The Republic of Rwanda

NATIONAL INSTITUTE OF STATISTICS OF RWANDA

SEASONAL AGRICULTURAL SURVEY (SAS)

2022

ANNUAL REPORT

December 2022

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FOREWORD

Since 2012, the National Institute of Statistics of Rwanda (NISR), in collaboration with the Ministry of Agriculture and Animal Resources (MINAGRI), the National Agricultural Export Development Board (NAEB), and the Rwanda Agriculture and Animal Resources Development Board (RAB), conducts the annual Seasonal Agricultural Survey following the three Rwanda agricultural seasons. The survey aims at estimating the national crop production, cultivated and harvested area, crop yield, agricultural inputs, and practices crucial for monitoring progress on agriculture programs and policies in Rwanda.

This published report reflects the importance of the Seasonal Agricultural Survey (SAS) information for use as a tool to assist in addressing key agricultural issues and information needs that will inform policymakers and other stakeholders and allow more effective identification of priority intervention needs.

Therefore, I recommend stakeholders, government, researchers, partners and the general public to optimally make use of the findings of this report.

I am grateful to NISR staff and other stakeholders who worked tirelessly to ensure the 2022 Seasonal agricultural survey was successfully implemented.

MURANGWA Yusuf
Director General, NISR

EXECUTIVE SUMMARY

This report highlights the findings of the Seasonal Agricultural Survey (SAS) for the agricultural year 2021/2022. It covers three agricultural seasons; Season A which starts from September to February of the following year and Season B which starts from March to June. Season C is the shortest agricultural season with vegetables and sweet potato predominantly grown in swamps and Irish potato mostly grown in the volcanic agro-ecological zone. This report, therefore, consolidates the findings of all seasons and hence, highlights the findings mainly related to:

1. Land use:
    - Agricultural land: this indicates land potential for agriculture, including land currently being used for farming as well as land that can be brought back into cultivation (fallow or pastureland).
    - Arable land: land able to be grown and produce crops for food and feeds supply purpose. This area excludes land under permanent crops[1] and permanent pasture.
    - Physical crop cultivated area: area occupied by crops. In other words, it can be called cropland;
    - Pastureland: 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 grown crop.
3. Crop production: Amount of harvested crop used for food or livestock (quantified into kilograms or tons.)
4. Crop yield: It is a measurement of the amount of crop harvested per unit of land area (kg per hectare). It is used to determine the efficiency of crop production.
5. Use of inputs (this assesses the level of using improved seeds, fertilizers and pesticides)
6. Agricultural practices (practice of irrigation and soil erosion control) and others.

Estimates provided in this report are summarized as totals, percentages and averages at district and national levels. They are based on data obtained by a sample of surveyed small-scale plots and large-scale farmers. The data related to tea and coffee are obtained from administrative records collected by National Agricultural Export Development Board (NAEB) through the routine activities of monitoring coffee and tea production, and coffee census conducted every five years.

Land use

Results of SAS 2022 shows that, out of 2.377 million hectares of total country land, agricultural land (land potential for agriculture) covered 1.402 million hectares (59% of total country land) in Season A compared to 1.393 million hectares (58.6% of total country land) in season B. Out of the total agricultural land, 1.067 million hectares was used for Seasonal crops in season A compared to 1.014 million hectares in season B.

[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…).

Around 0.6 million hectares are area under permanent crops in both seasons A and B, while 0.135 million hectares was used under permanent pasture in season A compared to 0.133 million hectares in season B.

Use of inputs

In 2022 agricultural year, 33.1 percent of farmers used improved seed in season A compared to 8.7 percent in season B and 26.1 percent in season C. In regards to use of fertilizers, 69.7 percent of farmers applied organic fertilisers in season A compared to 57.9 percent in season B and 82.3 percent in season C, while 38.6 percent applied inorganic fertilizers in season A against 27.5 percent in season B and 71.5 percent in season C. Moreover, 19.8 percent of farmers used pesticides in season A compared to 15.9 percent in season B and 70.1 percent in season C.

Agricultural practices

In regard to agricultural practices, over 90 percent of interviewed farmers protected the cultivated land against soil erosion throughout the year. 8.2 percent of farmers practiced irrigation in seasons A compared to 8 percent in season B and 62.9 percent in season C.The main indicators covered during the SAS 2022 are summarized in table 0:

Table 0. Summary of Seasonal Agricultural Survey main indicators

SAS main indicators	SAS 2020			SAS 2021			SAS 2022		
	Season			Season			Season		
	A	B	C	A	B	C	A	B	C
Cultivated area for major crops (Ha)									
Maize	221,521	72,918	-	236,642	80,570	-	219,683	81,339	-
Sorghum	33,295	136,124	-	33,636	133,033	-	37,469	139,793	-
Paddy rice	14,507	15,077	-	15,374	16,302	-	15,840	16,517	-
Wheat	4,187	8,122	-	4,418	8,749	-	3,495	8,482	-
Cassava	190,447	192,156	-	200,313	147,320	-	186,204	152,470	-
Sweet potato	89,427	84,545	5,583	99,496	87,762	5,226	97,771	92,056	5,079
Irish potato	51,516	43,950	9,028	52,196	51,595	9,667	56,442	52,858	10,458
Yams & Taro	18,058	14,565	-	17,119	15,088	-	40,424	19,245	-
Banana	272,500	207,635	-	280,779	202,807	-	259,505	213,322	-
Cooking banana	106,409	62,054	-	108,451	71,262	-	96,434	73,554	-
Dessert banana	39,688	30,911	-	41,394	37,668	-	36,598	37,511	-
Banana for beer	126,402	114,670	-	130,934	93,877	-	126,472	102,257	-
Bean	362,199	278,213	2,681	389,149	301,658	3,748	362,439	268,634	3,292
Pea	10,530	6,229	502	11,116	7,521	542	10,872	7,034	581
Groundnut	14,609	21,292	-	15,978	21,534	-	15,144	19,545	-
Soybean	24,677	22,974	837	27,493	25,574	741	26,996	37,251	1,034
Vegetables	18,246	15,939	5,912	20,181	15,574	5,061	18,721	16,473	5,097
Fruits	7,256	7,824	-	11,206	8,371	-	10,914	10,373	-
Harvested area for major crops (Ha)									
Maize	221,521	72,918	-	236,642	80,570	-	218,689	81,282	-
Sorghum	33,295	136,124	-	33,636	133,033	-	37,469	139,792	-
Paddy rice	14,507	15,077	-	15,374	16,302	-	15,779	16,474	-
Wheat	4,187	8,122	-	4,418	8,749	-	3,495	8,482	-
Cassava	41,160	46,509	-	42,284	47,837	-	45,418	48,494	-
Sweet potato	89,427	84,545	5,583	99,496	87,762	5,226	97,767	86,589	5,079
Irish potato	51,516	43,950	9,028	52,196	51,595	9,667	56,442	52,844	10,458
Yams & Taro	14,450	14,565	-	15,612	15,017	-	13,231	15,928	-
Banana	99,876	79,107	-	105,474	82,137	-	108,476	83,314	-
Cooking banana	35,735	22,089	-	38,916	24,193	-	39,729	24,565	-
Dessert banana	14,980	11,337	-	15,345	12,174	-	15,927	12,513	-
Banana for beer	49,161	45,681	-	51,213	45,770	-	52,820	46,236	-
Bean	362,199	283,104	2,681	389,149	301,584	3,748	362,438	268,628	3,292
Pea	10,530	6,229	502	11,116	7,521	542	10,872	7,034	581
Groundnut	14,609	21,292	-	15,978	21,534	-	15,118	19,545	-
Soybean	24,677	22,974	837	27,493	25,574	741	26,996	37,229	1,034
Vegetables	18,246	15,945	5,912	20,181	15,574	5,061	18,298	15,777	5,097
Fruits	4,778	4,978	-	4,599	4,429	-	3,402	4,213	-

Table 0. Summary of Seasonal Agricultural Survey main indicators(cont'd)

SAS main indicators	2020 Season A	2020 Season B	2020 Season C	2021 Season A	2021 Season B	2021 Season C	2022 Season A	2022 Season B	2022 Season C
Production for major crops (MT)									
Maize	353,999	94,634	-	378,641	104,041	-	348,907	109,615	-
Sorghum	42,231	128,258	-	44,039	134,331	-	45,016	147,411	-
Paddy Rice	52,225	64,279	-	63,950	67,808	-	67,002	68,072	-
Wheat	4,138	8,673	-	4,500	9,184	-	4,019	9,858	-
Cassava	578,545	701,037	-	601,291	718,584	-	637,856	737,284	-
Sweet potato	635,007	611,425	29,182	667,346	632,614	28,790	694,320	649,445	28,980
Irish potato	427,471	352,441	78,609	463,562	393,371	81,348	486,075	331,016	90,916
Yams & Taro	85,414	102,628	-	93,819	107,037	-	85,245	117,647	-
Banana	1,100,082	931,991	-	1,152,365	991,501	-	1,192,331	1,016,137	-
Cooking banana	502,972	410,259	-	529,788	439,405	-	545,588	450,427	-
Dessert banana	120,868	138,090	-	124,546	142,487	-	126,838	145,753	-
Banana for beer	476,241	383,641	-	498,031	409,609	-	519,904	419,956	-
Bean	226,570	209,383	2,780	258,851	229,559	3,566	235,818	210,290	3,381
Pea	7,933	5,668	352	8,617	6,549	469	8,247	5,373	445
Groundnut	5,762	10,542	-	6,313	10,763	-	5,445	10,172	-
Soybean	12,284	10,955	516	14,237	12,194	426	13,741	19,530	785
Vegetables	160,114	166,272	52,492	159,669	172,936	56,979	142,604	175,205	55,355
Fruits	23,542	24,830	-	25,275	25,340	-	21,261	26,872	-
Yield for major crops (Kg/ha)									
Maize	1,598	1,298	-	1,600	1,291	-	1,595	1,349	-
Sorghum	1,268	942.2	-	1,309	1,010	-	1,201	1,055	-
Paddy Rice	3,600	4,264	-	4,160	4,159	-	4,246	4,132	-
Wheat	988	1,068	-	1,018	1,050	-	1,150	1,162	-
Cassava	14,056	15,073	-	14,220	15,021	-	14,044	15,204	-
Sweet potato	7,101	7,232	-	6,707	7,208	5,509	7,102	7,500	5,706
Irish potato	8,298	8,019	-	8,881	7,624	8,415	8,612	6,264	8,694
Yams & Taro	5,911	7,046	-	6,009	7,128	-	6,443	7,386	-
Banana	10,861	11,781	-	10,926	12,071	-	10,992	12,196	-
Cooking banana	13,794	18,573	-	13,614	18,163	-	13,733	18,336	-
Dessert banana	7,927	12,180	-	8,116	11,704	-	7,964	11,648	-
Banana for beer	9,606	8,398	-	9,725	8,949	-	9,843	9,083	-
Bean	626	740	1036.9	665	761	952	651	783	1,027
Pea	753	910	-	775	871	864	759	764	765
Groundnut	394	495	-	395	500	-	360	520	-
Soybean	498	477	-	518	477	574	509	525	759
Vegetables	8,775	10,428	-	7,912	11,104	11,257	7,793	11,105	10,860
Fruits	4,927	4,988	-	5,495	5,721	-	6,250	6,378	-

Table 0. Summary of Seasonal Agricultural Survey main indicators(contd')

	SAS 2020			SAS 2021			SAS 2022		
	Season			Season			Season		
	A	B	C	A	B	C	A	B	C
Share of pure crop in agricultural land									
Small Scale Farmers	28.3	32.3	-	26.7	30.9	30.9	29.2	35.0	80.5
Large Scale Farmers	96.6	93.5	-	96.0	93.8	-	95.1	95.8	-
Agricultural inputs									
Percentage of plots with improved seeds	27.8	11.2	16.7	28.7	11.9	18.8	30.9	16.2	13.2
Percentage of plots with organic fertilizer use	61.9	52.4	67.0	66.3	55.3	71.5	67.4	55.2	83.0
Percentage of plots with inorganic fertilizers use	28.0	20.7	50.9	32.8	26.2	55.8	30.3	21.9	42.6
Percentage of plots with pesticides use	16.0	11.2	54.4	16.0	13.0	56.2	15.4	11.9	88.9
Percentage of farmers who used improved seeds	35.2	15.6	30.6	37.1	17.2	23.8	33.1	8.7	26.1
Percentage of farmers who used organic fertilizer	63.6	51.7	76.1	67.0	56.3	73.8	69.7	57.9	82.3
Percentage of farmers who used inorganic fertilizers	33.8	25.8	67.5	40.9	32.7	68.3	38.6	27.5	71.5
Percentage of farmers who used pesticides	21.2	15.3	64.1	22.4	17.9	65.6	19.8	15.9	70.1
Percentage of land area sown with improved seeds	34.3	15.2	20.5	27.6	15.2	19.4	31.5	17.0	18.5
Percentage of fertilized land with organic fertilizer	59.9	48.7	66.1	64.1	52.7	68.6	65.4	52.1	85.6
Percentage of fertilized land with inorganic fertilizer	32.1	24.0	64.4	38.9	31.5	71.1	36.6	26.0	61.4
Percentage of land with pesticides application	19.6	14.1	67.4	20.2	16.8	71.6	19.2	14.6	92.1
Agricultural practices									
Percentage of farmers who practiced irrigation	6.5	11.8	66.9	9.2	8.3	59.1	8.2	8.0	62.9
Percentage of farmers who practiced anti-erosion activities	88.9	88.0	94.6	91.0	90.8	94.9	92.1	91.4	95.9
Agricultural area									
Total land area (,000Ha)	2377.1	2377.1	-	2,377.1	2,377.1	-	2,377.1	2,377.1	-
Agriculture land (,000Ha)	1394.9	1394.9	-	1,436.6	1,339.8	-	1,402.0	1,393.2	-
Percentage of agricultural area	58.7	58.7	-	60.4	56.4	-	59.0	58.6	-
Area under permanent crops (,000Ha)	554.1	591.5	-	592.4	545.3	-	555.9	544.6	-
Area under permanent pasture (,000Ha)	147.9	140.7	-	131.6	132.1	-	135.2	133.0	-
Modern irrigated agricultural land (,000Ha)	19.0	21.7	0.9	24.4	23.9	1.6	27.1	21.1	1.1
Area under seasonal crops(,000Ha)	1042.1	1068.5	-	1,111.8	989.3	-	1,067.2	1,013.9	-
Temporary fallow land(,000Ha)	104.5	129.4	-	96.1	113.4	-	94.7	125.1	-
Temporarily meadow and pasture(,000Ha)	10.6	13.8	-	10.0	9.4	-	10.1	12.8	-
	2020			2021			2022		
Agriculture Gross Value added (GVA) (Frw/Ha)	1,039,414			1,105,663					

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Acronyms and Abbreviations

%:	Percentage
CAPI:	Computer Assisted Personal Interviewing
Cs Entry:	Census and Survey Processing data collection application
CSPro:	Census and Survey Processing System
DAP:	Diammonium Phosphate
GIS:	Geographic Information System
GPS:	Global Positioning System
Ha:	Hectares
KCL/MOP:	Potassium Chloride or Muriate of Potash
Kg:	Kilograms
LSF:	Large-Scale Farmer
MINAGRI:	Ministry of Agriculture and Animal Resources
MFS:	Multiple-Frame Sampling
MT:	Metric Tones
NAEB:	National Agricultural Export Development Board
NGOs:	Non- Governmental Organization
NISR:	The National Institute of Statistics of Rwanda
NPK:	Nitrogen, Phosphorus and Potassium
PSTA:	Strategic Plan for Agriculture Transformation
RAB:	Rwanda Agriculture and Animal Resources Development Board
SAS:	Seasonal Agricultural Survey
Sqm:	Square meter
SSF:	Small Scale Farmer
STATA:	Software for Statistics and data Science
SAS:	Seasonal Agricultural Survey

I. INTRODUCTION

Agriculture continues to be one of the most important pillars of economic growth for Rwanda, and a much emphasis for agriculture transformation has been underpinned under the new national development strategy. In recognition of its potential in economic development, food security and poverty reduction, the government has set an ambitious agricultural agenda under the new strategy for transformation of agriculture (PSTA 4) aiming at transformation of Rwandan agriculture from a sector characterised by low productivity to a sector using knowledge to increase productivity and investing in value addition and commercialization.

Quality agriculture statistics are useful in monitoring the performance of national agricultural programs and hence, imperative for evidence-based decision making. While the use of statistics in decision-making processes continues to grow, the demand for agriculture data is also increasing. In this regard, the National Institute of Statistics of Rwanda (NISR) in collaboration with the Ministry of Agriculture and Animal Resources (MINAGRI) conducts the Seasonal Agricultural Survey (SAS) to gather agriculture information mainly related to potential agricultural land use; crop area, crop yield and production; agricultural inputs and practices as well as other agricultural statistics.

The data related to tea and coffee are obtained from administrative records collected by National Agricultural Export Development Board (NAEB) through the routine activities of monitoring coffee and tea production. Other agriculture data is obtained from MINAGRI and Rwanda Agriculture and Animal Resources development Board (RAB), district agronomists, and other partners working in the agriculture sector, including total quantity of agricultural inputs used, total agricultural exports, crop varieties grown, crop intensification program among others. Seasonal Agricultural Survey (SAS) covers three main agricultural seasons: Season A (September to February of the following year), Season B (March to June) while Season C (July-September) is a shorter season mainly for vegetables, sweet potato grown in swamps and Irish potato grown in the volcanic agro-ecological zone.

1.1.Objective of the 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 performance of current agricultural season and facilitate evidence-based decision making for the development of the agricultural sector. This report presents the findings of 2021/2022 agricultural year related to:

1. Land use:
    - Agricultural land: includes land already used for farming and land that can be brought back into cultivation (fallow or pasture land). Agricultural land indicates land potential for agriculture.
    - Arable land: land able to be grown and produce crops for food and feeds supply purpose. This area excludes land under permanent crops and permanent pasture.
    - Physical crop cultivated area: area occupied with crops.
    - Pasture land: area under natural grasses reserved for livestock or occupied with fodder crops;
    - Fallow land: cultivable land free for cultivation in a temporal period (less than 5 years);

2. Crop land: Cultivated land devoted to each cultivated crop.
3. Crop production: Quantity of harvested crop produce used for food, livestock feeds, seeds, etc (quantified into kilograms or tons.)
4. Crop yield: It is a measurement of the quantity of crop harvested per unit of land area (kg per hectare). It is used to determine the efficiency of food production at a certain period.
5. Use of inputs (this assesses the level of use of improved seeds, fertilizers and pesticides)
6. Agricultural practices (practice of irrigation and soil protected against erosion) and others.

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.

