	5.7	0.7	100.0
Nyabihu	8.7	5.7	5.1	11.0	20.3	18.9	14.0	8.1	8.2	100.0
Ngororero	13.1	2.4	1.6	16.6	26.7	8.0	4.2	7.0	20.5	100.0
Rusizi	2.3	2.0	0.7	11.0	14.2	17.8	1.4	1.5	49.1	100.0
Nyamasheke	37.9	2.0	1.4	7.2	17.5	15.1	2.7	2.2	13.9	100.0
Rulindo	18.4	6.6	7.8	8.2	7.1	15.2	9.6	4.5	22.6	100.0
Gakenke	15.7	4.0	3.6	7.5	8.9	13.7	8.5	7.5	30.7	100.0
Musanze	6.2	4.8	4.4	8.6	10.5	21.2	19.4	14.9	10.0	100.0
Burera	4.0	9.0	6.7	11.4	10.5	19.2	21.3	11.1	6.8	100.0
Gicumbi	9.2	8.2	10.0	12.1	8.3	16.2	12.1	7.8	16.2	100.0
Rwamagana	17.9	9.3	5.0	9.4	15.1	12.8	2.0	1.4	27.1	100.0
Nyagatare	7.3	2.1	1.5	10.2	21.5	30.0	5.8	1.9	19.8	100.0
Gatsibo	23.6	4.5	2.8	14.7	17.1	15.1	4.1	1.1	17.1	100.0
Kayanza	7.7	7.1	3.1	4.1	12.1	26.5	12.7	1.8	24.9	100.0
Kirehe	14.1	8.5	2.5	9.6	18.8	17.0	1.6	0.8	27.1	100.0
Ngoma	24.5	6.1	2.5	7.3	12.2	23.4	3.6	0.9	19.6	100.0
Bugesera	19.5	4.5	3.2	7.8	15.8	26.1	6.8	1.3	15.1	100.0
National	13.7	5.8	4.0	13.2	15.5	15.0	5.7	3.6	23.5	100.0

Source: NISR, SAS 2021

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

Crops	Sowing Date									Total
	Before 01/01	Between 01-15/01	Between 16-31/01	Between 01-15/02	Between 16-28/02	Between 01-15/03	Between 16-31/03	After 31/03	Other season (for perennial crops only)	
Fruits	50.8	2.5	0.4	1.7	3.3	3.3	1.7	5.4	30.8	100.0
Vegetables	11.1	9.7	5.6	18.2	11.4	14.3	10.8	18.8	0.0	100.0
Other crops	42.7	0.6	0.1	0.9	1.1	2.9	0.9	2.6	48.3	100.0
Other cereals	0.0	2.5	2.5	32.3	28.5	26.6	7.6	0.0	0.0	100.0
Taro & Yams	42.3	16.8	5.7	12.4	5.9	6.4	2.2	6.9	1.2	100.0
Fodder crops	81.9	0.8	1.3	3.8	2.5	3.0	2.1	4.6	0.0	100.0
Maize	0.5	2.1	4.6	24.4	34.9	26.1	5.8	1.6	0.0	100.0
Paddy rice	13.4	27.9	11.4	28.9	11.4	3.5	1.0	2.5	0.0	100.0
Sorghum	3.8	48.6	25.1	17.4	4.4	0.6	0.2	0.1	0.0	100.0
Wheat	0.4	0.9	0.4	4.3	6.0	14.9	35.3	37.9	0.0	100.0
Bush bean	0.0	0.3	1.3	23.5	31.5	34.4	8.1	1.0	0.0	100.0
Climbing bean	0.0	0.5	1.8	18.9	31.4	30.4	14.6	2.4	0.0	100.0
Pea	0.6	1.4	1.6	10.4	18.1	34.0	20.4	13.6	0.0	100.0
Irish potato	1.1	2.6	3.9	11.6	18.7	26.3	19.5	16.3	0.0	100.0
Sweet potato	9.0	13.2	8.1	16.2	14.6	14.7	8.2	16.1	0.0	100.0
Soybean	0.0	1.5	4.0	31.2	33.8	22.9	5.4	1.3	0.0	100.0
Groundnut	0.0	1.7	4.4	34.8	32.2	23.6	2.9	0.5	0.0	100.0
Cooking banana	33.1	0.1	0.0	0.2	0.0	0.3	0.1	0.3	65.9	100.0
Dessert banana	31.6	0.1	0.0	0.0	0.1	0.2	0.0	0.3	67.6	100.0
Banana for beer	30.0	0.1	0.1	0.1	0.1	0.2	0.0	0.2	69.1	100.0
Cassava	21.9	3.5	2.9	6.1	4.6	3.4	1.2	2.3	54.1	100.0