2.2. Land classification

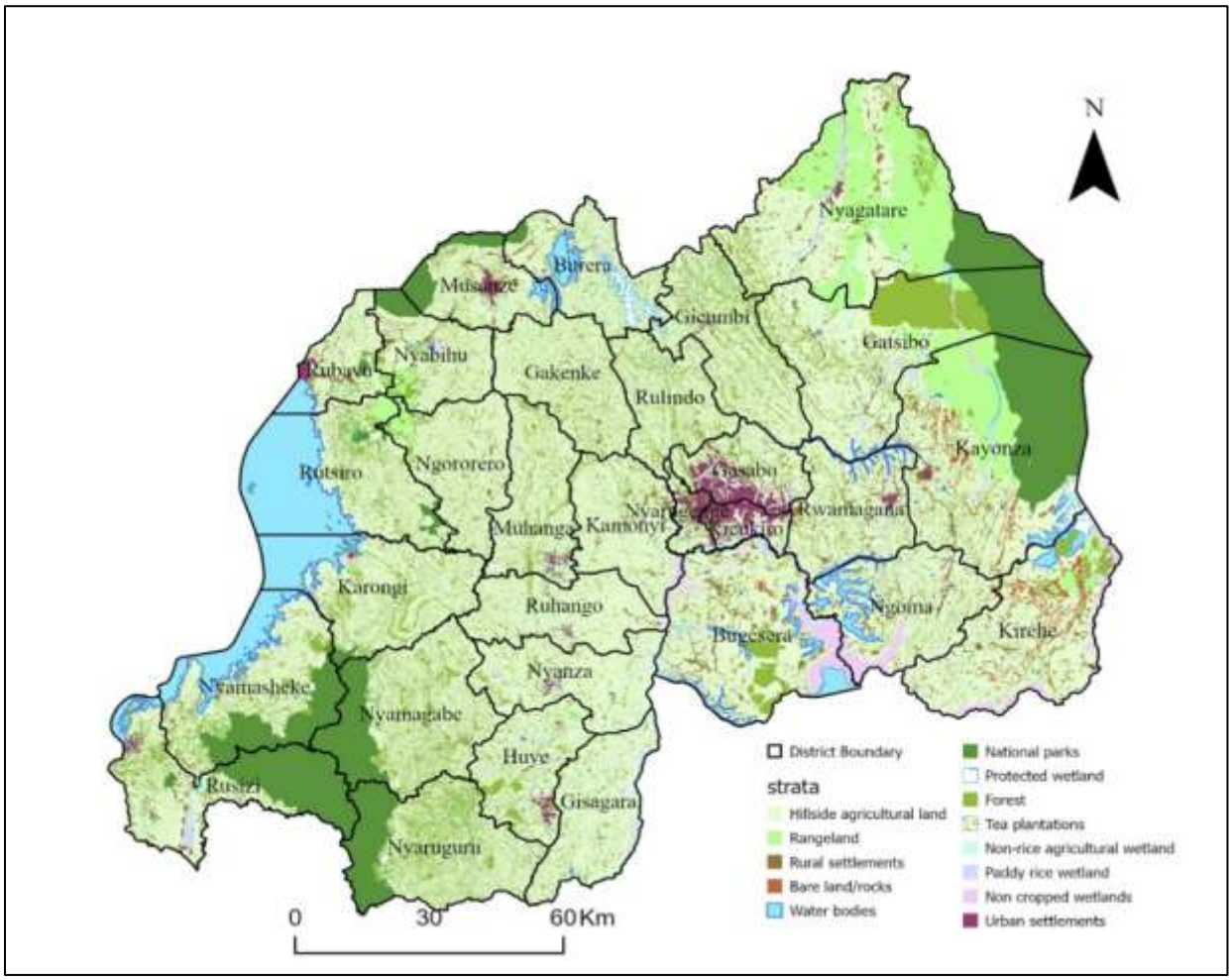
Land classification was done using Rwanda land cover map which is a combination of different layers available in the country, plus a photo interpretation of a series (2010 to 2020) of high-resolution satellite images from Worldview. The Rwanda land cover map is divided into 13 land cover classes (as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

Table 1: List of Rwanda land cover classes

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

Source: NISR, SAS 2022

Map 1: Rwanda land classification map



Source: NISR, SAS 2022

The second step of building the area sample frame was to group land cover classes into strata in order to identify agricultural strata to be considered in sample frame.

2.2.1. Stratification

Out of thirteen land cover classes, five are considered for the agricultural survey frame. These classes are:

- Tea plantation,
- Hillside agricultural land,
- Non-rice agricultural land,
- Paddy rice agricultural wetland,
- Rural settlement.

The remaining land cover classes are excluded from the sampling frame due to low potentiality for agriculture activities. The sampling frame is made of a set of square clusters (segments) of 9 hectares each covering the whole country. By overlapping the clusters layer with land cover classes layer, each cluster is assigned a dominant land cover class as a stratum definition. This is based on a defined thresholds as follow:

Table 2: List of strata

Stratum	Stratum name	Definition
1	Dominant hill crop land stratum	Clusters with Hillside agricultural land cover class greater or equal to 60 percent of the total area of the cluster
2	Dominant Wetland crops stratum	Clusters with non-rice wetland land cover class greater than 25 percent of total area of the cluster
3	Dominant rangeland	Clusters with rangeland land cover class greater or equal to 60 percent of the total area of the cluster
4	Mixed stratum	The rest of other possible combinations
9	Excluded stratum	All clusters with excluded land cover classes greater or equal to 50 percent of the total area of the cluster

Source: NISR, SAS 2022

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

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

	Dominant hill crop land	Dominant wetland crops	Dominant rangeland	Mixed stratum	Excluded stratum	Total
Nyarugenge	515	238	-	114	605	1,472
Gasabo	2,111	296	-	405	1,959	4,771
Kicukiro	517	148	-	90	1,099	1,854
Nyanza	5,847	522	-	418	678	7,465
Gisagara	5,485	684	-	520	858	7,547
Nyaruguru	3,783	388	-	1,290	5,757	11,218
Huye	3,869	369	-	837	1,375	6,450
Nyamagabe	5,577	226	-	1,194	5,134	12,131
Ruhango	5,631	338	-	475	508	6,952
Muhanga	5,003	340	-	662	1,177	7,182
Kamonyi	5,605	406	-	679	636	7,326
Karongi	6,039	114	-	675	1,924	8,752
Rutsiro	4,673	-	353	691	1,639	7,356
Rubavu	2,668	-	-	574	525	3,767
Nyabihu	3,766	-	272	607	1,324	5,969
Ngororero	5,630	112	359	545	872	7,518
Rusizi	3,866	159	-	839	5,322	10,186
Nyamasheke	4,849	137	-	923	4,640	10,549
Rulindo	4,209	312	-	622	1,167	6,310
Gakenke	5,919	255	-	669	986	7,829
Musanze	3,241	120	-	634	1,859	5,854
Burera	4,437	259	-	510	1,965	7,171
Gicumbi	5,919	214	-	868	2,202	9,203
Rwamagana	5,130	173	-	1,098	1,162	7,563
Nyagatare	6,688	532	9,057	1,160	3,869	21,306
Gatsibo	7,358	434	1,048	1,074	7,675	17,589
Kayonza	7,376	280	3,857	1,262	8,694	21,469
Kirehe	7,874	-	548	1,337	3,445	13,204
Ngoma	6,379	-	-	1,035	2,244	9,658
Bugesera	8,155	452	-	1,626	4,135	14,368
National	148,119	7,508	15,494	23,433	75,435	269,989

Source: NISR, SAS 2022

2.3. Sampling procedures

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

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

Table 4: Allocation of sampled segments per district by stratum

	Stratum					
District	Dominant hill crop land	Dominant wetland crops	Dominant rangeland	Mixed stratum	Total A & B	Season C
Nyarugenge	12	6	-	2	20	10
Gasabo	22	4	-	3	29	14
Kicukiro	13	5	-	2	20	9
Nyanza	37	4	-	2	43	21
Gisagara	33	5	-	3	41	19
Nyaruguru	25	3	-	7	35	20
Huye	27	3	-	5	35	17
Nyamagabe	36	2	-	6	44	17
Ruhango	36	3	-	3	42	18
Muhanga	33	3	-	4	40	13
Kamonyi	36	3	-	4	43	17
Karongi	38	2	-	3	43	11
Rutsiro	32	-	2	4	38	7
Rubavu	21	-	-	4	25	30
Nyabihu	27	-	2	3	32	37
Ngororero	36	2	2	3	43	10
Rusizi	27	2	-	5	34	11
Nyamasheke	31	2	-	5	38	11
Rulindo	28	3	-	4	35	13
Gakenke	37	2	-	4	43	14
Musanze	24	2	-	4	30	37
Burera	30	2	-	3	35	46
Gicumbi	37	2	-	5	44	14
Rwamagana	34	2	-	6	42	14
Nyagatare	31	5	25	7	68	21
Gatsibo	38	3	5	5	51	20
Kayonza	32	2	13	5	52	11
Kirehe	45	-	3	6	54	8
Ngoma	39	-	-	6	45	8
Bugesera	45	3	-	8	56	15
Total	**942**	**75**	**52**	**131**	**1,200**	**513**

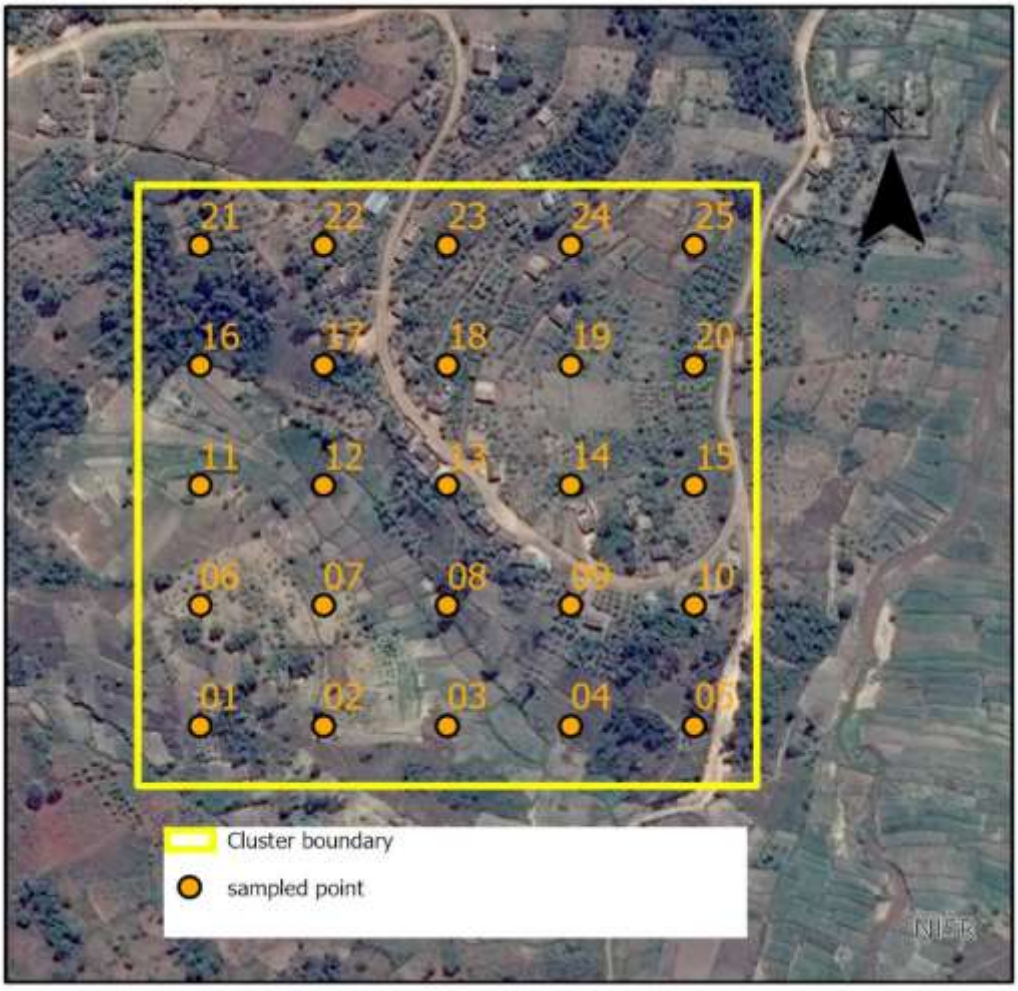
Source: NISR, SAS 2022

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

At 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 plots in which the sample points fall, and collect records of land use and related information.

The recorded information represents the characteristics of the whole segment which are extrapolated to the stratum level and hence the combination of strata within each district provides district area related statistics.

Map 2: Map showing square cluster(segment) with 25 sampled points



Source: NISR, SAS 2022

2.3.1. Weighting Procedures

Based on the stratified two-stage sample design used with the new area frame, the first stage sampling probability for the sample segments in each stratum is calculated as:

$$p_{1h} = \frac{n_h}{N_h}$$

where:

p_{1h} = probability of selection of sample segments in stratum h (district by stratum)

n_h =number of sample segments selected in stratum h

N_h = Total number of segments in the area frame for stratum h in each stratum

The second stage probability was calculated at the plot level based on the assumption that the plots within each sample segment were implicitly selected with PPS using the area of the plot as the measure of size. Therefore, the second stage probability of selection can be expressed as follows:

$$p_{2hi} = \frac{g_{hi} \times A_{hij}}{A_{hi} \times g_{hij}}$$

Where:

$p2_h$ = Probability of selection of the plot in segment h

ghi = Number of grid squares selected in the i-th sample segment of stratum h

Ahij = Area of the j-th sample plot selected in the i-th sample segment of stratum h

Ahi = Area of the i-th sample segment of stratum h

ghij = Number of selected grid squares in the j-th sample plot of the i-th sample segment of stratum h

The weight of a sample plot is equal to the inverse of the first and second stage probabilities of selection:

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

Where:

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

2.4. Data Collection design

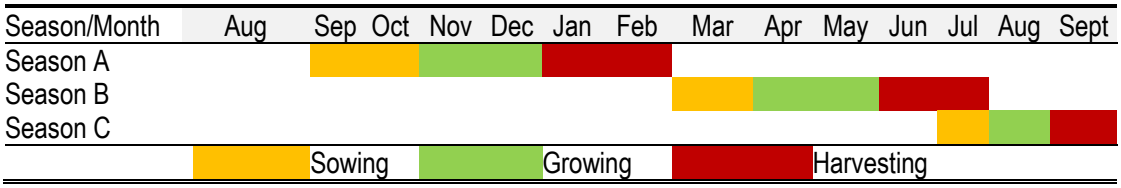
During the SAS 2022, data collection covered three main agricultural seasons A, B and C and was conducted into two separate phases in each season: the first phase, known as screening activity (post-planting phase), consists of visiting all sampled segments and demarcating all plots with sampled points with the aim of covering the information related to land area, planted crops and land use. While the second phase involves capturing of production data by visiting sampled agricultural plots identified from screening activity as well as all Large-Scale Farmers (LSF). To ensure the smooth completion of the SAS workload, NISR employed 131 Enumerators and 29 Team Leaders. All fieldwork staff hold a degree in agriculture sciences and were consistently trained by NISR headquarter staff before starting data collection in each season. Moreover, a higher-level supervision was organised and done by staff from NISR who frequently visited the field teams during each phase of data collection in order to ensure the quality of collected data.

2.4.1. Time frame

The Seasonal Agriculture Survey (SAS) data collection was conducted following the three ordinary agricultural seasons. The SAS field activities were carried out during the regular seasons' calendar that covers the approximate monthly periods as follows:

- Season A starts in September 2021 and ended with February 2022
- Season B starts in March 2022 and ended with June 2022,
- Season C, which begins in July and ends in September 2022, is a short agricultural season in which vegetables and sweet potatoes are grown primarily in marshlands, whereas Irish potatoes are grown in volcanic agro-ecological zones.

Figure 1: Agricultural seasons calendar



Source: NISR, SAS 2022

Specifically, During the 2022 SAS, the field work for season A started from 5th December 2021 and ended on 24th February 2022 while season B data collection was conducted from 24th April and ended on 30th June 2022. In both seasons, data collection was carried out in 1,200 segments and 336 large scale farmers' holdings across the country. Besides, the data collection of season C was carried out in 2093 sites potential to grow season C crops in addition to 513 segments and started from 6th September and ended on 30th September 2022.

2.5. Data collection tools and materials

Seasonal Agricultural Survey used two questionnaires:

- **Screening Questionnaire:** Screening questionnaire is a questionnaire used to collect information mainly related to land use, plot area and crop cultivated of the delineated plot.
- **Plot Questionnaire:** Plot questionnaire is a questionnaire used to collect information on the sampled plots mainly related to crop production, inputs used and agricultural practices.

The computer assisted personal interview (CAPI) data collection methodology was used based on three different software applications:

- **Collector:** which is GIS based application, is used to identify and navigate the enumerator team to the exact GPS sample-point location and for mapping the plot boundary for GIS area determination,
- **Survey 123:** which is GIS based application, used to collect screening data for Large-scale farmers.
- **CS Entry application**: which is a CSPro data entry application used on Android tablets, was used to collect data for interview of plot questionnaire.

Before proceeding to the field, enumerators and their team leaders ensure that they have required materials for their fieldwork. Each enumerator and team leader had adequate materials composed of enumerator's instruction manual, android tablet, charger, Power banks, pens, notebooks, pencils, calculator, weighing scales, Global Positioning System (GPS), boots, as well as transport facilitation.

2.5.1. Field data collection procedures

The SAS data collection is carried out into two phases:

- **Screening Activity of the Segment:** Arriving at the segment, field workers use GPS to direct them to the sampled point inside the segment. Arriving at the point, enumerators identify plot boundary with the guide of the farmer and delineate the plot using the collector application with GPS connected to the tablet. For large scale farmers, the team ensures a complete enumeration of plots with at least 10 hectares.
- **Farm Interview:** After screening activity, only sampled agricultural plots are provided to enumerators for collecting information using the plot questionnaire.

2.6. Data processing and analysis

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

2.7. 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: As defined by FAO, arable land includes land under temporary crops (double-cropped areas are counted only once), temporary meadows for mowing or pasture, land under market and kitchen gardens and land temporarily fallow (less than five years). The abandoned land resulting from shifting cultivation is not included in this category. Data for arable land are not meant to indicate the amount of land that is potentially cultivable.

4. Permanent crop land: Permanent crops are sown or planted once and occupy the land for some years and do not need to be replanted after each annual harvest, such as cocoa, coffee and rubber. This category includes flowering shrubs, fruit trees, nut trees and vines, but excludes trees grown for wood or timber. The following crops are considered as permanent crops in SAS: Cooking banana, Dessert banana, Banana for beer, Avocado, Coffee, Sugar cane, Macadamia, Olive, Mango, Apple, Papaya, Orange, Lemon, Guava, Mulberry, Stevia, Jatropha, Palm, and Tea.

5. Permanent pastureland: Land used permanently (five years or more) for herbaceous forage crops, either cultivated or growing wild (wild prairie or grazing land).

6. Irrigated agricultural land: Area equipped for irrigation, which is actually irrigated, (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.

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. if the farmer only harvested 1,250 trees. In this case, the farmer has 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.

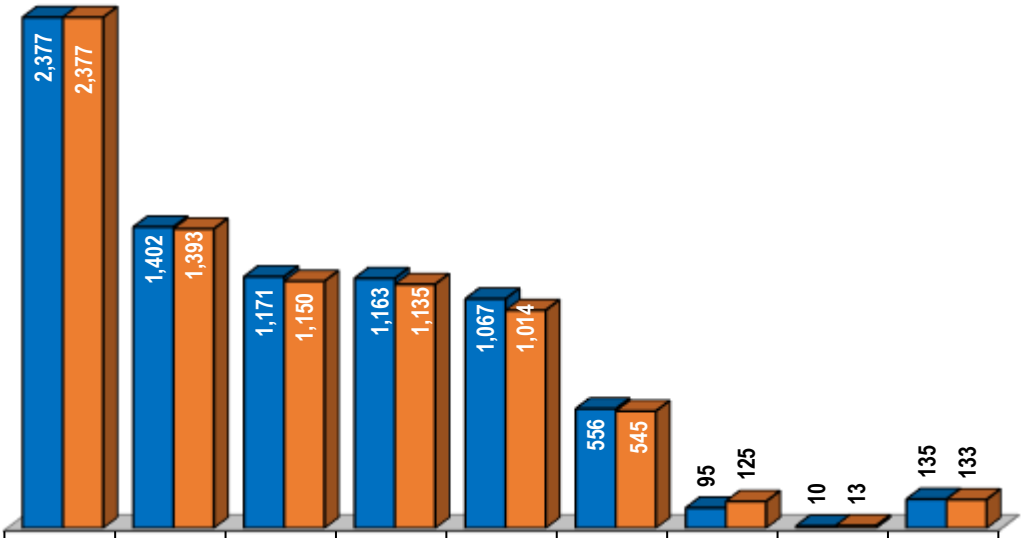
12. Crop production: Crop production is the product of crop yield and crop area (harvested). At district level, crop production is estimated by taking crop yield of crop produces times the total harvested area in the district.

III. SURVEY FINDINGS

This section highlights key results of SAS 2022 seasons A, B and C. These results are mainly related to area (physical land use, cultivated area, and harvested area), crop yield and production, agricultural inputs as well as agricultural practices in Rwanda.

3.1. Agricultural land use (,000Ha) for 2022 Season A and B

Figure 2: ***Agricultural land use in 2022 Season A and B (in thousands of hectares)***



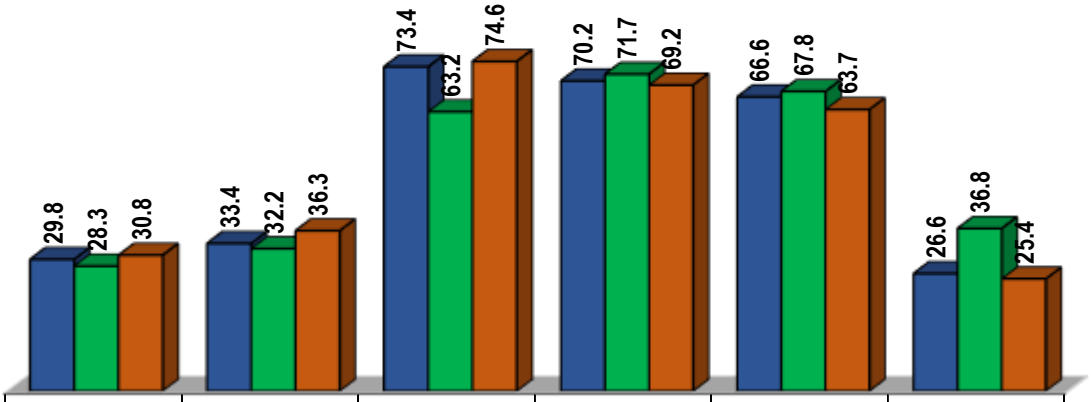
	Total land area	Agricultural land	Arable land	Physical cultivated land	Area under seasonal crops	Area under permanent crops	Temporary fallow land	Temporarily midow and pasture	Area under permanent pasture
2022 Season A	2,377	1,402	1,171	1,163	1,067	556	95	10	135
2022 Season B	2,377	1,393	1,150	1,135	1,014	545	125	13	133

Source: NISR, SAS 2022

The total country land area is estimated at 2.377 million of hectares out of which agricultural land (land potential for agriculture) covered 1.402 million hectares (59% of total country land) in Season A. Out of the total agricultural land, 1.067 million hectares was used for Seasonal crops in season A, nearly 0.6 million hectares are area under permanent crops, 0.135 million ha under permanent pasture and nearly 0.1 million ha was fallow coverage. For season B, 1.393 million hectares (58.6% of total country land) is used for agriculture, 1.014 million hectares was used for Seasonal crops, nearly 0.6 million hectares are area under permanent crops, 0.133 million hectares under permanent pasture while 0.125 million ha was fallow.

3.2. Crop area, yield and production for major crops

Figure 3 : Cultivated area by cropping system



	Season A	Season B	Season C	Season A	Season B	Season C
	Pure			Mixed		
2020	29.8	33.4	73.4	70.2	66.6	26.6
2021	28.3	32.2	63.2	71.7	67.8	36.8
2022	30.8	36.3	74.6	69.2	63.7	25.4

Source: NISR, SAS 2022

Figure 3 shows that, the mixed cropping system is still dominant in the agricultural practice with 69.2 percent of the cultivated area in season A compared to 63.7 percent in season B, and 25.4 percent in the small season C.

Maize:

In 2022, maize was cultivated on land estimated at 219,683 hectares in season A compared to 81,339 hectares in season B. Maize production was estimated at 348,907 metric tons in season A and 109,615 metric tons in season B, this is a decrease of 8.0 percent in season A and an increase of 5.4 percent in season B when compared respective seasons of 2021. In seasons A and B, the average yield was 1.6 tons and 1.3 tons, respectively (See Tables 11-26).

Sweet potato:

In 2022, sweet potato was cultivated on land estimated at 97,771 hectares in season A compared to 92,056 hectares in season B and 5,079 hectares in season C. Sweet potato production was estimated to 694,320 metric tons in season A, 649,445 metric tons in season B and 28,980 metric tons in season C. This is an increase of 4 percent in season A , 2.7 percent increase in season in B and 0.7 percent increase in season C when compared to respective seasons of 2021. The average yield was 7.1 tons per hectare in season A, 7.5 tons per hectare in season B and 5.7 tons per hectares in season C (see district details in table 11-26).

Irish potato:

In 2022, Irish potatoes were cultivated on land estimated at 56,442 hectares in season A compared to 52,858 hectares in season B, and 10,458 hectares in season C. Irish potato production was 486,075 metric tons in season A, 331,016 metric tons in season B and 90,916 metric tons in season C. This is an increase of 5 percent in season A and a decrease of 16 percent in season B when compared to the respective seasons of 2021. The average yield of Irish potato was 8,6 tons per hectares in season A, 6.2 tons per hectare in season B and 8.7 tons per hectare in season C (see district details in table 11-26).

Cassava:

In 2022, cassava was cultivated on land estimated at 186,204 hectares in season A compared to 152,470 hectares in season B. Furthermore, harvested area was estimated at 45,418 hectares for season A compared to 48,494 hectares for season B. Cassava production was estimated at 637,856 metric tons in season A and 737,284 metric tons in season B, representing an increase of 6 percent on season A and 2.6 percent increase in season B, when compared to the respective seasons in 2021. The average yield of cassava was 14 tons in season A and 15.2 tons in season B (See district details in Tables 11-26).

Paddy rice:

In 2022, Paddy rice was cultivated on land estimated at 15,840 hectares in season A and 16,517 hectares in season B. Paddy rice production was estimated at 67,002 metric tons in season A and 68,072 metric tons in season B, this is an increase of 4.8 percent in season A and an increase of 0.4 percent in season B when compared to respective seasons in 2021. The average yield was 4.2 tons per hectare in season A and 4.1 tons per hectares in season B (See district details in Tables 11-26).

Bananas:

In 2022, banana was cultivated on area estimated at 259,505 hectares in season A compared to 213,322 hectares in season B. The harvested area was estimated at 108,476 hectares for season A compared to 83,314 hectares for season B. The production of banana was estimated at 1,192,331 metric tons in season A and 1,016,137 metric tons in season B, an increase of 3.5 percent in season A and 2.5 percent in season B when compared to respective seasons of 2021. The average yield of banana was 10.9 tons per hectare in season A and 12.2 tons per hectare in season B (See district details in Tables 11-26).

Beans:

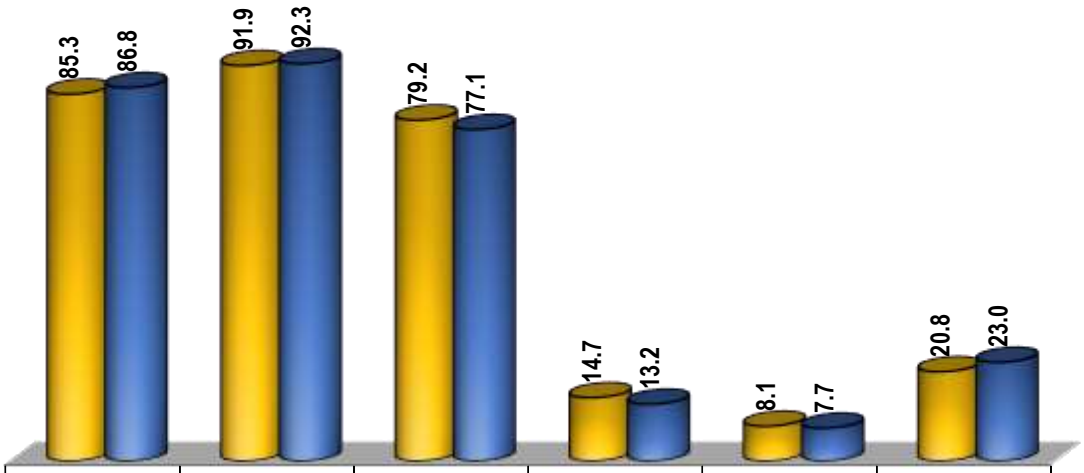
In 2022, beans was cultivated on land estimated at 362,439 hectares in season A compared to 268,634 ha in season B and 3,292 hectares in season C. Bean production was estimated at 235,818 metric tons in season A compared to 210,290 metric tons in season B and 3,381 metric tons in season C, this is a decrease of 9 percent in season A, 8.4 percent in season B and 5 percent in season C when compared to respective seasons of 2021. The average yield of beans was 0.65 tons per hectare in season A and 0.78 tons in season B (See district details in table 11-26).

3.3. Agricultural inputs

The 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

Figure 4: Types of seeds used (% of farmers)

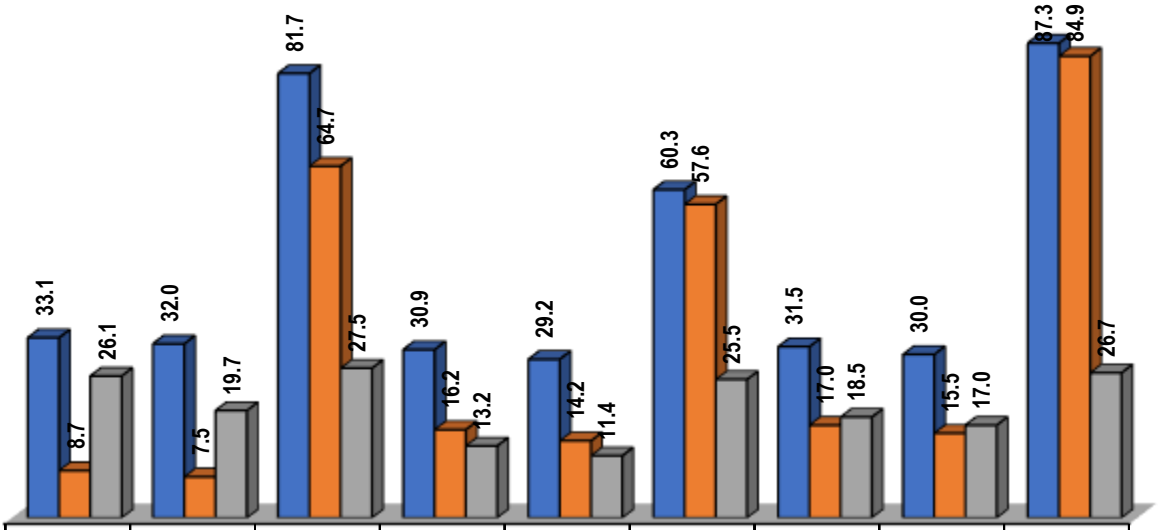


	Traditional seeds			Improved seeds		
	Season A	Season B	Season C	Season A	Season B	Season C
2021	85.3	91.9	79.2	14.7	8.1	20.8
2022	86.8	92.3	77.1	13.2	7.7	23.0

Source: NISR, SAS 2022

Figure 4 above shows that, in 2022, 86.8 percent of farmers applied traditional seeds in season A, compared to 92.3 percent in season B and 77.1 percent in season C, while the improved seeds was applied by 13.2 percent of farmers in season A compared to 7.7 percent of farmers in season B, and 23 percent of farmers in season C (See Figure 4).

Figure 5: Use of improved seeds per farmer, plots, and share of land (%)



	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
	Percentage of farmers			Percentage plots			Share of cultivated area		
Season A	33.1	32.0	81.7	30.9	29.2	60.3	31.5	30.0	87.3
Season B	8.7	7.5	64.7	16.2	14.2	57.6	17.0	15.5	84.9
Season C	26.1	19.7	27.5	13.2	11.4	25.5	18.5	17.0	26.7

Source: NISR, SAS 2022

In 2022, 33.1 percent of farmers used improved seeds in season A, compared to 8.7 percent in season B, and 26.1 percent in season C. The improved seed were applied to 30.9 percent of plots in season A compared to 16.2 percent of plots in season B and 13.2 percent of plots in season C. In regard to cultivated area, the improved seeds were applied to 31.5 percent of cultivated land in season A compared to 17 percent of cultivated land in season B and 18.5 percent of cultivated land in season C (See Figure 5).

Table 5: Source of improved seeds (%)

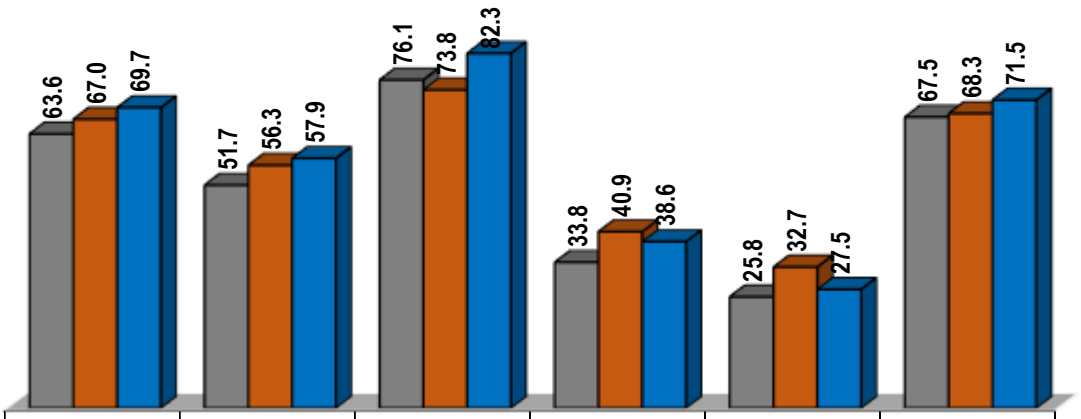
	2021			2022		
	Season A	Season B	Season C	Season A	Season B	Season C
NGOs/Companies	39.3	30.3	2.7	41.2	23.9	3.5
Agro dealers	37.6	38.9	39.8	36.6	42.8	45.4
Government (MINAGRI/RAB/NAEB)	8.3	9.2	12.6	4.8	9.6	2.7
Market	5.2	7.1	28.6	7.0	8.4	27.5
Recognized seed multipliers	4.3	7.5	9.3	5.3	8.2	11.5
Agriculture cooperative	4.3	5.9	6.7	3.9	6.2	8.3
Other source	1.0	1.0	0.3	1.2	0.9	1.2

Source: NISR, SAS 2022

In 2022 season A, 41.2 percent of improved seeds was obtained from NGO/companies, 36.6 percent from agro-dealers, 7 percent purchased from the market, 5.3 percent from seeds multipliers, 4.8 percent from the government and 3.9 percent from cooperatives. In season B, 42.8 percent of improved seeds was obtained from agro-dealers, while 23.9 percent from NGO/companies. Improved seeds were used mostly for crops such as paddy rice, maize, fruits and vegetables (See details in Tables 5, 33-38).

3.3.2. Use of fertilizers

Figure 6 : Percentage of farmers who applied fertilizers

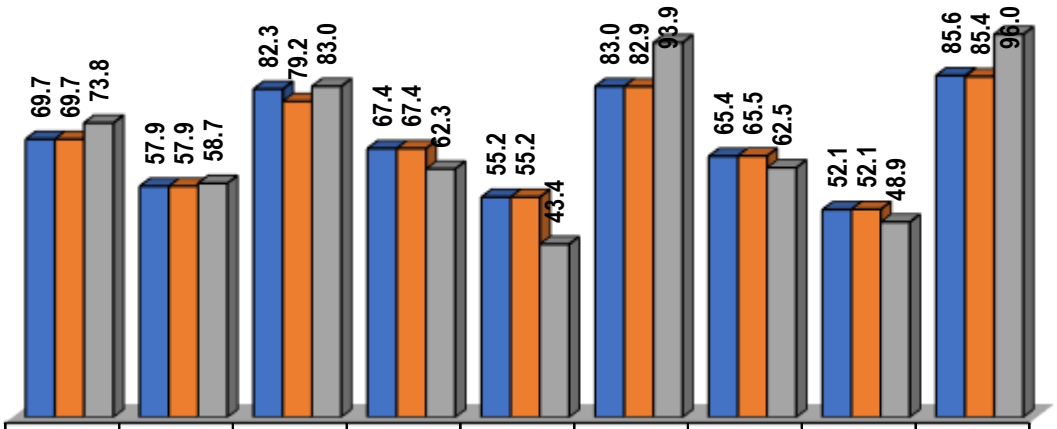


	Organic fertilizer			Inorganic fertilizers		
	Season A	Season B	Season C	Season A	Season B	Season C
2020	63.6	51.7	76.1	33.8	25.8	67.5
2021	67.0	56.3	73.8	40.9	32.7	68.3
2022	69.7	57.9	82.3	38.6	27.5	71.5

Source: NISR, SAS 2022

In 2022, 69.7 percent of farmers used organic fertilizer on their farms in season A compared to 57.9 percent in season B and 82.3 percent in season C, while 38.6 percent used inorganic fertilizer in season A compared to 27.5 percent in season B and 71.5 percent in season C. (See Figure 6).

Figure 7: Use of organic fertilizers per farmers, number of plots and cultivated area(%)

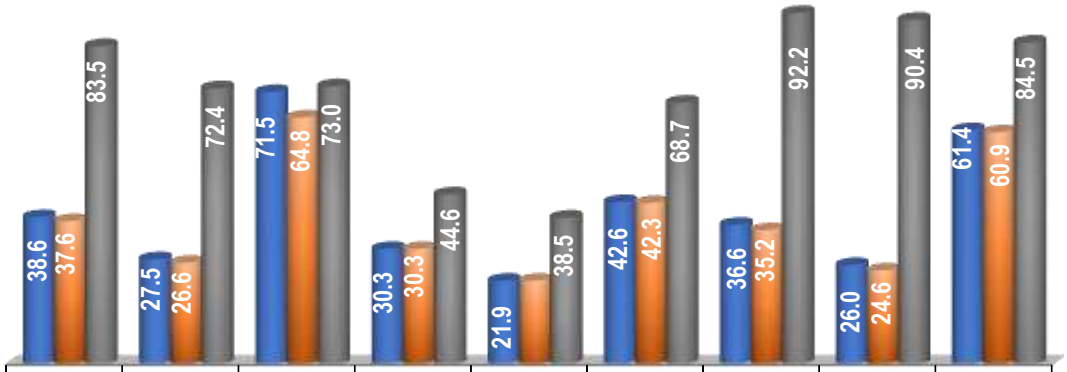


	Percentage of farmers			Percentage of plots			Share of cultivated area		
	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C
Overall	69.7	57.9	82.3	67.4	55.2	83.0	65.4	52.1	85.6
SSF	69.7	57.9	79.2	67.4	55.2	82.9	65.5	52.1	85.4
LSF	73.8	58.7	83.0	62.3	43.4	93.9	62.5	48.9	96.0

Source: NISR, SAS 2022

In 2022 season A, 69.7 percent of small-scale farmers and 73.8 percent of large-scale farmers used organic fertilizer compared to 57.9 percent of small-scale farmers and 58.7 percent of large scale farmers in season B. (See details in Tables 39-41).

Figure 8: Use of inorganic fertilizer per farmers, number of plots and cultivated area (%)



	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C
	Percentage of farmers			Percentage of plots			Share of cultivated area		
Overall	38.6	27.5	71.5	30.3	21.9	42.6	36.6	26.0	61.4
SSF	37.6	26.6	64.8	30.3	21.9	42.3	35.2	24.6	60.9
LSF	83.5	72.4	73.0	44.6	38.5	68.7	92.2	90.4	84.5

Source: NISR, SAS 2022

In 2022, 38.6 percent of farmers used inorganic fertilizer in season A compared to 27.5 percent in season B and 71.5 percent in season C. In season A, 37.6 percent of small-scale farmers and 83.5 percent of large-scale farmers used inorganic fertilizer, while 26.6 percent of small-scale farmers and 72.4 percent of large-scale farmers used it in season B (See Figure 8).