Source: NISR, SAS 2021

Table 17: Use of seeds by farmer type per district during Season B 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	LSF
Nyarugenge	9.6	9.6		6.1	6.1		7.8	7.8	
Gasabo	22.2	21.0	60.0	15.9	15.9	45.3	17.6	17.6	17.5
Kicukiro	24.1	22.6	100.0	20.4	20.4	75.0	21.2	19.7	91.3
Nyanza	24.2	23.5	83.3	16.3	16.3	71.4	19.0	17.9	78.2
Gisagara	18.0	16.0	75.0	11.8	11.8	63.6	19.8	13.4	75.4
Nyaruguru	16.2	13.8	90.0	12.4	12.4	76.9	12.6	11.6	93.5
Huye	15.7	12.9	79.0	9.5	9.5	79.0	12.9	10.0	87.1
Nyamagabe	10.1	9.9	100.0	8.4	8.4	100.0	8.7	8.6	100.0
Ruhango	11.2	9.7	81.8	6.8	6.8	62.5	10.8	8.9	87.5
Muhanga	6.0	4.8	100.0	3.9	3.9	70.0	4.6	4.0	77.4
Kamonyi	16.4	15.3	87.5	9.0	9.0	86.7	14.5	13.8	68.3
Karongi	9.9	9.6	100.0	8.4	8.4	100.0	9.2	9.1	100.0
Rutsiro	14.8	14.8		13.8	13.8		11.9	11.9	
Rubavu	24.4	23.8	75.0	15.9	15.9	33.3	21.3	21.3	25.9
Nyabihu	34.3	34.3		31.3	31.3		28.5	28.5	
Ngororero	26.2	26.2		24.8	24.8		21.1	21.1	
Rusizi	5.6	5.1	30.0	3.4	3.4	35.7	6.2	4.7	32.2
Nyamasheke	8.8	8.1	50.0	7.7	7.7	44.4	8.8	8.2	46.6
Rulindo	11.4	10.5	80.0	9.0	9.0	54.6	8.2	8.1	47.9
Gakenke	11.7	11.7		8.9	8.9		10.5	10.5	
Musanze	16.8	16.8		13.9	13.9		18.8	18.8	
Burera	12.1	12.1		10.1	10.1		10.7	10.7	
Gicumbi	13.8	13.5	66.7	11.3	11.3	72.7	10.6	10.6	71.2
Rwamagana	19.3	16.4	77.8	12.9	12.9	54.4	13.6	12.5	77.6
Nyagatare	39.6	36.7	82.1	24.3	24.2	69.4	28.0	26.3	90.0
Gatsibo	23.8	21.8	94.7	15.6	15.6	71.9	20.8	18.2	94.2
Kayonza	25.0	21.9	90.0	17.0	17.0	62.9	19.9	17.7	89.0
Kirehe	6.9	5.5	100.0	3.1	3.1	58.3	7.0	3.8	72.4
Ngoma	8.5	6.7	75.0	4.5	4.5	56.9	7.2	5.6	84.4
Bugesera	27.8	25.1	72.2	18.1	18.1	45.5	20.2	18.2	78.9
National	17.2	15.9	78.8	11.9	11.9	59.6	15.2	13.9	76.8

Source: NISR, SAS 2021

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

Crop	Traditional seeds	Improved seeds	Total
Fruits	64.6	35.4	100
Vegetables	48.8	51.2	100
Other crops	69.0	31.0	100
Other cereals	98.7	1.3	100
Taro & Yams	100.0	-	100
Fodder crops	86.1	13.9	100
Maize	44.6	55.4	100
Paddy rice	35.7	64.3	100
Sorghum	100.0	-	100
Wheat	77.8	22.2	100
Bush bean	99.4	0.6	100
Climbing bean	99.9	0.1	100
Pea	99.4	0.6	100
Irish potato	96.3	3.8	100
Sweet potato	99.9	0.1	100
Soybean	97.9	2.1	100
Groundnut	99.8	0.2	100
Cooking banana	99.4	0.6	100
Dessert banana	98.6	1.4	100
Banana for beer	99.2	0.8	100
Cassava	99.6	0.4	100
National	91.9	8.1	100

Source: NISR, SAS 2021

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

District	Sources of improved seeds							Total
	Government (MINAGRI/RAB/NAEB)	Recognized seed multipliers	Agro-dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	
Nyarugenge	10.0	10.0	75.0	-	5.0	-	-	100
Gasabo	15.6	6.5	53.3	-	23.4	1.3	-	100
Kicukiro	5.7	5.7	71.7	3.8	7.6	1.9	3.8	100
Nyanza	4.8	6.4	13.6	60.8	4.0	8.0	2.4	100
Gisagara	6.0	7.1	23.8	45.2	9.5	8.3	-	100
Nyaruguru	25.6	4.7	18.6	20.9	4.7	16.3	9.3	100
Huye	17.3	22.7	28.0	18.7	6.7	5.3	1.3	100
Nyamagabe	4.7	39.5	11.6	30.2	7.0	7.0	-	100
Ruhango	21.2	18.2	22.7	1.5	25.8	9.1	1.5	100
Muhanga	4.0	8.0	36.0	32.0	8.0	12.0	-	100
Kamonyi	15.9	10.2	44.3	17.1	3.4	9.1	-	100
Karongi	39.5	2.6	21.1	34.2	-	2.6	-	100
Rutsiro	13.5	7.7	46.2	30.8	1.9	-	-	100
Rubavu	3.9	1.9	79.6	11.7	-	-	2.9	100
Nyabihu	2.2	8.6	51.8	31.7	1.4	4.3	-	100
Ngororero	5.0	7.5	35.0	49.2	2.5	0.8	-	100
Rusizi	17.4	-	17.4	52.2	8.7	-	4.4	100
Nyamasheke	41.7	4.2	16.7	29.2	4.2	4.2	-	100
Rulindo	4.2	2.1	62.5	18.8	8.3	4.2	-	100
Gakenke	8.9	3.6	50.0	23.2	7.1	7.1	-	100
Musanze	3.2	6.5	67.7	10.8	8.6	1.1	2.2	100
Burera	1.4	1.4	75.7	14.3	4.3	2.9	-	100
Gicumbi	13.1	6.0	67.9	2.4	9.5	1.2	-	100
Rwamagana	3.1	17.8	31.0	30.2	15.5	-	2.3	100
Nyagatare	6.9	3.5	33.1	39.6	7.3	8.9	0.8	100
Gatsibo	9.0	5.4	23.4	53.3	4.8	4.2	-	100
Kayonza	14.3	2.3	26.3	44.4	7.5	5.3	-	100
Kirehe	9.4	11.3	22.6	24.5	5.7	22.6	3.8	100
Ngoma	21.7	5.0	11.7	35.0	6.7	16.7	3.3	100
Bugesera	3.2	5.4	38.9	33.5	7.0	11.9	-	100
National	9.2	7.5	38.9	30.3	7.1	5.9	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
Fruits	11.7	55.0	10.0	3.3	15.0	-	5.0	100
Vegetables	3.6	3.0	58.8	2.4	26.4	3.0	2.7	100
Other crops	62.2	15.7	-	4.1	9.3	7.0	1.7	100
Other cereals	-	-	-	-	100.0	-	-	100
Fodder crops	55.9	5.9	23.5	-	5.9	-	8.8	100
Maize	4.4	3.0	44.7	40.7	4.6	2.3	0.4	100
Paddy rice	6.8	30.1	1.5	0.8	0.8	60.2	-	100
Sorghum	-	-	100.0	-	-	-	-	100
Wheat	16.1	16.1	55.4	-	3.6	5.4	3.6	100
Bush bean	67.1	4.3	4.3	18.6	2.9	1.4	1.4	100
Climbing bean	38.5	7.7	7.7	23.1	-	23.1	-	100
Pea	100.0	-	-	-	-	-	-	100
Irish potato	11.9	54.8	7.1	2.4	13.1	10.7	-	100
Sweet potato	-	50.0	-	50.0	-	-	-	100
Soybean	33.3	3.7	33.3	18.5	7.4	3.7	-	100
Groundnut	-	-	100.0	-	-	-	-	100
Cooking banana	20.0	46.7	-	6.7	13.3	6.7	6.7	100
Dessert banana	22.9	48.6	-	8.6	8.6	2.9	8.6	100
Banana for beer	26.1	65.2	-	4.4	-	-	4.4	100
Cassava	30.0	30.0	10.0	10.0	20.0	-	-	100