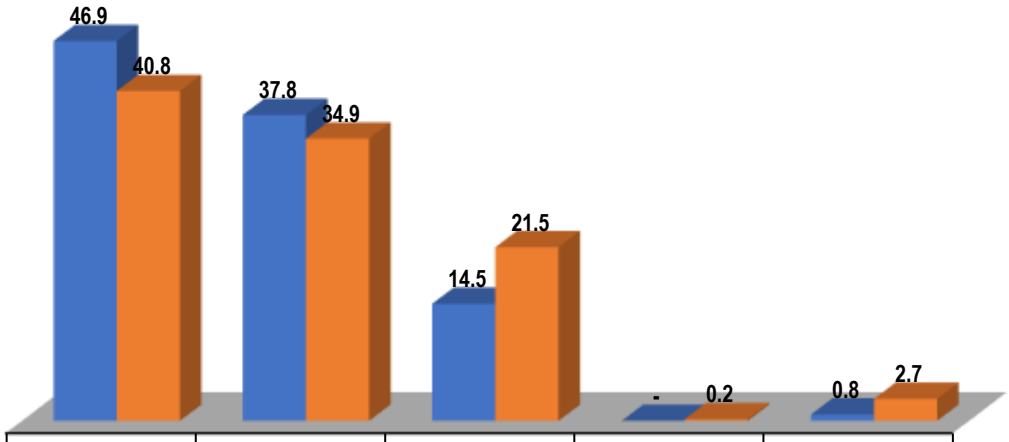
Table 6 : Percentage of farmers by source of inorganic fertilizers

	2021			2022		
	Season A	Season B	Season C	Season A	Season B	Season C
Government (MINAGRI/RAB/NAEB)	3.6	3.5	1.7	2.2	2.5	0.4
Agro dealers	46	50.3	64.4	43.6	52.9	63
NGOs/Companies	42.2	36.9	15.1	46.7	34.1	18.7
Market	3.8	5.9	10.6	5.4	7.3	10
Agriculture cooperative	3.7	3.1	7.8	1.8	2.8	7.3
Other sources	0.7	0.4	0.3	0.3	0.6	0.5

Source: NISR, SAS 2022

In regard to source of fertilizers, in season A, 46.7 percent of famers bought inorganic fertilizers from NGOs/companies; 43.6 percent of farmers gained inorganic fertilizers from agro-dealers while in season B, 52.9 percent and 34.1 percent of farmers sourced the inorganic fertilizer from agro-dealers and NGOs/companies respectively. (See details in Tables 6, 42-51).

Figure 9 : Type of inorganic fertilizer used (%)



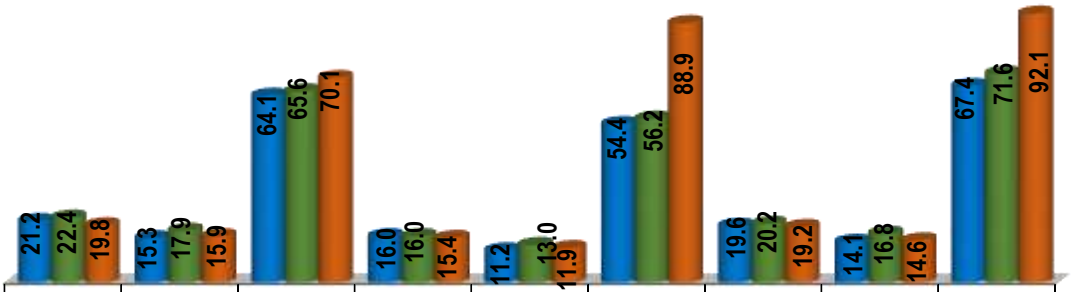
	DAP	Urea	NPK	KCL/MOP	Others
Season A	46.9	37.8	14.5	-	0.8
Season B	40.8	34.9	21.5	0.2	2.7

Source: NISR, SAS 2022

In 2022 season A, DAP was used by 46.9 percent of farmers, UREA was used by 37.8 percent of farmers while NPK was used by 14.5 percent of farmers, while in 2022 season B, DAP was used by 40.8 percent of farmers, UREA was used by 34.9 percent of farmers while NPK was used by 14.5 percent of farmers (See details in Tables 42-51).

3.3.3. Use of pesticides

Figure 10: Use of pesticides per farmer, number of plots and cultivated area (%)



	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C
	Percentage of farmers			Percentage of plots			Share of cultivated area		
2020	21.2	15.3	64.1	16.0	11.2	54.4	19.6	14.1	67.4
2021	22.4	17.9	65.6	16.0	13.0	56.2	20.2	16.8	71.6
2022	19.8	15.9	70.1	15.4	11.9	88.9	19.2	14.6	92.1

Source: NISR, SAS 2022

In 2022 season A, 19.8 percent of farmers used pesticides compared to 15.9 percent in season B and 70.1 percent in season C. In season A, 18.6 percent of small-scale farmers and 72.3 percent of large-scale farmers used pesticides, while 14.7 percent of small-scale farmers and 74.9 percent of large-scale farmers used pesticides (See details in Tables 52-55).

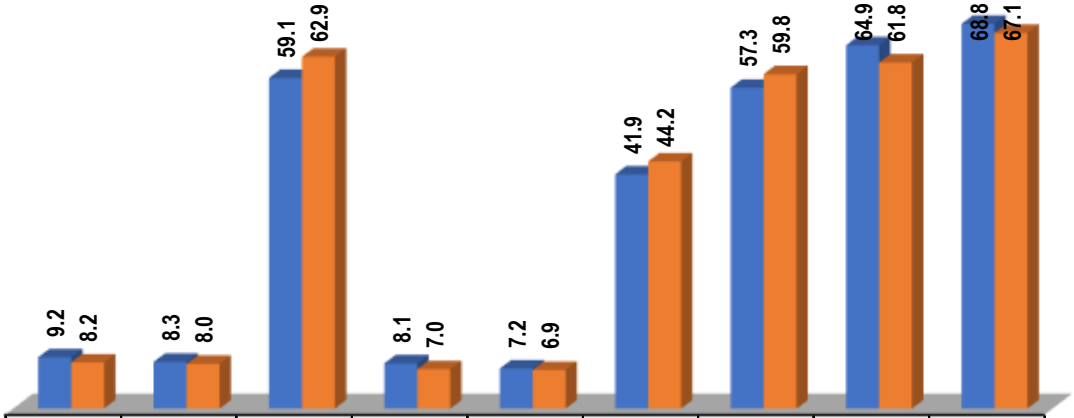
In regard to type of pesticides, 37.5 percent of farmers applied Rocket, 26.8 percent of farmers applied Dithane and 14.7 percent applied Cypermethrin in season A while in season B, 43.1 percent applied Dithane, 29.9 percent of farmers applied Rocket and 14.3 percent applied Cypermethrin (See details in Tables 52-55).

3.4.Agricultural practices

Agricultural practices were collected during the SAS 2022, and the data is presented in terms of the percentage of farmers who participated in such practices.

3.4.1. Irrigation practices

Figure 11: Farmers who practiced irrigation (%)



	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C
	Overall			SSF			SSF		
2021	9.2	8.3	59.1	8.1	7.2	41.9	57.3	64.9	68.8
2022	8.2	8.0	62.9	7.0	6.9	44.2	59.8	61.8	67.1

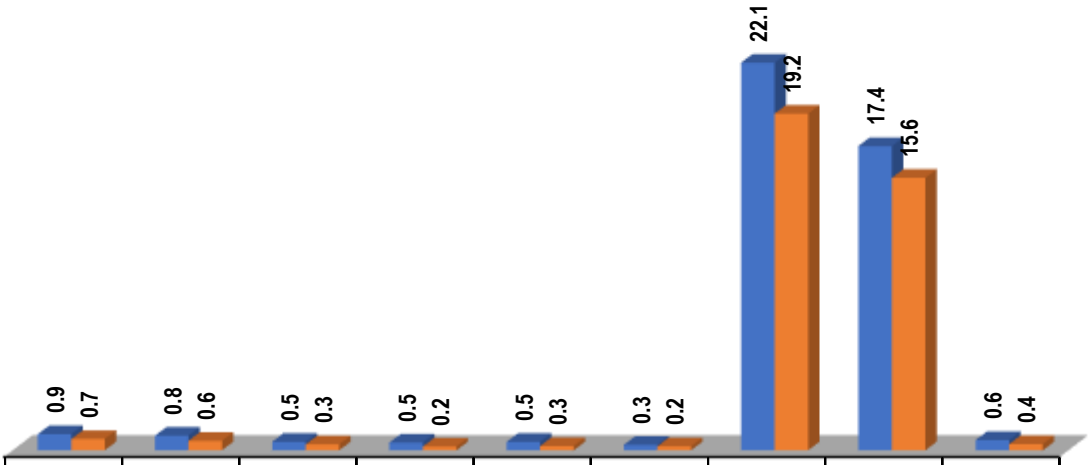
Source: NISR, SAS 2022

In season A of 2022, 8.2 percent of farmers practiced irrigation compared to 8.0 percent of farmers in season B and 62.9 in season C. In regard to farmer categories 7 percent of small-scale farmers and 59.8. percent of large-scale farmers practiced irrigation in season A compared to 6.9 percent of small-scale farmers and 61.8 percent of large-scale farmers in season B.

Out of farmers who practiced irrigation in 2022, 39.4 percent used traditional irrigation techniques in season A compared to 38 percent in season B and 83.6 percent in season C while modern irrigation was practiced by 60.6 percent in season A, 62 percent in season B and 16.4 percent in season C. In regard to source of water used for irrigation Lakes/stream is predominant across seasons with 47.4 percent in season A, 53.1 percent in season B and 53.1 percent in season C followed by underground water by 25.5 percent in season A, 27 percent in season B and 44.6 percent in season C (See details in Tables 56-60)

3.4.2. Mechanisation

Figure 12: Farmers who used any mechanical equipment for agriculture activities (%)



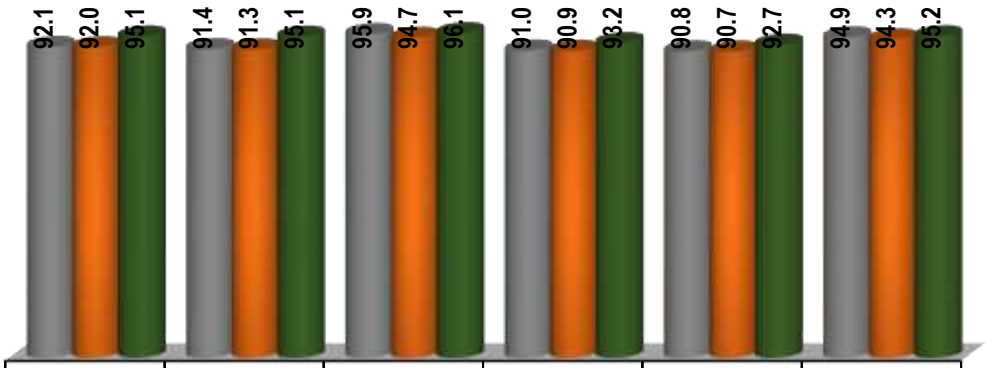
	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C
	Overall			SSF			LSF		
2021	0.9	0.8	0.5	0.5	0.5	0.3	22.1	17.4	0.6
2022	0.7	0.6	0.3	0.2	0.3	0.2	19.2	15.6	0.4

Source: NISR, SAS 2022

In 2022, 0.7 percent of farmers used mechanical equipment for agriculture in season A compared to 0.6 percent of farmers in season B and 0.3 in season C. Regarding to farmer categories 19.2 percent of large-scale farmers used mechanical equipment for agriculture in season A compared to 15.6 percent of large-scale farmers in season B (See details in Tables 56-58)

3.4.3. Erosion control measures

Figure 13: Farmers who protected land against erosion (%)



	Season A	Season B	Season C	Season A	Season B	Season C
	2022			2021		
Overall	92.1	91.4	95.9	91.0	90.8	94.9
SSF	92.0	91.3	94.7	90.9	90.7	94.3
LSF/SITE	95.1	95.1	96.1	93.2	92.7	95.2

Source: NISR, SAS 2022

In 2022, 92.1 percent of farmers practiced anti-erosion activities in season A compared to 91.4 percent in season B and 95.9 percent in season C. In regarding to farmer categories, 92 percent of small-scale farmers and 95.1 percent of large-scale farmers protected their land against erosion in season A compared to 91.3 percent of small-scale farmers and 95.1 percent of large-scale farmers in season B.

In regard to types of anti-erosion used, cover plants were the most used type of anti-erosion with 57.1 percent of farmers in season A against 58.2 percent in season B and 38.9 percent in season C. Regarding to erosion degree, splash erosion or low erosion appeared the most across season with 46.1 percent in season A, 51.9 percent in season B and 45.9 percent in season C while severe erosion cases were few across seasons with 2.6 percent in season A, 1.2 percent in season B and 3.1 percent in season C (See details in Tables 56-64).

3.5. Sowing dates

Results show that in 2022 season A, 36.7 percent of crops were planted in September 2021, 23.5 percent of crops were planted in October 2021, with the remainder, mainly perennial crops planted before September and few seasonal crops planted after October 2021.In Season B, 30.3 percent of crops were planted in February 2022, 15.8 percent in March 2022, with the remainder, mainly perennial crops were planted before February and few seasonal crops were planted after February 2022. (See details in table 30 and 31).

3.6. Gross Value Added (GVA) of individual crops

The Gross Value-Added value of different crops is shown in constant 2017 prices. The results showed that the gross value added of crops such as maize, sorghum, wheat, sweet potatoes, cooking banana, banana for beer, and soya increased in 2022 compared to 2021. While the Gross Value Added (GVA) for crops such as paddy rice, cassava, Irish potatoes, dessert banana, beans, peas, and groundnut were lower than the previous year.

Table 7: Main crops Gross Value Added in constant 2017 prices (Billion Frw /ha)

Crops	2016	2017	2018	2019	2020	2021	2022
Maize	402,114	309,457	365,527	373,066	389,059	387,754	390,303
Sorghum	274,987	296,000	298,689	274,485	280,068	299,996	302,122
Paddy rice	1,304,073	1,633,520	1,492,544	1,718,397	1,691,890	1,799,480	1,799,248
Wheat	237,012	282,068	306,210	329,278	289,132	303,795	321,878
Cassava	177,496	305,145	1,377,459	1,629,739	1,642,935	1,653,322	1,648,255
Sweet potato	808,499	784,244	899,497	890,254	932,227	903,969	950,888
Irish potato	1,230,891	1,713,831	1,444,199	1,700,490	1,544,227	1,551,234	1,425,235
Cooking banana	185,884	199,565	3,715,919	3,623,122	3,180,479	3,089,892	3,119,720
Dessert banana	122,667	117,981	2,163,072	1,481,763	1,162,979	1,162,822	1,132,818
Banana for beer	108,416	102,332	1,122,757	879,672	931,198	958,935	974,510
Beans	401,317	391,605	410,264	391,121	318,642	334,063	333,464
Pea	1,086,082	1,060,761	964,611	1,049,992	1,365,309	1,355,647	1,284,987
Groundnut	177,694	187,362	221,069	183,218	187,008	186,608	185,329
Soybean	55,189	52,694	48,631	61,358	57,232	55,754	60,963

Source : NISR, SAS 2022

MAIN TABLES

Table 8. Season A 2022_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 meadow and pasture	Area under permanent pasture
Nyarugenge	13.1	5.8	44.0	4.5	5.1	3.9	2.6	0.5	0.1	0.0
Gasabo	42.7	20.2	47.3	18.7	16.9	15.9	7.1	2.2	0.7	0.4
Kicukiro	16.6	5.9	35.3	5.1	4.5	4.4	2.3	0.7	0.1	0.5
Nyanza	67.1	47.0	70.0	44.8	41.3	39.4	15.7	5.0	0.4	0.3
Gisagara	67.3	45.0	66.9	44.1	40.5	39.6	15.7	4.5	0.1	-
Nyaruguru	100.7	34.9	34.7	30.9	30.1	26.1	12.1	4.3	0.8	-
Huye	58.1	34.6	59.6	33.1	32.2	30.6	13.7	2.2	0.2	0.0
Nyamagabe	109.1	44.9	41.2	39.5	39.1	33.8	12.2	5.6	0.2	0.0
Ruhango	62.6	46.2	73.8	43.0	41.3	38.2	14.1	4.1	0.8	0.1
Muhanga	64.4	41.1	63.8	37.4	36.3	32.6	17.9	4.4	0.5	-
Kamonyi	65.8	44.4	67.5	39.0	41.6	36.2	19.8	2.1	0.7	0.1
Karongi	78.9	42.4	53.7	36.0	36.7	30.3	14.3	5.3	0.4	-
Rutsiro	66.0	40.4	61.3	29.3	30.5	25.3	15.7	3.8	0.2	6.0
Rubavu	33.8	23.8	70.3	22.4	22.2	21.2	5.9	0.7	0.6	0.3
Nyabihu	53.6	34.6	64.5	30.1	28.7	28.5	6.7	1.6	0.1	4.1
Ngororero	67.5	44.6	66.0	39.2	37.2	34.0	16.1	5.0	0.1	2.2
Rusizi	91.4	36.3	39.7	34.4	35.0	33.1	12.5	1.2	0.1	-
Nyamasheke	94.8	39.8	42.0	31.6	38.5	30.4	21.4	1.2	-	0.1
Rulindo	56.7	36.5	64.4	33.1	33.1	31.1	13.6	1.9	0.2	1.3
Gakenke	70.1	49.0	69.8	45.4	47.0	43.4	21.1	1.7	0.2	0.1
Musanze	50.9	29.5	58.0	29.0	27.2	26.7	4.1	2.1	0.2	-
Burera	58.4	35.4	60.5	34.8	31.9	31.3	3.1	3.2	0.3	-
Gicumbi	82.5	48.3	58.5	46.2	44.4	42.3	11.2	3.2	0.9	-
Rwamagana	65.3	47.5	72.8	42.7	42.9	40.3	24.3	2.0	0.4	2.2
Nyagatare	191.1	148.1	77.5	73.5	75.1	71.3	88.7	1.7	0.8	70.5
Gatsibo	153.6	76.9	50.1	60.5	66.1	58.3	39.5	2.1	0.1	8.6
Kayonza	179.2	92.8	51.8	63.2	60.1	57.1	47.2	5.9	0.2	26.6
Kirehe	114.9	74.4	64.7	63.3	65.1	59.1	31.1	4.2	-	5.0
Ngoma	80.5	56.7	70.5	50.9	51.0	46.9	22.5	3.5	0.4	1.7
Bugesera	120.4	75.2	62.5	64.9	61.2	55.9	23.6	8.7	0.3	5.1
National	2,377.1	1,402.0	59.0	1,170.6	1,162.8	1,067.2	555.9	94.7	10.1	135.2

Source: NISR, SAS 2022

Table 9. Season B 2022_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 meadow and pasture	Area under permanent pasture
Nyarugenge	13.1	5.5	42.1	4.7	4.8	4.1	2.5	0.6	0.1	0.1
Gasabo	42.7	20.2	47.3	18.7	17.4	15.6	7.1	2.4	0.8	0.4
Kicukiro	16.6	5.9	35.5	5.2	4.7	4.2	1.9	0.9	0.0	0.3
Nyanza	67.1	42.8	63.8	40.4	38.4	36.2	14.9	4.0	0.3	0.3
Gisagara	67.3	44.1	65.5	42.1	38.0	35.8	14.8	6.1	0.3	-
Nyaruguru	100.7	34.5	34.3	30.5	28.5	23.7	11.7	6.0	0.9	-
Huye	58.1	33.2	57.1	31.4	30.8	29.0	13.8	2.3	0.2	0.1
Nyamagabe	109.1	46.5	42.6	41.5	39.1	34.1	12.7	7.3	0.2	0.0
Ruhango	62.6	47.1	75.3	44.2	43.7	40.2	14.2	3.4	0.7	0.1
Muhanga	64.4	42.0	65.2	36.9	36.1	30.5	16.9	5.8	0.5	-
Kamonyi	65.8	45.4	69.0	39.9	42.1	36.0	18.0	3.3	0.7	0.1
Karongi	78.9	42.0	53.2	35.9	34.2	27.5	14.6	7.8	0.6	-
Rutsiro	66.0	39.0	59.0	27.2	26.9	20.6	16.8	6.3	0.3	5.8
Rubavu	33.8	23.8	70.3	22.4	22.7	21.2	5.7	0.7	0.7	0.3
Nyabihu	53.6	34.8	64.8	30.0	26.0	25.3	6.4	4.6	0.9	4.1
Ngororero	67.5	45.8	67.8	38.5	35.3	29.9	15.8	8.3	0.3	2.1
Rusizi	91.4	36.1	39.4	33.7	34.5	32.1	12.3	1.5	0.1	-
Nyamasheke	94.8	39.4	41.6	30.1	37.5	28.2	21.5	1.9	-	-
Rulindo	56.7	36.2	63.9	32.4	31.7	29.0	13.0	3.2	0.2	1.2
Gakenke	70.1	48.8	69.6	41.8	44.3	37.2	21.3	4.5	0.1	0.1
Musanze	50.9	29.3	57.5	28.4	25.8	24.8	3.9	3.5	0.4	-
Burera	58.4	36.8	62.9	36.1	31.7	30.7	3.0	5.1	0.4	-
Gicumbi	82.5	48.4	58.6	45.6	46.0	42.2	11.5	2.3	1.1	-
Rwamagana	65.3	46.2	70.8	42.2	42.3	39.3	23.5	2.2	0.7	1.7
Nyagatare	191.1	148.1	77.5	74.2	74.1	69.1	87.9	4.6	0.6	69.4
Gatsibo	153.6	74.9	48.7	58.9	63.1	53.9	37.4	4.8	0.3	7.0
Kayonza	179.2	96.4	53.8	63.7	62.4	58.7	48.1	4.8	0.2	29.2
Kirehe	114.9	73.1	63.6	60.1	64.7	57.1	31.6	2.9	0.1	5.4
Ngoma	80.5	53.2	66.1	47.2	47.9	42.1	19.9	4.7	0.6	0.6
Bugesera	120.4	74.0	61.4	65.5	60.2	55.7	21.7	9.0	0.8	4.7
National	2,377.1	1,393.2	58.6	1,149.6	1,135.1	1,013.9	544.6	125.1	12.8	133.0

Source: NISR, SAS 2022

Table 10. 2022_Area under agricultural practices (ha)

District	Agricultural land under Modern irrigated (Ha)			Agricultural area under erosion control (Ha)			Agricultural area under agroforestry trees			Agricultural area under fertilizer application					
										Inorganic fertilizer			Organic fertilizer		
	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C
Nyarugenge			1	2,800	3,283	-	3,039	3,130	-	637	375	232	2,629	2,150	118
Gasabo	319	325	8	17,531	15,705	-	11,348	12,843	-	4,141	2,647	209	11,321	9,678	286
Kicukiro	93	155	3	2,811	3,847	-	3,403	3,641	-	1,820	1,520	4	2,558	2,085	22
Nyanza	903	697	72	33,363	31,161	-	13,459	17,034	-	7,321	3,989	210	23,342	18,965	554
Gisagara	1,627	2,174	36	29,327	24,291	-	17,738	18,899	-	14,058	8,512	210	23,668	16,239	175
Nyaruguru	73	116	1	33,361	33,260	-	15,060	16,659	-	15,447	10,883	266	23,080	17,753	717
Huye	1,085	1,013	55	27,941	27,057	-	14,453	15,834	-	7,769	5,454	219	20,623	16,359	410
Nyamagabe	23	15	13	40,831	41,504	-	15,498	19,005	-	11,467	8,771	101	24,002	21,201	354
Ruhango	1,263	1,036	59	35,345	34,256	-	19,744	21,398	-	5,506	3,593	82	22,983	19,550	213
Muhanga	640	186	11	35,000	35,668	-	14,323	14,539	-	7,277	3,969	82	23,302	19,227	301
Kamonyi	397	188	2	34,648	35,046	-	15,562	16,745	-	6,574	3,202	128	25,082	20,629	313
Karongi	124	6	8	35,259	29,979	-	18,582	18,874	-	9,635	6,133	28	22,172	18,827	69
Rutsiro	57			31,917	28,914	-	15,838	15,640	-	11,210	8,708	50	21,708	15,900	60
Rubavu				19,739	20,352	-	10,301	9,887	-	10,558	9,878	1,112	7,929	6,291	491
Nyabihu	52			28,403	28,708	-	21,477	24,809	-	16,982	13,529	3,190	19,010	15,213	2,774
Ngororero	20		45	36,542	37,536	-	15,843	16,344	-	11,329	10,410	56	27,201	23,529	101
Rusizi	1,527	1,509	9	24,177	23,760	-	19,031	20,741	-	19,360	11,258	206	22,612	14,728	211
Nyamasheke	526	360		31,709	32,693	-	22,023	26,242	-	18,542	13,378	47	24,571	20,663	48
Rulindo	904	115	116	32,863	33,058	-	17,495	20,318	-	11,543	9,553	221	26,524	24,070	276
Gakenke		61	27	45,768	46,100	-	24,250	28,479	-	24,450	16,249	243	38,172	32,483	253
Musanze				25,008	24,434	-	16,000	13,829	-	12,495	11,027	1,862	17,668	15,617	2,297
Burera			12	30,604	31,333	-	11,326	11,070	-	13,474	9,824	2,511	24,622	20,877	2,831
Gicumbi		80	5	42,875	43,627	-	16,886	21,258	-	12,950	9,521	196	36,500	31,045	318
Rwamagana	1,361	654		40,569	37,616	-	28,141	35,386	-	17,702	8,703	215	29,498	17,762	100
Nyagatare	3,165	2,697	499	66,023	70,338	-	54,502	76,015	-	28,154	23,125	763	29,307	23,379	493
Gatsibo	2,103	2,399		59,501	53,532	-	39,464	41,016	-	22,165	14,289	92	44,675	36,613	110
Kayonza	3,419	2,355		39,706	32,172	-	27,761	29,022	-	19,083	16,045	138	29,577	21,657	295
Kirehe	3,577	2,536	9	39,377	38,006	-	43,260	40,336	-	28,064	14,555	158	39,295	20,408	156
Ngoma	970	886	44	35,637	31,829	-	34,154	34,679	-	16,578	3,949	47	29,546	12,889	52
Bugesera	2,907	1,533	114	37,522	38,159	-	38,083	41,249	-	20,323	14,500	86	28,612	19,654	68
National	27,134	21,096	1,148	996,156	967,224	-	618,044	684,921	-	406,613	277,549	12,965	721,789	555,443	14,468

Source: NISR, SAS 2022

Table 11. Season A 2022_Cultivated area by crop type per district (ha)

District	Maize	Sorghum	Paddy rice	Wheat	Other cereals	Cassava	Sweet potato	Irish potato	Yams & Taro	Bananas	Cooking banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Pea	Groundnut	Soybean	Vegetables	Fruits	Fodder Crops	Other crops	Total developed land
Nyarugenge	819	-	-	-	-	650	339	85	122	1,959	625	372	961	2,041	2,012	30	-	55	202	297	50	88	454	7,161
Gasabo	3,303	-	220	-	20	3,700	1,118	681	544	4,864	1,962	1,005	1,897	8,097	7,648	449	125	463	325	534	8	649	313	24,962
Kicukiro	1,094	-	36	-	3	374	371	18	232	1,123	528	174	422	1,886	1,859	27	-	34	88	183	50	113	179	5,784
Nyanza	5,459	412	417	-	68	16,393	2,319	334	885	8,991	2,845	1,398	4,748	18,461	15,609	2,852	114	748	1,538	613	326	347	1,596	59,020
Gisagara	5,910	883	2,526	-	420	5,837	2,527	310	1,936	9,855	2,632	2,023	5,199	16,252	14,938	1,314	123	379	2,148	401	1,173	54	690	51,424
Nyaruguru	5,421	-	-	-	6	3,729	4,509	1,523	854	5,400	1,506	965	2,929	8,654	1,744	6,910	346	-	708	536	104	560	4,690	37,040
Huye	4,859	-	996	-	258	9,220	3,268	1,014	772	7,977	2,622	1,694	3,662	14,239	10,765	3,473	133	256	2,057	453	144	224	1,438	47,309
Nyamagabe	5,031	-	23	119	6	6,244	7,591	2,957	779	7,331	1,647	720	4,964	11,236	3,443	7,793	1,360	-	1,306	308	56	169	3,150	47,668
Ruhango	4,018	23	856	-	10	19,601	1,864	492	2,641	8,411	1,913	1,590	4,907	12,861	9,335	3,526	101	941	3,247	577	75	624	1,680	58,021
Muhanga	1,925	23	146	8	107	10,547	4,857	310	6,101	17,043	3,276	1,882	11,885	7,506	3,847	3,658	82	23	1,875	545	197	397	983	52,675
Kamonyi	4,663	-	190	-	-	12,072	2,187	702	1,401	11,107	1,572	1,479	8,056	14,320	12,300	2,020	93	804	2,325	914	848	614	2,837	55,076
Karongi	7,482	-	-	-	-	8,427	4,828	1,166	5,038	10,203	2,302	1,065	6,836	6,743	2,270	4,473	687	16	1,130	822	16	426	3,354	50,337
Rutsiro	6,304	-	-	240	-	2,078	3,876	3,481	3,969	6,538	1,730	1,022	3,786	4,203	594	3,609	587	-	783	224	538	165	3,114	36,102
Rubavu	1,768	94	-	-	-	894	620	6,278	169	3,042	965	294	1,783	7,864	716	7,148	89	-	308	2,090	125	577	1,162	25,080
Nyabihu	2,808	795	-	786	-	512	3,311	10,130	-	1,152	257	244	651	7,249	235	7,014	889	-	5	682	549	111	823	29,802
Ngororero	4,725	617	-	407	-	4,321	6,121	1,996	2,497	11,143	2,573	1,566	7,004	12,411	1,977	10,434	397	-	1,308	261	308	114	1,208	47,833
Rusizi	7,451	19	1,394	-	-	15,697	2,192	224	2,374	6,344	2,462	524	3,357	12,156	9,519	2,637	142	681	1,258	627	295	47	2,721	53,623
Nyamasheke	5,304	33	372	27	136	12,204	3,197	104	1,448	7,558	2,449	1,059	4,050	8,657	2,682	5,975	164	335	1,640	277	227	-	8,042	49,727
Rulindo	4,652	-	16	50	6	4,438	4,818	1,233	108	6,244	1,700	1,262	3,282	12,184	5,977	6,208	510	77	336	1,025	371	121	1,518	37,706
Gakenke	10,766	-	121	142	613	4,867	8,505	1,136	5,754	13,556	2,500	1,862	9,195	9,324	2,225	7,099	563	167	643	605	382	218	1,808	59,170
Musanze	6,890	2,286	-	977	5	174	2,366	4,522	435	1,916	753	353	810	6,072	367	5,706	221	-	20	676	362	151	747	27,819
Burera	9,578	1,138	-	570	51	132	2,546	5,271	84	2,196	819	69	1,308	10,385	600	9,784	1,671	-	-	321	67	267	30	34,306
Gicumbi	5,257	216	-	170	185	2,755	7,392	3,165	14	5,812	2,192	1,391	2,230	19,791	6,148	13,643	1,680	188	160	517	236	744	1,255	49,539
Rwamagana	9,337	-	501	-	662	4,339	2,180	1,101	189	11,951	6,953	2,053	2,945	17,215	16,798	416	113	1,830	245	1,070	491	344	1,535	53,102
Nyagatare	21,340	17,086	1,687	-	897	3,026	1,751	581	-	10,588	5,979	1,311	3,297	17,559	15,733	1,826	209	1,614	746	621	134	792	245	78,876
Gatsibo	16,240	4,119	1,491	0	1,473	3,748	2,615	2,379	583	21,263	11,701	3,150	6,412	22,048	20,257	1,791	69	2,022	891	939	224	41	2,599	82,745
Kayonza	12,479	2,853	1,654	-	1,079	11,946	2,155	1,909	309	11,973	7,864	1,279	2,829	16,252	16,160	92	128	1,391	159	778	1,687	190	1,225	68,167
Kirehe	22,482	2,400	931	-	693	4,724	1,739	1,376	589	18,305	10,379	1,317	6,610	20,727	18,881	1,845	185	635	437	418	1,053	-	1,028	77,720
Ngoma	12,867	333	867	-	4,009	7,080	2,279	1,645	498	16,090	8,378	1,973	5,739	16,969	15,892	1,077	63	752	448	412	476	394	1,051	66,233
Bugesera	9,452	4,140	1,396	-	40	6,477	4,331	318	99	9,571	3,350	1,503	4,718	19,078	19,010	67	27	1,730	660	993	340	282	1,839	60,770
National	219,683	37,469	15,840	3,495	10,746	186,204	97,771	56,442	40,424	259,505	96,434	36,598	126,472	362,439	239,540	122,898	10,872	15,144	26,996	18,721	10,914	8,824	53,313	1,434,799
SSF	213,337	37,440	301	3,472	10,564	186,134	97,754	56,342	40,422	259,372	96,315	36,591	126,466	361,482	238,599	122,883	10,861	15,139	26,727	18,586	10,540	8,298	52,521	1,409,293
LSF	6,346	29	15,539	23	182	69	18	99	2	133	120	7	6	956	941	15	11	5	268	135	373	525	791	25,506

Source: NISR, SAS 2022

Table 12. Season B 2022_Cultivated area by crop type per district (ha)

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

Source: NISR, SAS 2022

Table 13. Season C 2022_Cultivated area by crop type per district (ha)

District/Crop	Sweet potato	Irish potato	Beans	Bush bean	Climbing bean	Pea	Soybean	Vegetables	Developed land
Nyarugenge	9	0	104	104	-	-	108	178	401
Gasabo	102	15	8	8	-	-	0	330	456
Kicukiro	32	1	61	61	-	-	1	49	144
Nyanza	207	10	118	108	10	139	45	279	798
Gisagara	589	13	293	288	4	21	224	214	1,352
Nyaruguru	484	294	280	278	1	32	0	45	1,133
Huye	326	121	206	195	11	86	17	196	951
Nyamagabe	307	458	16	13	3	20	-	41	841
Ruhango	201	7	41	41	0	35	1	156	441
Muhanga	164	62	74	70	3	36	117	134	587
Kamonyi	101	27	358	357	1	32	77	392	988
Karongi	112	75	4	3	0	8	11	50	260
Rutsiro	56	51	-	-	-	55	-	16	178
Rubavu	59	965	6	6	-	37	-	214	1,282
Nyabihu	127	2,829	35	-	35	65	-	134	3,189
Ngororero	91	59	2	2	-	0	35	15	203
Rusizi	68	58	58	58	-	-	11	367	562
Nyamasheke	109	0	-	-	-	-	-	100	209
Rulindo	73	245	13	13	-	1	-	54	386
Gakenke	169	280	28	27	1	-	138	63	678
Musanze	421	1,863	66	36	30	10	-	297	2,657
Burera	384	2,374	-	-	-	0	-	94	2,852
Gicumbi	107	474	8	8	-	0	1	21	609
Rwamagana	64	19	135	135	0	0	19	251	488
Nyagatare	250	16	0	0	-	-	2	569	837
Gatsibo	178	7	2	2	-	0	-	177	364
Kayonza	37	79	23	23	-	1	1	162	303
Kirehe	107	47	17	17	-	0	9	228	409
Ngoma	40	4	174	174	-	2	10	81	312
Bugesera	104	5	1,162	1,162	-	0	209	190	1,669
National	5,079	10,458	3,292	3,191	101	581	1,034	5,097	25,541

Source: NISR, SAS 2022

Table 14. Season A 2022_Harvested area by crop type per district (ha)

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

Source: NISR, SAS 2022

Table 15. Season B 2022_Harvested area by crop type per district (ha)

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

Source: NISR, SAS 2022

Table 16. Season C 2022_Harvested area by crop type per district (ha)

District/Crop	Sweet potato	Irish potato	Beans	Bush bean	Climbing bean	Pea	Soybean	vegetables	Developed land
Nyarugenge	9	0	104	104	-	-	108	178	401
Gasabo	102	15	8	8	-	-	0	330	456
Kicukiro	32	1	61	61	-	-	1	49	144
Nyanza	207	10	118	108	10	139	45	279	798
Gisagara	589	13	293	288	4	21	224	214	1,352
Nyaruguru	484	294	280	278	1	32	0	45	1,133
Huye	326	121	206	195	11	86	17	196	951
Nyamagabe	307	458	16	13	3	20	-	41	841
Ruhango	201	7	41	41	0	35	1	156	441
Muhanga	164	62	74	70	3	36	117	134	587
Kamonyi	101	27	358	357	1	32	77	392	988
Karongi	112	75	4	3	0	8	11	50	260
Rutsiro	56	51	-	-	-	55	-	16	178
Rubavu	59	965	6	6	-	37	-	214	1,282
Nyabihu	127	2,829	35	-	35	65	-	134	3,189
Ngororero	91	59	2	2	-	0	35	15	203
Rusizi	68	58	58	58	-	-	11	367	562
Nyamasheke	109	0	-	-	-	-	-	100	209
Rulindo	73	245	13	13	-	1	-	54	386
Gakenke	169	280	28	27	1	-	138	63	678
Musanze	421	1,863	66	36	30	10	-	297	2,657
Burera	384	2,374	-	-	-	0	-	94	2,852
Gicumbi	107	474	8	8	-	0	1	21	609
Rwamagana	64	19	135	135	0	0	19	251	488
Nyagatare	250	16	0	0	-	-	2	569	837
Gatsibo	178	7	2	2	-	0	-	177	364
Kayonza	37	79	23	23	-	1	1	162	303
Kirehe	107	47	17	17	-	0	9	228	409
Ngoma	40	4	174	174	-	2	10	81	312
Bugesera	104	5	1,162	1,162	-	0	209	190	1,669
National	5,079	10,458	3,292	3,191	101	581	1,034	5,097	25,541

Source: NISR, SAS 2022

Table 17. Season A 2022_Average yield by crop type per district (Kg/Ha)

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

Source: NISR, SAS 2022

Table 18. Season B 2022_Average yield by crop type per district (Kg/Ha)

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

Source: NISR, SAS 2022

Table 19. Season C 2022_Average yield by crop type per district (Kg/Ha)

District/Crop	Tubers and Roots	Sweet potatoes	Irish potatoes	Bean	Bush bean	Climbing bean	Peas	Soya beans	Vegetables
Nyarugenge	4,947	4,646	11,540	757	757	-	-	810	12,838
Gasabo	5,429	5,093	7,674	724	724	-	-	-	11,624
Kicukiro	8,896	9,231	-	892	892	-	-	-	16,039
Nyanza	5,165	5,277	2,904	1,024	980	1,508	1,083	1,027	11,285
Gisagara	4,278	4,305	3,038	765	777	-	288	445	8,145
Nyaruguru	5,991	4,992	7,635	1,072	1,075	308	1,620	-	10,206
Huye	5,751	6,112	4,780	948	1,004	-	628	817	8,411
Nyamagabe	6,640	5,327	7,521	840	917	524	637	-	9,952
Ruhango	7,831	7,966	3,975	1,165	1,159	1,999	648	800	12,673
Muhanga	7,208	7,798	5,649	946	978	300	544	894	8,733
Kamonyi	5,235	5,210	5,327	1,264	1,268	-	1,438	1,030	11,200
Karongi	8,199	6,268	11,105	1,064	1,167	-	503	572	8,567
Rutsiro	9,913	6,422	13,781	-	-	-	309	-	8,592
Rubavu	11,683	4,818	12,106	902	902	-	505	-	8,719
Nyabihu	10,325	5,327	10,549	653	-	653	593	-	14,372
Ngororero	7,205	5,635	9,640	1,258	1,258	-	-	487	5,413
Rusizi	7,595	8,962	6,014	1,432	1,432	-	-	1,514	12,983
Nyamasheke	4,356	4,358	-	-	-	-	-	-	10,278
Rulindo	6,144	5,088	6,460	1,206	1,206	-	-	-	12,094
Gakenke	6,564	8,558	5,361	795	810	-	-	733	11,152
Musanze	7,472	6,045	7,795	824	570	1,122	265	-	9,861
Burera	7,413	5,193	7,773	-	-	-	-	-	11,191
Gicumbi	6,970	6,012	7,186	1,106	1,106	-	-	-	7,656
Rwamagana	4,188	4,260	3,949	961	961	-	-	439	10,120
Nyagatare	4,952	5,185	1,398	-	-	-	-	-	10,511
Gatsibo	7,476	7,543	5,759	822	822	-	-	-	9,185
Kayonza	3,467	8,581	1,052	758	758	-	-	-	14,898
Kirehe	4,191	3,939	4,767	933	933	-	1,169	2,731	9,960
Ngoma	5,426	5,022	9,890	998	998	-	259	377	12,138
Bugesera	5,502	5,526	4,990	1,085	1,085	-	-	847	10,334
National	**7,717**	**5,706**	**8,694**	**1,027**	**1,036**	**746**	**765**	**759**	**10,860**

Source: NISR, SAS 2022

Table 20. Season A 2022_Average yield on Large scale farmers by crop type and district (Kg/Ha)