Source: NISR, SAS 2021

Table 21: Season B 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	51.3	51.3		43.8	43.8		50.4	50.4	
Gasabo	58.7	58.0	80.0	52.5	52.4	77.4	58.1	57.5	79.2
Kicukiro	40.4	39.2	100.0	26.9	26.9	91.7	39.8	39.7	44.6
Nyanza	42.0	41.7	66.7	36.4	36.4	71.4	39.7	38.8	74.5
Gisagara	45.3	46.0	25.0	42.2	42.2	22.7	39.2	43.4	7.7
Nyaruguru	79.1	78.5	100.0	70.7	70.7	84.6	74.8	74.5	99.0
Huye	59.9	58.8	84.2	53.5	53.5	84.2	55.7	54.4	84.5
Nyamagabe	70.8	70.8	100.0	67.2	67.2	75.0	67.8	67.8	83.4
Ruhango	49.4	49.1	63.6	43.1	43.1	62.5	47.5	46.6	80.8
Muhanga	70.9	70.8	80.0	58.9	58.9	90.0	66.1	66.1	69.9
Kamonyi	58.1	57.8	75.0	55.1	55.1	66.7	55.6	55.4	73.8
Karongi	68.6	68.5	100.0	59.8	59.8	100.0	65.3	65.2	100.0
Rutsiro	64.8	64.8		57.7	57.7		61.4	61.4	
Rubavu	32.1	31.6	75.0	32.1	32.1	33.3	36.5	36.4	62.9
Nyabihu	68.1	68.1		59.3	59.3		64.0	64.0	
Ngororero	88.0	88.0		83.4	83.4		88.2	88.2	
Rusizi	53.6	53.9	40.0	53.8	53.8	28.6	50.3	51.9	22.6
Nyamasheke	69.2	68.8	87.5	65.2	65.2	88.9	62.5	62.0	92.4
Rulindo	83.3	83.4	80.0	81.2	81.2	72.7	80.8	80.9	67.6
Gakenke	82.0	82.0		77.8	77.8		79.4	79.4	
Musanze	63.6	63.6		64.7	64.7		65.3	65.3	
Burera	72.2	72.2		68.5	68.5		69.5	69.5	
Gicumbi	74.7	74.6	100.0	71.3	71.3	81.8	71.3	71.2	88.0
Rwamagana	49.7	48.0	85.2	45.9	45.9	55.3	46.1	45.8	64.9
Nyagatare	34.6	32.7	61.5	35.0	35.0	61.2	32.7	32.9	26.4
Gatsibo	54.4	54.4	52.6	51.5	51.5	51.6	50.5	52.3	6.4
Kayonza	40.0	38.5	70.0	34.2	34.2	48.5	35.6	36.5	10.6
Kirehe	31.0	30.1	90.0	23.4	23.4	91.7	33.4	30.3	98.3
Ngoma	30.3	29.5	62.5	25.0	25.0	49.0	31.9	31.8	37.5
Bugesera	35.1	34.0	52.8	35.0	35.0	37.2	37.2	35.9	72.7
National	56.3	56.1	67.7	55.3	55.3	57.4	52.7	52.9	45.2