District	Maize	Sorghum	Paddy rice	Wheat	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Bananas	Cooking Banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Peas	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops	Other crops
Gasabo	2,311	-	3,481	-	40,079	9,247	-	-	2,642	2,642	-	-	455	455	-	-	-	382	15,621	1,510	57,734	722
Kicukiro	791	-	3,099	-	-	-	-	-	2,861	2,443	3,871	-	112	112	-	-	-	-	10,810	5,911	4,846	2,285
Nyanza	2,688	-	4,590	-	-	2,447	-	-	1,740	325	4,185	5,582	-	-	-	-	-	38	6,354	-	11,268	-
Gisagara	4,336	-	4,545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nyaruguru	3,870	-	-	-	-	-	10,591	-	18,174	7,156	21,864	31,868	-	-	-	-	-	-	-	460	34,471	-
Huye	3,747	-	4,009	-	-	-	-	-	15,221	15,554	2,540	-	294	294	-	-	-	794	29,298	-	-	13,438
Nyamagabe	-	-	-	-	-	-	10,143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ruhango	-	-	4,996	-	-	-	-	-	4,936	-	4,510	23,895	106	112	73	-	-	-	-	-	-	-
Muhanga	2,868	-	2,613	999	-	-	24,992	-	-	-	-	-	2,370	-	2,370	-	-	201	-	-	-	-
Kamonyi	5,233	-	3,302	-	-	-	-	-	-	-	-	-	409	409	-	-	-	1,036	-	-	-	144
Karongi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,864
Rubavu	-	-	-	-	-	-	9,693	-	17,478	17,478	-	-	-	-	-	85	-	-	-	-	8,624	127
Rusizi	2,000	-	4,316	-	-	-	-	-	-	-	-	-	485	485	-	-	-	-	-	11,496	-	89
Nyamasheke	-	-	3,911	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	562
Rulindo	2,348	-	3,857	2,845	-	-	27,310	-	-	-	-	-	2,464	-	2,464	422	-	65	9,367	-	-	632
Gicumbi	-	-	-	2,628	-	-	9,649	-	34,938	34,938	-	-	-	-	-	290	-	-	4,176	-	9,831	-
Rwamagana	3,935	-	3,562	-	30,125	1,735	2,377	-	5,710	5,357	9,225	21,964	720	720	-	10	34	164	3,588	1,612	24,081	539,013
Nyagatare	5,155	3,194	4,082	-	12,625	-	7,855	-	10,682	10,665	11,464	-	905	948	383	-	-	1,864	3,659	3,807	875	2,279
Gatsibo	3,056	2,378	3,138	416	49,929	6,447	9,623	-	19,085	16,677	33,441	48,906	946	937	1,520	-	76	1,061	-	-	19,226	20,609
Kayonza	3,043	429	4,197	-	26,611	3,116	3,931	877	6,372	6,282	7,248	14,506	469	469	-	-	29	635	3,395	10,053	7,042	418
Kirehe	5,983	-	4,962	-	-	-	-	-	-	-	-	-	1,707	1,707	-	-	-	1,854	6,113	-	-	207
Ngoma	3,655	-	3,552	-	100,160	457	4,367	-	1,933	1,388	6,336	8,384	1,301	1,219	3,431	59	11	-	3,861	5,251	36,814	8,231
Bugesera	1,559	829	5,717	-	4,818	2,769	5,244	-	7,720	3,457	3,830	12,112	326	326	-	-	-	363	3,557	2,175	11,462	1,394
National	4,186	1,721	4,269	2,206	10,283	2,787	10,359	877	7,960	7,660	7,730	13,779	1,320	1,313	1,697	94	29	1,265	5,220	5,535	21,854	81,503

Source: NISR, SAS 2022

Table 21. Season B 2022_Average yield on large scale farmers by crop type and district (Kg/Ha)

District	Maize	Sorghum	Paddy rice	Wheat	Chia seed	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
Gasabo	734	2,231	4,720	-	-	-	18,449	-	-	-	21,968	21,968	-	-	-	-	-	-	-	1,648	-	16,916	10,506	5,534
Kicukiro	-	350	4,733	-	249	-	-	-	-	-	13,459	6,577	19,547	-	211	211	-	-	-	840	-	-	13,245	-
Nyanza	-	-	3,648	-	-	-	-	-	9,623	-	20,115	17,516	21,948	21,637	155	155	-	-	-	-	6,242	-	254	100
Gisagara	3,737	-	4,021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,145	-	-	-	-
Nyaruguru	-	-	-	-	723	-	-	-	20,134	-	15,955	17,515	14,177	17,459	1,939	-	1,939	-	-	-	-	6,653	16,415	-
Huye	1,000	-	3,450	-	-	-	20,001	-	-	-	17,516	17,516	-	-	-	-	-	-	-	411	17,504	-	13,587	1,013
Nyamagabe	257	-	-	2,863	-	-	-	-	10,024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ruhango	3,750	1,383	3,537	-	-	-	11,312	-	-	-	21,345	19,116	22,165	17,459	204	204	-	-	-	-	7	-	-	1,473
Muhanga	6,281	-	2,020	2,457	-	-	-	-	4,914	-	-	-	-	-	473	-	473	-	-	-	-	-	-	-
Kamonyi	3,273	-	2,710	-	-	-	-	-	-	-	-	-	-	-	366	366	-	-	-	706	-	-	-	19
Karongi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,660
Rubavu	-	-	-	-	-	-	-	-	19,796	939	17,516	17,516	-	-	707	707	-	332	-	-	-	-	17,249	236
Rusizi	947	-	5,228	-	-	-	9,952	-	-	-	-	-	-	-	270	270	-	-	-	-	-	12,156	-	60
Nyamasheke	-	-	3,931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,442
Rulindo	-	1,100	3,894	1,586	-	-	-	-	7,742	-	-	-	-	-	1,847	-	1,847	-	-	-	11,523	-	-	1,113
Gicumbi	-	-	-	2,887	-	-	-	-	10,367	-	-	-	-	-	-	-	-	-	-	-	-	-	23,558	-
Rwamagana	1,797	746	4,887	-	577	-	18,449	1,640	1,779	-	19,591	20,212	14,411	15,750	849	873	197	88	-	214	4,500	2,612	16,225	7,770
Nyagatare	3,767	-	3,921	-	587	-	48,554	6,982	6,104	-	21,353	21,490	11,224	-	1,137	1,124	2,223	-	135	943	5,611	12,095	11,402	1,653
Gatsibo	2,137	1,016	3,541	-	405	-	-	9,763	7,835	-	14,896	15,404	9,433	17,459	502	502	-	-	600	663	3,645	-	11,700	-
Kayonza	5,413	817	3,952	-	178	136	16,927	4,010	11,169	3,816	14,719	14,734	11,927	15,683	642	642	-	-	292	1,331	946	4,191	7,554	5,464
Kirehe	5,470	-	4,467	2,280	549	-	-	-	-	-	-	-	-	-	1,734	1,734	-	-	-	454	8,997	-	-	98
Ngoma	4,015	-	3,608	-	1,093	-	27,724	-	-	-	18,159	17,398	22,729	17,459	486	486	-	-	166	209	5,580	2,769	4,011	955
Bugesera	2,014	247	5,955	-	518	-	-	-	8,796	-	15,890	17,007	10,650	19,408	761	762	722	405	497	440	2,034	993	34,663	416
National	4,302	870	4,149	2,230	477	136	14,304	3,634	15,202	3,073	16,489	16,613	12,829	18,519	1,010	986	1,578	268	341	695	4,271	4,555	21,443	1,718

Source: NISR, SAS 2022

Table 22. Season C_Average yield by crop type and district-SITE (Kg/Ha)

	Tubers and Roots	Sweet potatoes	Irish potatoes	Bean	Bush bean	Climbing bean	Peas	Soya beans	Vegetables
Nyarugenge	4,070	3,020	11,540	428	428	-	-	1,329	14,010
Gasabo	6,711	5,289	8,170	724	724	-	-	-	12,380
Kicukiro	9,535	9,937	-	929	929	-	-	-	16,740
Nyanza	4,680	4,684	4,161	913	931	-	1,083	1,027	10,303
Gisagara	3,910	4,015	3,038	904	925	-	288	492	7,388
Nyaruguru	6,374	6,585	6,324	1,035	1,051	308	-	-	11,447
Huye	6,902	7,339	6,089	915	977	-	628	817	7,370
Nyamagabe	7,702	4,773	7,841	916	917	908	659	-	11,592
Ruhango	8,386	8,439	6,522	940	925	1,999	945	800	13,147
Muhanga	5,850	5,811	5,869	1,014	1,056	300	589	862	10,594
Kamonyi	5,163	5,066	6,306	1,195	1,201	-	992	403	10,456
Karongi	9,580	6,358	11,862	1,064	1,167	-	503	-	8,586
Rutsiro	10,165	6,207	12,502	-	-	-	317	-	8,592
Rubavu	14,549	-	14,549	-	-	-	-	-	5,642
Nyabihu	10,995	-	10,995	-	-	-	-	-	14,752
Ngororero	7,096	5,308	10,950	1,258	1,258	-	-	487	5,193
Rusizi	8,285	7,678	9,384	1,335	1,335	-	-	1,514	13,421
Nyamasheke	4,446	4,453	-	-	-	-	-	-	10,920
Rulindo	6,411	6,372	6,417	-	-	-	-	-	12,275
Gakenke	6,476	9,577	5,155	795	810	-	-	662	12,482
Musanze	11,272	7,701	11,788	402	489	-	265	-	9,772
Burera	7,314	9,519	7,046	-	-	-	-	-	15,065
Gicumbi	5,950	7,340	5,792	2,105	2,105	-	-	-	7,656
Rwamagana	4,169	4,609	2,288	909	910	-	-	1,342	11,886
Nyagatare	5,205	5,254	-	-	-	-	-	-	11,356
Gatsibo	8,695	9,479	5,759	822	822	-	-	-	12,936
Kayonza	7,923	8,062	7,514	766	766	-	-	-	11,314
Kirehe	4,770	4,281	6,577	933	933	-	1,169	2,731	10,273
Ngoma	5,182	5,178	6,789	998	998	-	259	377	10,786
Bugesera	5,495	5,527	2,050	1,052	1,052	-	-	783	10,128
National	**7,316**	**6,323**	**7,893**	**1,013**	**1,025**	**133**	**738**	**756**	**11,116**

Source: NISR, SAS 2022

Table 23. Season A 2022_Crop production by crop type per district (MT)

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

Source : NISR, SAS 2022

Table 24. Season B 2022_Crop production by crop type per district (MT)

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

Source: NISR, SAS 2022

Table 25. Season C 2022_Crop production by crop type per district (MT)

District/Crop	Sweet potatoes	Irish potatoes	Bush bean	Bush bean	Climbing bean	Peas	Soya beans	Vegetables	*Total*
Nyarugenge	44	5	79	79	-	-	88	2,286	2,501
Gasabo	521	118	6	6	-	-	-	3,836	4,481
Kicukiro	296	-	54	54	-	-	-	783	1,134
Nyanza	1,092	30	121	106	15	150	46	3,152	4,590
Gisagara	2,535	38	224	224	-	6	99	1,740	4,643
Nyaruguru	2,414	2,243	300	299	0	51	-	458	5,465
Huye	1,990	579	196	196	-	54	14	1,645	4,477
Nyamagabe	1,634	3,441	14	12	2	13	-	405	5,506
Ruhango	1,600	28	48	47	1	23	1	1,974	3,672
Muhanga	1,276	350	70	69	1	20	104	1,173	2,993
Kamonyi	528	144	453	453	-	46	80	4,391	5,642
Karongi	703	828	4	4	-	4	6	427	1,973
Rutsiro	360	698	-	-	-	17	-	138	1,213
Rubavu	286	11,685	6	6	-	18	-	1,868	13,864
Nyabihu	677	29,843	23	-	23	39	-	1,919	32,500
Ngororero	514	567	3	3	-	-	17	82	1,184
Rusizi	606	352	84	84	-	-	16	4,764	5,822
Nyamasheke	476	-	-	-	-	-	-	1,027	1,503
Rulindo	373	1,584	15	15	-	-	-	654	2,626
Gakenke	1,446	1,501	22	22	-	-	101	706	3,776
Musanze	2,547	14,518	54	20	34	3	-	2,934	20,055
Burera	1,995	18,455	-	-	-	-	-	1,049	21,498
Gicumbi	642	3,404	9	9	-	-	-	158	4,212
Rwamagana	272	76	130	130	-	-	8	2,536	3,022
Nyagatare	1,294	23	-	-	-	-	-	5,985	7,302
Gatsibo	1,340	40	2	2	-	-	-	1,626	3,007
Kayonza	320	83	17	17	-	-	-	2,410	2,830
Kirehe	423	225	16	16	-	0	24	2,274	2,962
Ngoma	203	36	174	174	-	1	4	989	1,407
Bugesera	573	25	1,260	1,260	-	-	177	1,967	4,002
National	**28,980**	**90,916**	**3,381**	**3,306**	**75**	**445**	**785**	**55,355**	**179,862**

Source: NISR, SAS 2022

Table 26. Season A 2022_Use of crop production by farmers (%)

Crops	Sold	Own consumption	Wages for hired labor	Farm rent	Offered as gift	Barter trade/Exchanged with other things	Seeds	Fodder purposes	Stored	Post harvesting losses	Other usage
Cereals											
Maize	30.46	57.65	0.68	1.64	5.76	0.01	0.94	0.29	2.32	0.11	0.14
Sorghum	58.52	27.64	1.16	2.55	3.81	0.15	2.76	0.02	3.28	0.09	0.01
Paddy rice	80.86	12.67	1.27	0.22	1.92	-	0.47	-	0.02	2.02	0.56
Wheat	34.28	47.80	0.58	0.21	5.21	0.14	11.16	0.08	0.30	0.04	0.20
Other cereals	72.03	18.83	0.80	1.22	2.51	-	3.21	-	0.25	1.11	0.04
Tubers and Roots											
Sweet potato	23.64	64.99	1.32	0.51	5.28	0.02	0.02	3.81	0.14	0.14	0.12
Irish potato	44.46	35.36	1.04	0.32	4.15	0.02	14.05	0.14	0.11	0.32	0.03
Yam & Taro	23.42	66.72	0.97	0.35	4.61	0.01	3.31	0.19	-	0.01	0.40
Cassava	42.51	51.59	0.87	1.01	3.42	0.04	-	0.20	0.06	0.15	0.16
Legumes and Pulses											
Bush bean	15.94	60.83	1.22	1.78	4.01	0.12	13.37	0.02	2.32	0.23	0.17
Climbing bean	13.62	62.13	0.85	0.57	6.55	0.08	14.13	0.02	1.77	0.13	0.15
Pea	34.64	48.58	0.26	0.05	2.55	0.43	13.23	0.02	0.08	0.16	-
Groundnut	12.14	67.34	0.32	0.52	1.67	-	16.90	-	1.10	0.00	-
Soybean	21.08	53.64	0.27	1.05	3.21	0.12	19.87	0.12	0.54	0.11	0.01
Banana											
Cooking banana	34.35	61.37	0.60	0.30	3.20	0.00	-	0.04	-	0.02	0.12
Dessert banana	64.77	32.24	0.17	0.07	2.37	0.01	0.00	0.04	-	0.18	0.15
Banana for beer	77.79	17.32	0.11	0.10	4.02	0.00	0.02	0.03	-	0.54	0.08
Vegetables and fruits											
Vegetables	72.59	21.50	0.01	0.28	3.61	0.00	1.00	0.00	-	0.88	0.12
Fruits	81.13	14.71	-	-	3.35	-	0.01	-	-	0.28	0.52
Fodder crops	4.76	-	0.80	-	0.52	1.36	0.01	91.04	0.09	0.00	1.41
Other crops	82.75	11.63	0.01	-	1.44	0.02	0.09	0.00	-	0.05	4.02

Source: NISR, SAS 2022

Table 27. Season B 2022_Use of crop production by farmers (%)

Crops	Sold	Own consumption	Wages for hired labor	Farm rent	Offered as gift	Barter trade / Exchanged with other things	Seeds	Fodder purposes	Stored	Post harvesting losses	Other usage
Cereals											
Maize	28.09	60.75	1.10	1.51	4.83	0.04	0.67	0.42	2.38	0.06	0.15
Sorghum	44.35	40.47	1.23	2.62	6.16	0.10	3.38	0.03	1.25	0.31	0.11
Paddy rice	77.41	15.81	0.70	0.13	2.79	-	0.68	-	0.18	1.30	0.99
Wheat	49.88	32.19	0.03	0.65	6.78	-	10.04	0.01	0.15	0.01	0.26
Other cereals	80.56	12.27	0.73	2.59	0.78	-	1.22	0.12	0.05	1.64	0.04
Tubers and Roots											
Sweet potato	23.58	66.27	1.17	0.70	4.64	0.08	0.04	3.34	0.08	0.04	0.06
Irish potato	37.60	44.70	0.57	0.55	3.96	0.03	12.15	0.03	0.04	0.27	0.11
Yam & Taro	25.53	63.49	0.67	0.51	4.99	0.12	4.32	-	-	0.02	0.34
Cassava	41.78	51.37	0.66	1.34	3.52	0.01	-	0.18	0.85	0.14	0.15
Legumes and Pulses											
Bush bean	16.40	59.52	1.45	2.37	4.28	0.07	13.82	0.03	1.77	0.17	0.10
Climbing bean	14.58	60.08	0.82	0.87	6.53	0.04	15.66	0.02	1.19	0.12	0.09
Pea	37.21	49.09	0.05	0.65	2.70	-	9.87	0.02	0.23	0.12	0.05
Groundnut	40.69	36.52	0.21	1.27	3.64	0.24	16.39	-	0.96	0.02	0.04
Soybean	33.95	42.62	0.48	0.81	3.57	0.12	17.49	0.20	0.54	0.19	0.03
Banana											
Cooking banana	39.63	55.21	1.04	0.26	3.63	0.01	-	0.01	-	0.00	0.21
Dessert banana	69.45	26.86	0.15	0.13	2.86	0.01	0.00	0.05	-	0.16	0.32
Banana for beer	77.63	15.75	0.12	0.02	5.66	0.02	0.00	0.04	-	0.59	0.18
Vegetables and fruits											
Vegetables	82.36	12.31	0.04	0.11	2.53	0.01	0.76	1.15	-	0.56	0.16
Fruits	75.87	20.13	0.03	-	3.58	-	-	0.11	-	0.06	0.22
Fodder crops	8.03	0.15	2.56	-	0.37	0.42	0.00	86.66	0.06	0.02	1.72
Other crops	93.50	3.53	0.03	0.29	0.79	-	0.01	0.00	-	0.10	1.74

Source: NISR, SAS 2022

Table 28. Season C 2022_ Use of crop production by farmers (%)

Crop Category	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
Tubers and Roots											
Sweet potato	31.6	57.1	1.6	1.4	5.5	0.0	0.0	2.2	0.3	0.0	0.0
Irish potato	48.9	37.5	0.5	0.2	5.3	0.0	6.8	0.1	0.1	0.4	0.3
Legumes and Pulses											
Bush bean	15.6	66.0	0.7	0.5	4.4	0.1	12.0	0.0	0.4	0.1	0.2
Climbing bean	12.7	77.1	-	-	1.3	-	9.0	-	-	-	-
Pea	70.3	21.9	0.1	0.2	2.0	0.0	5.3	-	0.1	0.0	0.0
Groundnut	-	-	-	-	-	-	-	-	-	-	-
Soybean	37.0	42.7	0.7	1.5	5.0	0.2	12.3	-	0.4	0.0	0.3
Vegetables and fruits											
Vegetables	75.3	19.6	0.1	0.4	3.6	0.0	0.2	0.1	0.1	0.7	0.1
Fruits	-	-	-	-	-	-	-	-	-	-	-
Other crops	-	-	-	-	-	-	-	-	-	-	-

Source: NISR, SAS 2022

Table 29. Sowing date per Season and District in 2022 (%)