Source: NISR, SAS 2021

Table 22: Season B 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	11.1	11.1		7.8	7.8		10.0	10.0	
Gasabo	23.8	22.6	60.0	17.6	17.6	17.0	22.5	21.1	74.1
Kicukiro	37.0	36.2	75.0	22.6	22.6	66.7	33.9	32.7	87.3
Nyanza	18.0	17.0	100.0	11.6	11.6	100.0	17.6	15.6	100.0
Gisagara	27.0	24.4	100.0	22.2	22.2	81.8	30.8	21.7	99.9
Nyaruguru	55.5	54.3	90.0	50.6	50.6	84.6	51.4	50.8	94.3
Huye	18.2	14.7	100.0	11.7	11.7	100.0	17.9	14.4	100.0
Nyamagabe	38.1	38.0	100.0	24.6	24.6	75.0	35.5	35.4	83.4
Ruhango	13.4	12.0	81.8	9.4	9.4	37.5	12.1	9.8	97.5
Muhanga	16.7	15.6	100.0	12.9	12.9	100.0	14.0	13.3	100.0
Kamonyi	12.3	11.2	87.5	9.9	9.9	73.3	11.2	10.2	96.0
Karongi	29.9	29.7	100.0	22.7	22.7	50.0	27.2	27.2	93.7
Rutsiro	41.6	41.6		35.1	35.1		38.6	38.6	
Rubavu	50.3	50.3	50.0	42.0	42.0	33.3	54.3	54.3	58.8
Nyabihu	72.3	72.3		54.6	54.6		69.2	69.2	
Ngororero	47.2	47.2		40.2	40.2		46.3	46.3	
Rusizi	35.3	34.1	90.0	30.4	30.4	64.3	35.7	31.9	98.9
Nyamasheke	49.6	48.7	100.0	47.0	47.0	100.0	43.2	42.2	100.0
Rulindo	25.4	24.5	100.0	18.5	18.5	90.9	21.2	20.9	98.1
Gakenke	45.6	45.6		42.6	42.6		43.3	43.3	
Musanze	50.6	50.6		45.0	45.0		57.7	57.7	
Burera	35.8	35.8		27.8	27.8		33.6	33.6	
Gicumbi	30.2	29.8	100.0	23.3	23.3	81.8	27.4	27.3	87.0
Rwamagana	34.6	33.6	55.6	27.0	27.0	33.0	31.1	30.3	71.0
Nyagatare	47.6	45.9	71.8	31.8	31.8	58.2	44.6	43.1	90.3
Gatsibo	28.1	26.6	79.0	19.6	19.6	46.9	28.2	25.6	89.6
Kayonza	32.3	30.0	80.0	20.8	20.8	32.0	31.9	30.0	88.3
Kirehe	24.4	23.6	80.0	17.9	17.9	91.7	26.4	23.0	97.0
Ngoma	15.2	13.3	87.5	8.7	8.7	45.1	13.8	12.1	91.8
Bugesera	31.6	30.0	58.3	24.0	24.0	36.4	27.0	25.1	76.8
National	32.7	31.8	78.5	26.2	26.2	50.0	31.5	30.0	92.1

Source: NISR, SAS 2021

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

District	Government (MINAGRI/RAB/NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	4.4	87.0	-	8.7	-	-	100
Gasabo	18.7	62.7	-	13.3	4.0	1.3	100
Kicukiro	1.3	81.6	6.6	10.5	-	-	100
Nyanza	9.3	21.7	57.7	1.0	6.2	4.1	100
Gisagara	7.1	22.8	46.5	12.6	11.0	-	100
Nyaruguru	5.0	12.3	73.2	6.7	2.2	0.6	100
Huye	6.0	55.4	31.3	6.0	-	1.2	100
Nyamagabe	0.6	38.9	49.4	6.8	4.3	-	100
Ruhango	11.0	42.5	12.3	9.6	24.7	-	100
Muhanga	1.5	35.3	39.7	14.7	8.8	-	100
Kamonyi	9.1	60.6	22.7	-	7.6	-	100
Karongi	12.7	34.8	50.0	0.9	1.7	-	100
Rutsiro	2.0	54.3	42.4	1.3	-	-	100
Rubavu	1.5	75.0	13.3	9.7	0.5	-	100
Nyabihu	-	82.6	17.1	0.4	-	-	100
Ngororero	2.3	43.8	53.0	0.9	-	-	100
Rusizi	4.2	15.8	72.1	7.3	0.6	-	100
Nyamasheke	1.3	19.0	79.7	-	-	-	100
Rulindo	-	71.4	17.1	9.5	1.0	1.0	100
Gakenke	2.6	61.6	27.6	6.0	1.9	0.4	100
Musanze	-	87.0	8.4	2.5	2.1	-	100
Burera	0.6	78.7	9.6	2.3	9.0	-	100
Gicumbi	5.2	86.2	3.5	4.6	0.6	-	100
Rwamagana	4.0	44.1	42.1	6.9	2.5	0.5	100
Nyagatare	1.4	48.0	37.4	8.5	3.9	0.7	100
Gatsibo	1.1	34.0	57.5	5.9	1.6	-	100
Kayonza	6.3	36.4	48.3	5.6	3.5	-	100
Kirehe	1.8	28.7	48.8	9.8	9.2	1.8	100
Ngoma	8.3	24.0	40.6	22.9	3.1	1.0	100
Bugesera	4.4	52.7	31.5	6.9	3.9	0.5	100
National	3.5	50.3	36.9	5.9	3.1	0.4	100

Source: NISR, SAS 2021

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

Fertilizer name	Government (MINAGRI/RAB/NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source
NPK 17-17-17	2.7	65.9	23.0	3.9	4.2	0.3
NPK 20-10-10	68.6	11.4	8.6	2.9	8.6	-
NPK 25-5-5	48.2	7.4	14.8	-	18.5	11.1
NPK 22-6-12	65.0	12.5	12.5	2.5	7.5	-
Other NPK	2.6	92.3	-	-	5.1	-
Urea	2.2	47.2	39.8	6.9	3.7	0.4
liquid urea (Mbonea M)	-	81.6	11.8	4.0	2.6	-
DAP	1.9	46.6	44.3	4.4	2.7	0.2
TSP	-	-	100.0	-	-	-
KCL/MOP	-	88.9	11.1	-	-	-
Omax	-	67.9	32.1	-	-	-
Winner	-	71.4	-	14.3	14.3	-
Yara Viva	6.3	87.5	-	3.1	3.1	-
Amidas	-	38.0	20.0	8.0	34.0	-
Cereal	3.7	38.9	18.5	7.4	31.5	-
Boaster	-	100.0	-	-	-	-
DI Grow	-	70.8	8.3	8.3	12.5	-
Other type of fertilizer	1.9	75.9	16.7	3.7	1.9	-
National	2.9	51.0	36.9	5.1	3.9	0.3

Source: NISR, SAS 2021

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

District	Fertilize type							
	NPK 17-17-17	NPK 20-10-10	NPK 25-5-5	Urea	Liquid urea	DAP	KCL/MOP	Others
Nyarugenge	15.4	-	-	48.7	-	30.8	-	5.1
Gasabo	13.6	-	-	49.2	-	34.8	-	2.5
Kicukiro	11.6	-	-	38.8	-	42.6	-	7.0
Nyanza	11.9	-	7.5	38.8	0.6	38.1	-	3.1
Gisagara	9.3	1.5	-	41.7	-	34.8	-	12.8
Nyaruguru	8.9	0.7	0.7	30.9	-	58.4	-	0.4
Huye	23.1	3.0	0.8	40.3	-	29.1	-	3.7
Nyamagabe	19.9	1.7	-	32.1	-	43.2	-	3.1
Ruhango	25.0	-	-	39.8	-	30.6	0.9	3.7
Muhanga	17.0	2.0	-	31.0	-	50.0	-	-
Kamonyi	21.6	-	-	41.4	-	31.5	0.9	4.5
Karongi	14.4	-	-	24.4	-	53.1	-	8.1
Rutsiro	33.3	-	-	21.3	0.5	43.5	-	1.4
Rubavu	40.3	-	0.3	20.6	7.5	26.4	-	4.9
Nyabihu	36.4	0.2	-	24.0	5.0	24.0	0.2	10.2
Ngororero	6.3	-	-	40.6	-	53.1	-	-
Rusizi	16.6	2.2	-	19.7	0.9	55.0	0.4	5.3
Nyamasheke	8.5	-	0.3	21.3	-	65.2	-	4.7
Rulindo	19.1	1.0	-	37.2	-	36.7	1.5	4.5
Gakenke	8.1	0.7	0.7	30.6	0.2	58.9	-	0.8
Musanze	35.6	-	-	21.7	3.0	33.3	-	6.3
Burera	34.4	-	-	15.9	2.2	45.4	-	2.2
Gicumbi	21.0	-	-	37.8	0.4	40.3	-	0.4
Rwamagana	18.0	-	-	39.0	-	36.2	-	6.9
Nyagatare	6.7	-	-	46.4	0.2	43.3	-	3.4
Gatsibo	14.4	0.3	-	43.9	-	39.6	-	1.8
Kayonza	23.7	0.8	0.4	36.2	-	31.9	0.8	6.2
Kirehe	7.0	-	2.1	40.8	0.7	41.1	-	8.4
Ngoma	15.8	2.5	-	41.1	0.6	32.9	-	7.0
Bugesera	14.5	0.3	-	30.8	-	51.6	-	2.8
National	18.5	0.5	0.4	33.1	1.0	42.1	0.1	4.4

Source: NISR, SAS 2021

Table 26: Season B 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	13.1	13.1		11.3	11.3		10.7	10.7	
Gasabo	18.1	16.1	80.0	11.9	11.9	39.6	17.2	15.6	76.9
Kicukiro	16.3	15.1	75.0	8.0	8.0	75.0	16.1	14.3	92.4
Nyanza	13.8	12.8	100.0	9.7	9.7	85.7	14.4	12.4	93.5
Gisagara	13.7	10.9	93.8	9.4	9.4	68.2	20.5	10.0	99.8
Nyaruguru	17.1	15.1	80.0	13.9	13.9	69.2	17.0	16.0	88.3
Huye	12.5	8.9	94.7	5.6	5.6	94.7	12.7	9.1	95.3
Nyamagabe	13.9	13.7	100.0	7.9	7.9	100.0	14.4	14.3	100.0
Ruhango	8.4	6.7	90.9	5.1	5.1	41.7	8.4	6.2	90.4
Muhanga	12.2	11.1	100.0	9.1	9.1	80.0	10.4	9.8	84.7
Kamonyi	10.4	9.1	100.0	8.0	8.0	93.3	8.8	7.7	99.3
Karongi	7.9	7.9	-	7.4	7.4	-	7.6	7.6	-
Rutsiro	23.7	23.7		14.6	14.6		23.7	23.7	
Rubavu	48.2	48.2	50.0	37.6	37.6	22.2	54.0	54.0	53.8
Nyabihu	58.1	58.1		47.8	47.8		58.4	58.4	
Ngororero	19.0	19.0		14.7	14.7		21.8	21.8	
Rusizi	8.2	6.8	70.0	5.0	5.0	50.0	10.3	5.7	87.0
Nyamasheke	6.6	4.9	100.0	3.7	3.7	88.9	6.3	4.8	99.1
Rulindo	17.9	17.1	80.0	12.4	12.4	54.6	14.9	14.7	71.6
Gakenke	17.2	17.2		15.3	15.3		15.7	15.7	
Musanze	56.8	56.8		50.2	50.2		61.3	61.3	
Burera	27.4	27.4		22.1	22.1		25.6	25.6	
Gicumbi	18.3	17.9	100.0	12.9	12.9	45.5	14.2	14.2	26.3
Rwamagana	19.3	17.0	66.7	14.9	14.9	37.9	16.6	15.5	73.2
Nyagatare	18.0	13.6	79.5	8.5	8.5	64.3	14.9	12.4	87.9
Gatsibo	15.6	14.4	57.9	8.4	8.4	28.1	16.4	13.5	85.2
Kayonza	15.1	11.8	85.0	6.3	6.3	29.9	14.5	11.9	86.7
Kirehe	8.7	7.3	100.0	5.2	5.1	66.7	11.0	7.0	94.7
Ngoma	6.9	5.0	81.3	4.4	4.4	51.0	6.5	4.7	89.8
Bugesera	12.6	9.6	63.9	6.8	6.7	38.0	11.1	8.6	77.5
National	17.9	16.6	79.5	13.0	13.0	48.2	16.8	15.1	89.1