	Season A 2022								Season B 2022										Season C 2022					
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	Total	Before 01/01	Between 01-15/01	Between 16-31/01	Between 01-15/02	Between 16-28/02	Between 01-15/03	Between16-31/03	After 31/03	Other seasons	Total	Before 01/05	Between 01-31/05	Between 01-30/06	Between 01-31/07	After 31/07	Total
Nyarugenge	0.4	5.8	9.5	35.7	4.6	5.5	38.6	100.0	1.0	2.6	4.0	26.8	18.8	6.6	1.6	1.2	37.5	100.0	10.9	10.9	50.9	26.4	0.9	100.0
Gasabo	2.3	35.5	22.5	5.6	1.3	1.1	31.6	100.0	1.9	9.3	5.7	25.5	12.1	3.8	1.9	1.6	38.1	100.0	7.1	53.2	19.1	16.7	4.0	100.0
Kicukiro	1.1	7.2	13.5	38.9	6.9	4.3	28.1	100.0	1.1	11.8	1.6	18.7	17.6	5.0	1.3	0.3	42.6	100.0	5.7	24.5	45.3	22.6	1.9	100.0
Nyanza	1.6	6.9	16.1	34.5	6.8	4.6	29.6	100.0	1.1	5.7	3.5	27.3	15.4	4.5	0.8	1.6	40.1	100.0	1.2	11.5	51.0	29.7	6.6	100.0
Gisagara	3.2	19.8	19.9	24.3	4.6	3.7	24.6	100.0	2.0	7.3	3.6	25.2	11.3	5.3	1.9	1.5	42.0	100.0	9.1	27.8	33.2	26.7	3.2	100.0
Nyaruguru	7.5	19.0	17.9	18.3	5.0	7.2	25.1	100.0	1.2	8.2	4.6	7.4	14.1	11.4	5.0	7.1	41.1	100.0	3.8	41.1	35.1	19.6	0.4	100.0
Huye	5.4	15.2	18.5	24.3	5.8	3.2	27.7	100.0	1.7	6.6	10.9	25.0	8.3	4.8	1.2	2.0	39.5	100.0	6.2	31.8	28.7	32.2	1.2	100.0
Nyamagabe	6.9	12.3	20.1	20.9	6.1	10.5	23.3	100.0	0.8	5.1	5.1	11.5	13.7	12.5	9.9	7.6	34.0	100.0	16.1	39.5	26.2	15.1	3.1	100.0
Ruhango	3.3	12.0	13.5	29.6	6.6	3.6	31.4	100.0	1.3	6.0	4.6	27.3	15.1	4.0	1.1	2.4	38.3	100.0	8.2	18.1	43.6	25.2	5.0	100.0
Muhanga	3.5	14.2	10.9	14.1	5.0	9.4	42.9	100.0	0.2	2.0	3.0	7.5	14.7	7.4	3.1	3.5	58.5	100.0	4.8	18.8	61.8	12.6	1.9	100.0
Kamonyi	1.1	4.9	17.7	28.6	4.8	6.0	36.9	100.0	0.6	7.7	3.9	31.7	7.5	3.4	1.1	1.8	42.5	100.0	34.0	31.1	20.6	13.4	1.0	100.0
Karongi	5.0	18.4	27.0	12.3	3.6	2.8	30.9	100.0	1.2	2.5	4.8	17.6	15.9	7.8	2.5	3.4	44.4	100.0	9.1	27.4	47.1	14.4	1.9	100.0
Rutsiro	20.7	23.9	13.0	3.5	2.0	4.1	32.8	100.0	1.4	2.3	4.8	13.7	14.4	8.2	4.6	6.4	44.2	100.0	5.7	20.5	36.9	35.3	1.6	100.0
Rubavu	25.6	36.7	4.9	3.7	2.7	6.7	19.8	100.0	1.2	3.5	3.8	20.4	14.3	13.1	9.1	8.5	26.0	100.0	4.1	17.6	16.2	56.8	5.4	100.0
Nyabihu	24.6	26.8	14.3	7.7	3.2	8.2	15.2	100.0	7.6	5.2	2.7	14.4	14.7	17.8	9.7	7.6	20.3	100.0	12.8	39.3	26.5	20.5	0.9	100.0
Ngororero	11.2	33.1	8.7	5.0	1.5	4.6	35.9	100.0	1.5	2.4	2.8	7.5	23.4	8.0	4.1	4.9	45.5	100.0	1.8	14.6	68.3	12.8	2.4	100.0
Rusizi	2.4	9.2	34.9	30.0	4.5	2.3	16.7	100.0	0.1	1.0	1.2	11.3	16.7	13.2	1.7	0.9	53.9	100.0	25.1	31.8	18.0	16.9	8.2	100.0
Nyamasheke	3.6	19.5	28.7	11.4	1.2	2.8	32.8	100.0	0.7	2.1	1.4	11.0	13.3	9.0	4.1	0.4	58.2	100.0	18.4	31.8	40.4	8.1	1.4	100.0
Rulindo	6.2	30.7	16.9	6.7	1.9	3.6	34.1	100.0	0.9	9.2	7.7	9.5	8.2	14.2	7.9	3.0	39.6	100.0	10.6	33.0	45.7	8.5	2.1	100.0
Gakenke	3.7	23.7	12.2	6.3	2.5	6.3	45.4	100.0	0.9	1.7	2.3	3.7	7.7	13.9	7.5	5.5	56.9	100.0	7.7	42.1	39.5	10.7	0.0	100.0
Musanze	30.9	30.8	7.6	5.6	1.9	6.4	16.8	100.0	1.1	5.3	2.4	8.4	8.9	18.6	14.9	18.7	21.7	100.0	5.2	23.4	41.9	27.5	2.1	100.0
Burera	19.5	38.8	17.0	6.1	2.7	4.2	11.7	100.0	2.3	12.0	11.1	8.4	12.5	10.9	21.5	8.8	12.6	100.0	2.3	34.1	53.9	8.2	1.5	100.0
Gicumbi	6.3	42.6	14.3	6.0	1.3	3.9	25.6	100.0	3.2	10.0	9.3	13.3	10.0	13.6	6.4	5.3	29.1	100.0	5.0	55.0	28.6	11.5	0.0	100.0
Rwamagana	1.1	8.4	22.3	25.1	2.9	2.9	37.2	100.0	1.1	10.3	3.2	16.9	14.8	7.7	1.3	1.8	43.1	100.0	16.5	20.6	30.9	28.4	3.6	100.0
Nyagatare	3.9	41.2	19.6	9.7	0.9	1.7	23.1	100.0	0.1	1.6	2.0	13.9	25.8	26.4	4.1	0.7	25.3	100.0	3.1	45.9	39.8	10.2	1.0	100.0
Gatsibo	1.3	24.9	27.6	9.8	1.6	1.0	33.9	100.0	0.6	5.3	2.5	9.0	19.7	17.6	2.3	0.8	42.3	100.0	8.5	39.5	32.6	16.3	3.1	100.0
Kayonza	1.3	5.9	23.0	23.6	10.9	5.2	30.2	100.0	2.8	9.5	2.5	10.0	19.8	16.8	6.8	1.5	30.4	100.0	10.4	33.6	28.8	24.0	3.2	100.0
Kirehe	0.7	3.1	11.3	38.1	14.4	2.8	29.7	100.0	1.8	7.5	4.6	9.7	21.2	10.5	1.5	0.6	42.6	100.0	11.9	29.9	25.8	27.3	5.2	100.0
Ngoma	1.3	8.5	24.4	22.9	5.7	3.0	34.2	100.0	0.6	5.3	1.7	11.2	16.5	16.1	3.8	0.8	44.1	100.0	8.3	22.6	33.3	30.4	5.4	100.0
Bugesera	2.0	8.4	16.5	32.6	7.6	3.0	30.0	100.0	1.6	5.6	3.9	11.1	20.9	20.1	4.8	0.6	31.4	100.0	1.6	15.3	41.6	38.0	3.5	100.0
National	5.6	18.4	18.3	18.9	4.6	4.2	30.1	100.0	1.4	5.9	4.0	15.1	15.2	11.5	4.3	3.0	39.7	100.0	9.2	29.3	37.6	21.2	2.8	100.0

Source: NISR, SAS 2022

Table 30. Sowing dates per Season and crop type in 2022 (%)

	Season A 2022								Season B 2022										Season C 2022					
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	Total	Before 01/01	Between 01-15/01	Between 16-31/01	Between 01-15/02	Between 16-28/02	Between 01- 15/03	Between16-31/03	After 31/03	Other seasons	Total	Before 01/05	Between 01- 31/05	Between 01- 30/06	Between 01-31/07	After 31/07	Total
Fruits	1.2	6.3	4.2	5.4	3.9	13.2	65.9	100	0.6	2.8	4.1	32.0	37.3	17.8	3.5	1.5	0.4	100	0.0	28.6	42.9	28.6	0.0	100
Vegetables	15.9	16.9	9.1	18.4	8.4	26.2	5.2	100	6.4	48.3	24.9	14.6	4.6	0.7	0.2	0.0	0.4	100	15.1	31.9	32.3	17.1	3.6	100
Other crops	1.2	3.1	2.2	9.6	1.6	5.9	76.5	100	17.4	29.3	15.6	18.0	12.6	3.0	3.0	0.6	0.6	100	0.0	100.0	0.0	0.0	0.0	100
Other cereals	2.4	18.9	26.3	35.2	10.7	6.5	-	100	0.0	0.0	1.8	1.2	1.8	16.1	27.4	51.2	0.6	100						
Taro & Yams	13.5	22.0	20.5	14.4	5.3	15.2	9.2	100	0.5	3.6	3.9	28.8	27.4	25.4	7.8	2.7	0.0	100						
Fodder crops	2.1	10.0	2.1	6.9	2.4	5.9	70.6	100	6.5	11.4	5.2	12.5	8.8	9.5	5.7	13.5	27.0	100						
Maize	6.3	27.3	28.9	29.2	6.4	1.7	0.2	100	2.9	3.9	4.3	18.4	19.5	22.2	14.5	14.3	0.1	100						
Paddy rice	89.3	2.7	2.0	2.7	1.3	2.0	-	100	3.8	3.6	3.7	7.7	2.6	4.3	1.8	3.4	69.1	100						
Sorghum	23.0	37.5	26.0	12.2	1.0	0.3	0.1	100	0.0	2.9	2.1	5.6	2.7	3.1	1.0	2.1	80.5	100						
Wheat	13.1	14.3	11.9	22.6	14.3	23.8	-	100	0.0	0.7	1.4	27.4	34.7	28.9	6.5	0.5	0.0	100						
Bush bean	1.0	19.0	29.8	39.5	9.4	1.3	0.0	100	0.1	0.6	1.8	21.9	29.9	28.5	14.3	2.9	0.0	100	0.4	4.9	34.1	53.7	6.9	100
Climbing bean	6.8	42.7	28.6	18.6	2.8	0.5	-	100	1.5	3.2	2.0	15.1	18.6	22.9	16.5	20.0	0.3	100	16.7	11.1	33.3	27.8	11.1	100
Pea	9.9	34.1	22.1	20.5	5.8	7.5	-	100	0.0	1.9	3.3	37.4	39.2	15.3	2.8	0.2	0.0	100	2.8	18.1	52.1	25.8	1.3	100
Irish potato	21.0	24.0	20.2	18.1	5.8	10.3	0.6	100	0.1	2.5	5.4	41.3	30.7	14.8	4.3	1.0	0.0	100	5.5	38.8	37.5	16.4	1.9	100
Sweet potato	13.2	11.6	7.0	9.1	6.0	22.9	30.2	100	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	99.5	100	16.1	33.4	37.6	12.0	1.0	100
Soybean	0.3	24.1	27.4	37.8	7.5	3.0	-	100	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	99.7	100	1.7	3.0	58.0	35.0	2.3	100
Groundnut	0.5	18.2	33.2	40.4	7.5	0.3	-	100	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	99.6	100						
Cooking banana	0.2	0.9	0.7	0.2	0.2	0.2	97.6	100	3.2	6.3	5.7	16.8	12.9	19.3	11.8	14.5	9.5	100						
Dessert banana	0.1	0.7	0.1	0.3	0.1	0.1	98.5	100	0.0	0.9	1.4	1.9	0.9	2.8	0.9	0.9	90.1	100						
Banana for beer	0.1	0.7	0.2	0.2	0.1	0.2	98.5	100	1.7	2.4	1.0	8.9	2.7	4.1	1.4	3.1	74.7	100						
Cassava	3.6	18.3	17.6	13.8	2.6	4.4	39.8	100	0.1	0.7	0.2	1.0	1.8	3.0	1.5	3.3	88.5	100						
National	1.2	6.3	4.2	5.4	3.9	13.2	65.9	100	0.6	2.8	4.1	32.0	37.3	17.8	3.5	1.5	0.4	100	9.2	29.3	37.6	21.2	2.8	100

Source: NISR, SAS 2022

Table 31. Cultivated area by cropping system, per season and district (%) in 2022

	Pure			Mixed		
District	Season A	Season B	Season C	Season A	Season B	Season C
Nyarugenge	31.8	23.1	65.2	68.2	76.9	34.8
Gasabo	24.2	32.4	64.9	75.8	67.6	35.1
Kicukiro	21.1	23.0	59.2	78.9	77.0	40.8
Nyanza	26.6	23.9	71.8	73.4	76.1	28.2
Gisagara	28.5	32.4	59.6	71.5	67.6	40.4
Nyaruguru	40.1	45.1	78.3	59.9	54.9	21.7
Huye	19.9	19.3	51.5	80.1	80.7	48.5
Nyamagabe	46.1	53.6	74.1	53.9	46.4	25.9
Ruhango	33.8	35.9	51.4	66.2	64.1	48.6
Muhanga	31.0	35.6	43.1	69.0	64.4	56.9
Kamonyi	24.8	29.2	41.5	75.2	70.8	58.5
Karongi	43.7	45.7	67.4	56.3	54.3	32.6
Rutsiro	41.8	47.7	72.9	58.2	52.3	27.1
Rubavu	48.3	64.0	68.8	51.7	36.0	31.2
Nyabihu	42.4	60.3	92.2	57.6	39.7	7.8
Ngororero	36.2	50.0	85.6	63.8	50.0	14.4
Rusizi	21.4	36.5	16.8	78.6	63.5	83.2
Nyamasheke	34.5	40.2	71.6	65.5	59.8	28.4
Rulindo	27.3	30.2	75.1	72.7	69.8	24.9
Gakenke	23.3	29.2	73.3	76.7	70.8	26.7
Musanze	36.4	56.2	75.6	63.6	43.8	24.4
Burera	52.5	72.8	83.4	47.5	27.2	16.6
Gicumbi	38.2	43.4	66.0	61.8	56.6	34.0
Rwamagana	12.1	17.5	30.8	87.9	82.5	69.2
Nyagatare	37.5	32.1	66.3	62.5	67.9	33.7
Gatsibo	24.3	27.8	89.4	75.7	72.2	10.6
Kayonza	25.2	26.2	46.5	74.8	73.8	53.5
Kirehe	21.7	35.2	50.9	78.3	64.8	49.1
Ngoma	24.0	34.5	22.3	76.0	65.5	77.7
Bugesera	25.8	22.4	22.3	74.2	77.6	77.7
National	30.8	36.3	74.6	69.2	63.7	25.4
Small scale farmers	29.2	35.0	80.5	70.8	65.0	19.5
Large scale farmers	95.1	95.8	-	4.9	4.2	-

Source: NISR, SAS 2022

Table 32: Season A 2022_ Use of improved seeds by farmer categories per 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		
District	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	22.4	22.4	-	22.0	22.0	-	20.8	20.8	-
Gasabo	44.7	44.7	45.5	42.1	40.1	56.1	40.9	39.8	89.8
Kicukiro	49.5	48.8	80.0	48.4	46.8	81.8	48.6	47.2	97.6
Nyanza	35.4	34.5	88.9	34.8	34.5	44.4	36.0	34.8	80.9
Gisagara	40.1	37.8	90.5	36.9	34.7	81.5	39.0	34.0	79.7
Nyaruguru	34.4	32.4	100.0	32.0	30.2	84.6	31.9	31.0	94.4
Huye	37.5	34.1	96.0	32.1	29.2	69.2	32.5	29.7	95.1
Nyamagabe	17.7	17.5	100.0	14.4	14.3	100.0	14.4	14.3	100.0
Ruhango	23.1	22.5	71.4	21.5	21.1	41.7	23.3	21.5	90.5
Muhanga	16.2	14.9	87.5	15.7	14.0	84.6	15.4	13.9	98.1
Kamonyi	29.5	28.3	83.3	26.0	24.6	86.7	26.1	24.8	93.2
Karongi	30.1	30.0	100.0	25.4	25.1	100.0	24.4	24.4	100.0
Rutsiro	18.1	18.1	-	21.8	21.8	-	20.7	20.7	-
Rubavu	12.8	12.7	25.0	14.0	14.1	11.1	14.8	14.8	25.1
Nyabihu	17.7	17.7	-	19.9	19.9	-	19.8	19.8	-
Ngororero	15.1	15.1	-	13.9	13.9	-	14.7	14.7	-
Rusizi	37.2	37.0	50.0	32.0	32.0	33.3	35.4	32.6	85.7
Nyamasheke	22.3	21.9	42.9	20.8	20.3	50.0	20.2	19.8	49.9
Rulindo	33.9	33.1	100.0	31.5	30.9	47.4	30.9	30.8	43.5
Gakenke	34.4	34.4	-	29.0	29.0	-	28.8	28.8	-
Musanze	32.4	32.4	-	28.3	28.3	-	28.4	28.4	-
Burera	39.5	39.5	-	36.7	36.7	-	36.4	36.4	-
Gicumbi	24.7	24.7	33.3	21.9	21.6	50.0	20.5	20.5	49.6
Rwamagana	54.5	53.2	77.4	49.9	50.1	49.2	49.4	48.6	83.4
Nyagatare	37.9	33.7	92.9	35.9	29.2	73.5	33.3	30.3	96.8
Gatsibo	38.8	36.7	95.7	34.5	31.0	76.2	37.0	34.3	98.6
Kayonza	43.1	40.2	89.3	41.9	39.5	51.5	44.2	42.2	90.5
Kirehe	45.7	45.0	90.0	42.1	40.5	91.7	43.5	41.9	81.7
Ngoma	40.5	39.6	72.2	34.6	32.9	52.9	33.6	33.0	63.6
Bugesera	45.2	43.5	73.0	44.0	40.4	61.9	42.1	40.3	90.3
National	33.1	32.0	81.7	30.9	29.2	60.3	31.5	30.0	87.3

Source: NISR, SAS 2022

Table 33: Season B 2022_Use of improved seeds by farmer categories per 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		
District	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	9.3	9.3	-	23.9	23.9	-	23.4	23.4	-
Gasabo	10.2	8.9	50.0	20.2	18.2	41.7	19.3	17.7	85.8
Kicukiro	7.9	7.0	66.7	22.3	21.7	42.9	25.5	24.0	93.1
Nyanza	8.9	8.2	57.1	19.0	18.3	53.9	20.2	19.2	70.9
Gisagara	7.5	5.4	68.8	11.6	9.9	68.8	16.8	10.2	76.4
Nyaruguru	4.4	3.5	75.0	11.0	8.7	81.8	9.4	8.9	98.3
Huye	8.1	5.3	73.7	13.4	11.1	55.2	13.5	11.1	79.5
Nyamagabe	3.0	2.7	100.0	5.4	5.2	33.3	5.1	5.1	48.2
Ruhango	6.3	4.2	92.3	9.6	7.2	89.5	9.1	6.6	99.9
Muhanga	4.1	3.2	80.0	8.1	7.4	66.7	7.5	7.0	91.2
Kamonyi	8.3	7.6	80.0	16.9	16.0	100.0	16.6	16.0	100.0
Karongi	6.0	5.8	100.0	9.3	8.9	100.0	8.5	8.4	100.0
Rutsiro	2.7	2.7	-	9.4	9.4	-	9.2	9.2	-
Rubavu	15.7	15.6	33.3	17.8	17.9	14.3	20.1	20.1	22.3
Nyabihu	16.3	16.3	-	22.4	22.4	-	23.7	23.7	-
Ngororero	9.4	9.4	-	14.7	14.7	-	13.7	13.7	-
Rusizi	3.6	2.8	40.0	9.0	8.5	30.8	12.2	8.1	84.9
Nyamasheke	4.2	2.9	75.0	8.2	6.9	77.8	7.6	6.8	67.8
Rulindo	5.4	5.0	40.0	12.0	11.1	46.2	10.8	10.7	41.5
Gakenke	2.8	2.8	-	8.5	8.5	-	8.4	8.4	-
Musanze	10.7	10.7	-	12.3	12.3	-	14.3	14.3	-
Burera	3.8	3.8	-	5.9	5.9	-	5.5	5.5	-
Gicumbi	5.9	5.7	50.0	10.5	10.3	50.0	10.3	10.3	14.6
Rwamagana	9.5	7.8	42.9	23.0	21.0	34.2	23.4	22.3	80.0
Nyagatare	25.8	22.5	75.0	37.7	30.7	80.4	35.2	33.2	94.6
Gatsibo	11.8	9.9	71.4	19.3	16.5	62.0	21.8	18.8	97.6
Kayonza	17.8	14.7	67.9	36.5	30.7	58.6	34.2	31.9	88.4
Kirehe	3.1	1.9	88.9	5.2	4.1	60.0	7.1	4.7	76.9
Ngoma	5.2	3.9	56.3	8.2	5.4	50.0	7.0	5.4	75.5
Bugesera	18.2	16.2	54.6	39.7	35.9	62.5	39.3	37.6	88.0
National	8.7	7.5	64.7	16.2	14.2	57.6	17.0	15.5	84.9