Source: NISR, SAS 2021

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

District	Type of pesticides							
	Dithane	Ridomil	Dimethoate	Cypermethrin	Dursiban	Rocket	Beam	Others
Nyarugenge	31.0	-	20.7	5.2	-	31.0	-	12.1
Gasabo	25.0	2.8	3.7	14.8	-	41.7	1.9	12.0
Kicukiro	19.7	-	9.1	9.1	-	37.9	-	24.2
Nyanza	13.0	1.0	1.0	13.0	-	63.0	4.0	9.0
Gisagara	8.3	-	1.2	21.4	-	47.6	10.7	21.4
Nyaruguru	33.8	4.1	-	16.2	-	29.7	-	16.2
Huye	12.1	-	-	30.1	-	27.7	13.3	30.1
Nyamagabe	50.5	1.1	-	26.3	-	21.1	-	1.1
Ruhango	10.0	-	-	13.3	-	63.3	8.3	13.3
Muhanga	11.7	1.7	8.3	6.7	-	66.7	5.0	5.0
Kamonyi	26.7	7.9	3.0	13.9	-	37.6	2.0	10.9
Karongi	30.0	-	15.0	22.5	-	30.0	-	2.5
Rutsiro	61.3	2.5	1.7	18.5	-	12.6	-	3.4
Rubavu	33.8	26.4	21.9	15.0	-	1.9	-	1.0
Nyabihu	31.2	21.4	19.2	15.4	-	6.7	-	6.2
Ngororero	20.4	1.0	2.0	11.2	-	61.2	-	4.1
Rusizi	22.4	-	11.9	31.3	-	23.9	-	10.5
Nyamasheke	8.0	4.0	14.0	30.0	-	16.0	2.0	28.0
Rulindo	30.0	3.3	3.3	8.3	-	46.7	0.8	8.3
Gakenke	20.0	4.2	2.5	38.3	-	28.3	-	6.7
Musanze	39.3	8.7	13.6	15.2	-	15.4	-	7.9
Burera	38.0	14.8	3.8	27.9	-	13.9	-	1.7
Gicumbi	55.1	2.4	-	3.2	-	36.2	-	3.2
Rwamagana	26.3	1.3	7.6	9.3	-	25.9	2.5	29.7
Nyagatare	15.8	2.8	8.7	9.5	0.4	28.4	2.4	34.6
Gatsibo	20.6	-	3.1	5.6	-	56.9	1.9	13.7
Kayonza	23.3	2.1	7.5	11.0	-	27.4	4.1	28.8
Kirehe	18.3	4.8	13.5	19.1	-	20.6	7.1	23.8
Ngoma	23.0	1.2	12.6	23.0	-	27.6	4.6	12.6
Bugesera	14.7	6.5	9.2	15.8	-	38.0	7.1	15.8
National	28.8	9.0	10.2	15.8	0.0	24.6	1.8	11.7

Source: NISR, SAS 2021

Table 28: Percentage of farmers who practiced agricultural practices in Season B 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	67.8	67.8		1.5	1.5		8.0	8.0		46.3	46.3	
Gasabo	94.3	94.1	100.0	0.6	-	20.0	9.5	7.9	60.0	54.5	54.1	66.7
Kicukiro	63.1	62.3	100.0	2.5	1.5	50.0	13.8	12.6	75.0	53.9	53.7	60.0
Nyanza	94.5	94.5	100.0	0.6	0.6	-	10.4	9.6	83.3	27.1	27.1	28.6
Gisagara	86.9	86.4	100.0	0.4	0.4	-	13.1	10.4	87.5	38.2	39.5	9.1
Nyaruguru	98.4	98.4	100.0	0.6	0.6	-	5.3	3.2	70.0	39.1	38.1	80.0
Huye	95.8	95.7	100.0	-	-	-	18.0	14.7	94.7	40.5	41.3	24.0
Nyamagabe	90.6	90.6	100.0	0.7	0.7	-	3.1	3.1	-	31.0	30.9	100.0
Ruhango	92.1	92.0	100.0	0.6	0.6	-	12.3	11.1	72.7	29.6	29.6	33.3
Muhanga	97.8	97.7	100.0	0.5	0.5	-	3.7	2.8	80.0	21.2	20.7	50.0
Kamonyi	91.8	91.7	100.0	0.2	0.2	-	10.8	9.8	75.0	32.8	32.7	40.0
Karongi	98.2	98.2	100.0	0.3	0.3	-	7.6	7.4	100.0	41.0	40.9	100.0
Rutsiro	99.4	99.4		-	-		0.3	0.3		36.4	36.4	
Rubavu	91.0	90.9	100.0	0.3	0.3	-	0.5	0.5	-	29.7	29.8	25.0
Nyabihu	98.4	98.4		-	-		0.8	0.8		47.2	47.2	
Ngororero	94.8	94.8		0.7	0.7		0.2	0.2		23.7	23.7	
Rusizi	86.5	86.2	100.0	1.1	1.1	-	11.2	9.9	70.0	59.0	59.3	40.0
Nyamasheke	92.7	92.6	100.0	-	-	-	10.6	9.6	62.5	57.0	57.4	33.3
Rulindo	99.3	99.3	100.0	0.5	0.2	20.0	7.3	6.6	60.0	23.4	23.3	40.0
Gakenke	99.5	99.5		0.3	0.3		4.4	4.4		45.3	45.3	
Musanze	92.8	92.8		0.4	0.4		1.7	1.7		27.2	27.2	
Burera	96.2	96.2		0.4	0.4		2.4	2.4		24.0	24.0	
Gicumbi	97.0	97.0	100.0	-	-	-	8.4	8.4	-	26.9	26.6	100.0
Rwamagana	94.4	94.2	100.0	1.4	0.6	18.5	13.7	11.7	55.6	50.2	48.9	76.7
Nyagatare	72.4	72.4	71.8	5.9	2.5	53.9	7.1	3.5	59.0	31.0	30.5	39.5
Gatsibo	96.1	96.0	100.0	0.8	0.3	15.8	7.2	6.0	47.4	54.6	54.7	50.0
Kayonza	76.8	75.9	95.0	2.0	0.2	40.0	10.8	7.8	75.0	37.0	37.4	27.3
Kirehe	85.6	85.7	80.0	1.2	0.8	30.0	14.7	13.5	90.0	45.3	45.7	23.1
Ngoma	89.5	89.2	100.0	0.3	0.2	6.3	10.3	9.1	56.3	49.6	50.0	35.3
Bugesera	74.7	74.3	80.6	1.1	0.5	11.1	13.9	11.4	55.6	38.6	37.6	55.0
National	90.8	90.7	92.7	0.8	0.5	17.4	8.3	7.2	64.9	38.4	38.3	43.5

Source: NISR, SAS 2021

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

District	Modern irrigation					Traditional techniques
	Surface irrigation	Flood irrigation	Drip irrigation	Sprinkler irrigation	Pivot irrigation	
Nyarugenge	37.5	-	-	-	-	62.5
Gasabo	33.3	-	13.3	-	-	53.3
Kicukiro	33.3	5.6	-	5.6	-	55.6
Nyanza	14.3	57.1	-	-	-	28.6
Gisagara	4.0	64.0	-	-	-	32.0
Nyaruguru	72.7	-	-	-	-	27.3
Huye	-	90.0	-	-	-	10.0
Nyamagabe	22.2	66.7	-	-	-	11.1
Ruhango	10.0	63.3	-	-	-	26.7
Muhanga	-	40.0	20.0	-	-	40.0
Kamonyi	11.8	11.8	-	-	-	76.5
Karongi	20.0	-	-	-	-	80.0
Rusizi	-	81.8	-	-	-	18.2
Nyamasheke	11.1	44.4	-	-	-	44.4
Rulindo	-	5.3	-	5.3	36.8	52.6
Gakenke	25.0	12.5	-	-	-	62.5
Musanze	-	-	-	-	-	100.0
Burera	-	-	-	-	-	100.0
Gicumbi	16.7	-	-	-	-	83.3
Rwamagana	40.5	14.3	16.7	-	7.1	21.4
Nyagatare	62.5	12.5	-	-	16.7	8.3
Gatsibo	46.4	10.7	-	7.1	-	35.7
Kayonza	28.2	15.4	-	20.5	2.6	33.3
Kirehe	11.1	14.8	-	44.4	13.0	16.7
Ngoma	-	19.2	3.9	30.8	-	46.2
Bugesera	31.1	42.2	-	6.7	-	20.0
National	24.8	26.9	2.1	9.0	5.0	32.3

Source: NISR, SAS 2021

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

District	Source of water				
	Rainwater	Water treatment	Underground	Lake / streams	Water catchment
Nyarugenge	-	25.0	-	75.0	-
Gasabo	6.7	-	33.3	46.7	13.3
Kicukiro	-	21.7	21.7	56.5	-
Nyanza	-	-	43.8	31.3	25.0
Gisagara	3.9	-	50.0	38.5	7.7
Nyaruguru	-	-	9.1	90.9	-
Huye	-	-	34.5	51.7	13.8
Nyamagabe	-	-	22.2	77.8	-
Ruhango	-	3.1	46.9	46.9	3.1
Muhanga	-	-	40.0	20.0	40.0
Kamonyi	-	-	46.2	50.0	3.9
Karongi	-	10.0	30.0	60.0	-
Rusizi	-	-	27.3	72.7	-
Nyamasheke	-	11.1	66.7	22.2	-
Rulindo	5.3	10.5	21.1	57.9	5.3
Gakenke	-	-	62.5	37.5	-
Musanze	-	-	66.7	33.3	-
Burera	-	-	100.0	-	-
Gicumbi	-	33.3	33.3	33.3	-
Rwamagana	-	11.4	18.2	38.6	29.6
Nyagatare	2.0	2.0	8.2	44.9	42.9
Gatsibo	-	3.5	17.2	58.6	20.7
Kayonza	2.4	4.8	21.4	59.5	11.9
Kirehe	-	-	19.3	77.2	3.5
Ngoma	23.5	20.6	17.7	32.4	5.9
Bugesera	2.2	2.2	37.8	42.2	15.6
National	2.47	5.47	27.87	51.15	12.87

Source: NISR, SAS 2021

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

District	Type of anti-erosion activities									
	Ditches	Trees/Windbreak/ shelterbelt	Bench terraces	Progressive terraces	Cover plants	Water drainage	Mulching	Beds/ridges	Water channels	Others
Nyarugenge	5.0	19.8	-	13.5	51.7	-	8.5	0.6	0.9	-
Gasabo	14.5	4.7	0.1	33.1	38.7	0.2	1.0	0.7	7.0	-
Kicukiro	6.9	23.3	1.8	10.2	18.8	0.1	6.2	6.5	26.1	-
Nyanza	7.1	4.1	3.1	5.5	56.7	0.0	0.9	3.0	19.7	-
Gisagara	5.9	2.5	3.3	20.5	45.1	0.5	1.0	4.6	16.7	-
Nyaruguru	16.0	7.1	2.1	2.6	53.9	6.8	0.7	1.3	9.5	-
Huye	6.4	4.6	2.1	25.9	48.3	0.1	0.8	0.2	11.7	-
Nyamagabe	3.7	1.1	9.8	13.7	60.7	0.7	2.1	0.1	8.1	-
Ruhango	4.5	7.3	0.3	3.3	64.5	0.9	0.7	8.6	10.0	-
Muhanga	0.6	1.4	3.3	8.8	75.2	0.0	4.3	5.2	1.1	0.1
Kamonyi	6.6	1.1	-	2.8	65.0	2.9	2.2	5.1	14.4	-
Karongi	14.8	2.5	1.9	16.7	54.1	-	0.9	0.0	9.1	-
Rutsiro	6.6	8.6	7.0	3.3	63.6	1.3	6.3	0.2	3.0	0.1
Rubavu	2.8	8.8	8.4	3.4	30.6	-	0.7	45.1	0.3	-
Nyabihu	1.4	1.2	11.9	9.5	61.1	-	0.1	14.2	0.6	-
Ngororero	10.6	0.2	4.7	1.0	76.8	0.4	0.4	4.5	1.5	-
Rusizi	22.8	10.6	0.1	10.9	43.9	1.3	3.5	1.8	5.0	-
Nyamasheke	3.7	9.1	4.3	4.2	68.9	0.1	1.6	0.5	7.4	0.3
Rulindo	0.5	4.5	10.5	7.8	68.5	0.4	0.6	0.3	7.1	-
Gakenke	15.8	1.8	4.3	2.7	62.7	0.0	5.8	1.4	5.6	-
Musanze	0.4	5.4	7.7	2.3	35.7	-	0.4	44.3	3.8	-
Burera	4.0	2.9	3.7	1.5	61.7	-	0.2	20.8	5.4	-
Gicumbi	0.2	4.2	7.4	23.2	57.1	0.0	0.8	0.0	7.2	-
Rwamagana	2.4	12.2	2.9	18.7	57.2	0.1	3.3	0.3	2.9	0.0
Nyagatare	5.8	17.7	0.1	19.7	39.7	0.1	9.3	1.6	6.0	-
Gatsibo	2.6	4.7	1.2	7.3	69.0	0.8	7.0	3.6	3.8	-
Kayonza	2.6	1.0	15.5	0.9	45.9	9.9	10.8	0.3	13.1	-
Kirehe	4.1	2.5	0.6	7.9	70.3	0.9	9.2	1.3	3.1	0.1
Ngoma	4.0	3.9	4.1	3.1	70.9	0.1	6.9	4.7	2.4	-
Bugesera	6.5	14.3	-	7.0	54.4	3.8	5.9	6.6	1.6	-
National	6.7	4.6	4.5	9.5	58.7	1.0	2.6	5.5	6.9	0.0

Source: NISR, SAS 2021

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

District	Degree of erosion			
	Severe (Rill erosion, Gully erosion, Mass movement/Landslides)	Moderate (Diffuse overland flow erosion, overland flow erosion)	Low (wind erosion)	Very Low (splash erosion)
Nyarugenge	0.6	2.1	26.9	70.5
Gasabo	0.1	18.5	7.8	73.6
Kicukiro	-	-	39.1	60.9
Nyanza	4.6	30.3	44.0	21.1
Gisagara	-	2.3	13.7	84.1
Nyaruguru	-	7.1	65.1	27.8
Huye	0.3	13.0	41.2	45.5
Nyamagabe	0.2	0.9	0.4	98.5
Ruhango	1.7	4.5	7.8	86.1
Muhanga	1.1	14.8	54.5	29.7
Kamonyi	1.2	9.0	41.0	48.9
Karongi	2.1	20.0	37.1	40.8
Rutsiro	0.5	11.4	51.4	36.7
Rubavu	0.2	2.0	4.1	93.6
Nyabihu	2.2	26.4	42.1	29.3
Ngororero	7.1	11.8	1.3	79.8
Rusizi	2.4	8.9	56.2	32.5
Nyamasheke	1.7	25.8	15.2	57.3
Rulindo	2.4	11.4	19.9	66.4
Gakenke	2.1	13.1	41.6	43.2
Musanze	0.6	9.5	50.3	39.5
Burera	0.7	21.3	22.5	55.6
Gicumbi	5.2	19.4	21.4	54.1
Rwamagana	0.5	21.3	22.1	56.2
Nyagatare	5.0	11.3	22.6	61.2
Gatsibo	0.7	2.0	7.1	90.3
Kayanza	0.2	2.4	66.5	30.9
Kirehe	0.6	7.4	27.6	64.4
Ngoma	0.5	7.9	23.2	68.5
Bugesera	0.6	1.6	20.7	77.1
National	1.6	12.0	29.8	56.6

Source: NISR, SAS 2021

STAFF WHO CONTRIBUTED TO THE SEASONAL AGRICULTURAL SURVEY 2021 SEASON B

National Coordinators

- Yusuf MURANGWA, Director General of NISR
- Ivan MURENZI, Deputy Director General of NISR

Technical coordination

- MWIZERWA Jean Claude, Director of Economic Statistics Unit
- ABAYISENGA Aimable, Agriculture and Environmental statistician Team Leader
- BIZIMUNGU Clément, Field operations Cartographer Officer

Field work coordination

- KAMANZI SHINGIRO Jean Philbert, Research assistant
- MUKAMAZIMPAKA Francine, Perennial crops and horticulture statistician
- UWIZEYIMANA Lambert, Forestry and environmental statistics statistician
- RWAYITARE Jean Bosco, Research assistant

Data analysis

- ABAYISENGA Aimable, Agriculture and Environmental statistician Team Leader
- BURAMBA Eric, Seasonal Crop production Statistician
- UWAMA HORO Didas, Regional price and economic data collector officer
- MUVUNYI Issa, Livestock and fisheries production statistician
- MUTEBUTSI Alexis, Research assistant
- MUREBWAYIRE Divine, Research assistant
- UWIZEYIMANA Lambert, Forestry and environmental statistics statistician

GIS

- BIZIMUNGU Clément, Field operations Cartographer Officer
- KARERA Albert, Geometrician in charge of map design & production
- NTAWIHA Athanasie, GIS staff
- IRAMBONA Eddy Marcus, GIS staff
- NIYITEGEKA Beata, Cartographer support staff
- NDAZIGARUYE Alfred, Cartographer support staff
- NGABO MUHIRE Olympe, GIS Support Staff

Data processing

- SEBAHIRE Jean Népomuscène, Food Security & Agriculture Surveys Data Processing Officer
- RWAYITARE Jean Bosco, Research assistant

Report writing and editing

- MUTEBUTSI Alexis, Research assistant
- UWAMA HORO Didas, Regional price and economic data collector officer
- MUVUNYI Issa, Livestock and fisheries production statistician