Source: NISR, SAS 2022

Table 34: Season C 2022_Use of improved seed types per 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		
District	Overall	SSF	SITE	Overall	SSF	SITE	Overall	SSF	SITE
Nyarugenge	29.5	9.1	37.5	12.5	4.4	59.9	10.9	6.2	53.8
Gasabo	56.6	55.6	56.8	32.1	28.7	51.5	42.1	38.6	54.2
Kicukiro	8.5	0.0	9.8	4.1	0.0	10.4	17.8	0.0	32.4
Nyanza	16.8	28.6	15.9	12.8	13.3	11.7	23.2	26.8	15.2
Gisagara	22.7	15.6	25.0	9.7	8.4	24.4	16.1	15.0	25.3
Nyaruguru	14.9	2.8	17.1	5.9	3.8	22.9	6.9	2.8	28.6
Huye	11.4	23.7	8.8	14.0	15.0	9.3	18.6	21.7	8.8
Nyamagabe	25.3	6.3	26.4	4.8	2.4	17.4	11.6	4.1	20.1
Ruhango	30.3	23.8	31.1	21.3	20.5	23.6	20.6	14.9	33.6
Muhanga	22.4	9.1	25.8	7.9	4.9	22.2	21.0	19.4	25.1
Kamonyi	40.9	33.3	43.0	15.7	11.7	48.0	23.0	12.3	49.3
Karongi	44.0	20.0	46.5	21.1	11.1	39.5	32.3	13.7	51.1
Rutsiro	8.6	0.0	9.6	1.8	0.0	8.0	12.9	0.0	18.5
Rubavu	35.4	25.5	90.0	17.2	17.0	94.9	20.7	20.3	96.2
Nyabihu	13.0	12.9	13.1	6.4	6.3	8.1	8.4	8.4	5.7
Ngororero	4.7	20.0	4.0	8.4	11.3	1.1	6.7	5.9	8.1
Rusizi	54.3	54.2	54.4	43.9	43.1	45.5	49.7	49.1	50.5
Nyamasheke	46.3	66.7	45.8	29.0	24.9	39.3	50.6	54.5	44.8
Rulindo	40.2	19.1	47.5	23.2	14.4	45.5	23.2	16.4	43.7
Gakenke	34.7	34.5	34.7	27.7	26.8	33.6	34.2	33.2	37.9
Musanze	13.4	16.7	12.2	7.6	7.5	10.4	26.3	27.1	13.8
Burera	3.2	5.6	2.2	6.7	7.0	1.7	5.9	6.1	2.1
Gicumbi	3.7	0.0	4.4	0.5	0.0	3.4	1.5	0.0	3.7
Rwamagana	36.4	18.2	39.5	29.6	26.9	37.2	24.6	19.0	42.1
Nyagatare	22.2	35.7	15.1	36.3	37.9	4.2	49.4	50.9	10.1
Gatsibo	49.0	33.3	51.8	4.5	1.4	52.1	11.0	5.1	66.5
Kayonza	52.1	45.5	53.0	43.2	42.4	44.3	58.7	62.9	48.5
Kirehe	24.6	12.5	25.8	22.6	26.2	19.6	25.2	21.9	29.6
Ngoma	46.2	58.3	44.9	32.6	52.0	20.9	36.2	50.9	27.6
Bugesera	41.2	16.1	47.0	26.7	24.6	31.5	12.8	10.1	16.8
National	**26.1**	**19.7**	**27.5**	**13.2**	**11.4**	**25.5**	**18.5**	**17.0**	**26.7**

Source: NISR, SAS 2022

Table 35: Seed use by crop type and season in 2022 (%)

	Traditional seeds			Improved seeds		
Crop	Season A	Season B	Season C	Season A	Season B	Season C
Maize	41.8	51.3		58.2	48.7	
Paddy rice	32.9	33.8		67.1	66.2	
Sorghum	100.0	100.0		-	-	
Wheat	90.4	86.2		9.6	13.8	
Other cereal	85.2	84.5		14.8	15.5	
Bush bean	99.4	99.5	99.5	0.6	0.6	0.5
Climbing bean	99.8	99.9	100.0	0.3	0.1	
Pea	100.0	99.7	99.5	-	0.3	0.5
Irish potato	97.0	97.7	88.3	3.0	2.4	11.7
Sweet potato	99.7	99.9	100.0	0.3	0.1	
Taro & Yams	99.9	99.9		0.1	0.1	
Soybean	96.6	97.3	97.0	3.5	2.7	3.0
Groundnut	100.0	100.0		-	-	
Cooking banana	99.9	99.8		0.1	0.2	
Dessert banana	98.9	99.4		1.1	0.6	
Banana for beer	99.3	99.7		0.7	0.4	
Cassava	99.7	99.7		0.3	0.3	
Vegetables	64.3	52.6	40.9	35.7	47.4	59.2
Fruits	53.7	72.8		46.3	27.2	100.0
Fodder	76.5	87.3		23.5	12.7	
Other crops	70.3	67.1	100.0	29.7	32.9	
National	86.8	92.3	77.1	13.2	7.7	23.0

Source: NISR, SAS 2022

Table 36: Source of improved seeds per district and season in 2022 (%)

	Government (MINAGRI/RAB/NAEB)			Recognized seed multipliers			Agro dealers			NGOs/Companies			Market			Agriculture cooperative			Other source		
District	SA	SB	SC	SA	SB	SC	SA	SB	SC	SA	SB	SC	SA	SB	SC	SA	SB	SC	SA	SB	SC
Nyarugenge	10.2	13.6	3.5	-	5.1	3.5	79.7	40.7	27.6	-	8.5	-	10.2	28.8	44.8	-	1.7	20.7	-	1.7	-
Gasabo	1.9	7.3	-	2.4	3.1	-	60.8	79.2	25.0	2.4	1.0	-	27.3	7.3	68.8	4.3	1.0	6.3	1.0	1.0	-
Kicukiro	1.5	1.9	16.7	4.6	-	-	80.2	83.0	50.0	8.4	-	-	3.8	11.3	33.3	0.8	3.8	-	0.8	-	-
Nyanza	5.8	6.8	-	18.2	15.3	-	19.8	18.6	46.4	44.2	52.5	3.6	8.1	3.4	44.6	2.3	3.4	3.6	1.6	-	1.8
Gisagara	1.8	8.1	2.8	4.0	12.2	-	26.6	35.1	55.6	52.2	32.4	2.8	4.9	-	30.6	9.7	12.2	8.3	0.9	-	-
Nyaruguru	2.8	26.5	4.8	0.7	20.6	26.2	12.7	8.8	23.8	78.2	8.8	4.8	2.8	14.7	19.1	2.8	17.7	21.4	-	2.9	-
Huye	4.6	13.3	-	8.6	16.0	19.2	24.2	24.0	38.5	55.1	18.7	11.5	7.1	14.7	19.2	0.5	12.0	7.7	-	1.3	3.9
Nyamagabe	2.4	16.0	5.0	4.7	-	68.8	24.7	24.0	22.5	65.9	48.0	-	2.4	-	2.5	-	12.0	-	-	-	1.3
Ruhango	2.1	4.9	-	3.5	13.1	2.9	31.7	21.3	67.1	35.2	13.1	1.4	17.2	24.6	27.1	6.2	23.0	-	4.1	-	1.4
Muhanga	14.1	13.2	-	2.2	5.3	16.2	21.7	7.9	-	42.4	36.8	10.8	3.3	10.5	35.1	13.0	26.3	37.8	3.3	-	-
Kamonyi	2.1	15.7	-	2.7	3.3	3.9	51.3	39.7	68.8	36.0	18.2	-	4.2	14.9	16.9	2.7	5.8	10.4	1.1	2.5	-
Karongi	8.6	32.5	11.4	1.3	-	20.5	38.2	32.5	39.8	44.1	32.5	2.3	1.3	2.5	15.9	4.6	-	9.1	2.0	-	1.1
Rutsiro	9.7	36.0	12.5	2.2	8.0	50.0	45.2	36.0	37.5	39.8	12.0	-	-	4.0	-	3.2	4.0	-	-	-	-
Rubavu	2.6	3.5	4.0	5.3	7.0	4.0	69.7	79.1	56.0	13.2	5.8	-	2.6	4.7	32.0	4.0	-	4.0	2.6	-	-
Nyabihu	10.4	6.2	3.5	4.7	8.9	13.8	45.3	51.3	41.4	30.2	24.8	6.9	7.6	7.1	34.5	1.9	1.8	-	-	-	-
Ngororero	4.6	3.9	-	11.4	3.9	42.9	28.4	62.8	42.9	53.4	29.5	-	-	-	-	2.3	-	14.3	-	-	-
Rusizi	2.9	44.7	-	2.9	5.3	1.2	12.0	2.6	32.1	78.5	21.1	1.2	2.4	18.4	65.5	0.5	7.9	-	1.0	-	-
Nyamasheke	7.0	25.0	2.5	2.6	10.7	-	14.9	17.9	70.4	66.7	32.1	7.4	-	-	13.6	0.9	14.3	2.5	7.9	-	3.7
Rulindo	2.6	8.1	-	3.7	1.6	54.1	70.7	54.8	18.9	12.0	12.9	-	6.8	21.0	16.2	3.1	1.6	10.8	1.1	-	-
Gakenke	1.7	8.6	-	0.4	-	13.5	46.7	55.2	5.4	31.7	27.6	6.8	11.3	6.9	13.5	7.9	1.7	58.1	0.4	-	2.7
Musanze	2.2	-	18.0	2.2	2.7	20.5	47.0	37.8	20.5	34.6	13.5	5.1	13.5	24.3	35.9	-	14.9	-	0.5	6.8	-
Burera	0.9	5.3	25.0	-	-	-	53.6	55.3	75.0	43.6	26.3	-	0.9	7.9	-	0.9	2.6	-	-	2.6	-
Gicumbi	3.0	1.4	-	5.4	9.7	-	59.6	54.2	50.0	27.1	20.8	16.7	3.6	9.7	33.3	0.6	4.2	-	0.6	-	-
Rwamagana	4.3	14.8	1.6	7.4	6.6	-	45.5	50.8	72.1	30.5	10.9	13.1	9.7	12.6	4.9	0.9	3.8	8.2	1.7	0.6	-
Nyagatare	7.7	8.7	-	11.3	17.5	-	49.7	48.0	80.0	23.6	18.4	10.0	1.6	2.2	10.0	6.1	4.4	-	-	0.9	-
Gatsibo	7.4	6.5	1.8	6.2	8.9	1.8	22.2	21.3	47.4	52.8	53.3	5.3	8.0	8.3	43.9	2.5	1.8	-	0.9	-	-
Kayonza	10.4	5.0	1.8	5.7	12.2	3.6	22.4	40.5	87.5	45.4	32.1	1.8	9.5	5.0	3.6	4.7	2.7	1.8	1.9	2.7	-
Kirehe	8.0	19.5	2.2	5.2	4.9	4.4	4.0	14.6	73.3	67.1	29.3	4.4	1.4	-	13.3	11.5	31.7	-	2.9	-	2.2
Ngoma	4.0	11.9	1.4	0.9	9.0	2.9	19.8	19.4	31.4	59.9	14.9	1.4	9.7	19.4	58.6	5.2	25.4	1.4	0.6	-	2.9
Bugesera	2.8	7.6	-	10.6	2.4	1.3	43.2	50.3	67.1	30.2	27.1	-	8.8	4.9	25.3	4.5	7.0	2.5	-	0.6	3.8
National	4.8	9.6	2.7	5.3	8.2	11.5	36.6	42.8	45.4	41.2	23.9	3.5	7.0	8.4	27.5	3.9	6.2	8.3	1.2	0.9	1.2

Source: NISR, SAS 2022

Table 37: Source of improved seeds by season per crop type in 2022 (%)

District	Government (MINAGRI/RAB/NAEB)			Recognized seed multipliers			**Agro dealers**			NGOs/Companies			Market			Agriculture cooperative			Other source		
	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C
Maize	2.9	2.9		1.8	2.2		38.8	53.5		48.1	32.9		4.8	6.4		2.9	1.8		0.6	0.4	
Paddy rice	6.8	3.5		50.5	34.5		-	1.7		-	-		1.0	-		41.8	60.3		-	-	
Wheat	33.3	24.0		-	4.0		66.7	40.0		-	20.0		-	-		-	12.0		-	-	
Other cereals	1.92	4.6		-	18.2		9.6	7.6		34.6	13.6		13.5	7.6		25.0	45.5		15.4	3.0	
Irish potato	18.6	14.0	8.2	47.1	56.0	53.5	10.0	4.0	2.3	1.4	4.0	3.1	15.7	-		5.7	16.0		1.4	6.0	
Sweet potato	50.0	25.0	-	33.3	75.0	-	-	-	-	-	-	-	-	-		-	-		16.7	-	
Taro & Yams	-			-			50.0			-			-			-			50.0		
Bush bean	21.6	33.3	-	21.6	26.7	-	27.5	6.7	33.3	25.5	30.0	33.3	2.0	3.3	-	-	-	33.3	2.0	-	-
Climbing bean	55.6	66.7		-	-		22.2	-		22.2	33.3		-	-		-	-		-	-	
Pea	66.7	-	-	-	-	50.0	-	-	50.0	-	-	-	-	100.0	-	33.3	-	-	-	-	-
Soybean	18.0	47.9	-	38.5	25.0	9.1	20.5	14.6	36.4	12.8	8.3	45.5	2.6	2.1	-	7.7	2.1	9.1	-	-	-
Cooking banana	-	-		60.0	66.7		20.0	-		-	-		-	-		-	33.3		20.0	-	
Dessert banana	10.9	26.3		65.2	63.2		4.4	-		2.2	-		6.5	-		-	10.5		10.9	-	
Banana for beer	-	5.6		81.1	83.3		5.4	-		-	-		2.7	5.6		-	5.6		10.8	-	
Cassava	27.8	33.3		27.8	44.4		11.1	-		27.8	11.1		-	-		-	-		5.6	11.1	
Fruits	29.1	22.0	-	24.8	31.7	-	5.1	31.7	28.6	23.1	7.3	14.3	12.0	7.3	57.1	4.3	-	-	1.7	-	-
Vegetables	1.5	1.5	1.5	2.0	4.0	1.9	51.4	55.5	55.5	6.3	3.3	3.0	34.4	31.6	32.6	2.8	1.5	4.1	1.5	2.6	1.3
Fodder crops	37.7	39.3		-	17.9		39.3	25.0		4.9	3.6		13.1	14.3		3.3	-		1.6	-	
Other crops	33.3	62.0		25.8	12.7		3.0	-		7.6	4.4		4.6	7.3		16.7	11.2		9.1	2.4	

Source: NISR, SAS 2022

Table 38: Season A 2022_Use of organic fertilizer by farmer categories per 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		
District	**Overall**	**SSF**	**LSF**	**Overall**	**SSF**	**LSF**	**Overall**	**SSF**	**LSF**
Nyarugenge	56.3	56.3	0.0	54.4	54.4	0.0	56.9	56.9	0.0
Gasabo	69.1	69.1	81.8	66.0	66.0	89.5	67.8	67.2	93.2
Kicukiro	40.6	40.6	100.0	40.1	40.1	45.5	57.0	56.8	63.6
Nyanza	65.3	65.3	88.9	65.0	65.0	83.3	62.5	62.1	81.3
Gisagara	61.0	61.0	66.7	58.7	58.7	59.3	61.7	63.1	50.0
Nyaruguru	90.4	90.4	100.0	88.8	88.8	84.6	88.0	87.8	99.6
Huye	68.8	68.8	80.0	67.6	67.6	79.5	68.6	68.2	77.3
Nyamagabe	72.0	72.0	100.0	69.8	69.8	100.0	70.8	70.7	100.0
Ruhango	65.5	65.5	28.6	62.8	62.8	16.7	60.7	60.8	55.7
Muhanga	78.2	78.2	100.0	73.1	73.1	100.0	72.4	71.9	100.0
Kamonyi	73.7	73.7	100.0	68.1	68.1	93.3	64.7	63.9	99.8
Karongi	72.1	72.1	100.0	69.0	69.0	100.0	69.7	69.7	100.0
Rutsiro	71.5	71.5	0.0	69.0	69.0	0.0	75.4	75.4	0.0
Rubavu	34.1	34.1	75.0	32.8	32.8	55.6	35.4	35.3	75.0
Nyabihu	63.8	63.8	0.0	63.5	63.5	0.0	66.6	66.6	0.0
Ngororero	73.7	73.7	0.0	70.4	70.4	0.0	77.4	77.4	0.0
Rusizi	77.0	77.0	70.0	75.7	75.7	46.7	68.2	68.2	67.0
Nyamasheke	84.4	84.4	57.1	80.2	80.2	50.0	81.4	81.9	45.0
Rulindo	85.0	85.0	80.0	83.7	83.7	47.4	87.1	87.2	50.2
Gakenke	81.9	81.9	0.0	79.6	79.6	0.0	83.5	83.5	0.0
Musanze	64.6	64.6	0.0	63.8	63.8	0.0	64.8	64.8	0.0
Burera	74.4	74.4	0.0	74.9	74.9	0.0	77.0	77.0	0.0
Gicumbi	84.9	84.9	66.7	83.6	83.6	87.5	84.0	84.0	78.2
Rwamagana	68.4	68.4	74.2	64.6	64.6	64.1	69.7	70.3	43.4
Nyagatare	33.8	33.8	50.0	32.2	32.2	43.4	38.9	40.2	11.6
Gatsibo	68.6	68.6	87.0	65.7	65.7	66.7	69.7	70.1	61.3
Kayonza	50.6	50.6	78.6	48.5	48.5	58.0	50.4	49.7	66.3
Kirehe	60.5	60.5	90.0	57.7	57.7	87.5	61.5	60.0	96.4
Ngoma	58.6	58.6	83.3	53.9	53.9	54.4	58.9	58.5	74.0
Bugesera	51.8	51.8	59.5	48.9	48.9	57.5	48.8	47.6	78.9
National	69.7	69.7	73.8	67.4	67.4	62.3	65.4	65.5	62.5

Source: NISR, SAS 2022

Table 39: Season B 2022_Use of organic fertilizer by farmer categories per 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		
District	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	58.3	58.3		52.2	52.2		47.8	47.8	
Gasabo	60.9	60.9	60.0	59.7	59.7	50.0	60.0	59.5	82.8
Kicukiro	47.6	47.6	66.7	45.9	45.9	71.4	45.9	46.7	10.8
Nyanza	59.9	59.9	57.1	56.1	56.1	69.2	53.0	53.0	52.9
Gisagara	45.3	45.3	62.5	42.6	42.6	62.5	45.7	44.2	59.1
Nyaruguru	81.5	81.5	100.0	77.9	77.9	81.8	76.3	76.2	98.3
Huye	58.0	58.0	79.0	56.8	56.8	69.0	55.4	54.9	70.6
Nyamagabe	63.9	63.9	100.0	61.4	61.4	100.0	63.6	63.6	100.0
Ruhango	54.1	54.1	38.5	49.8	49.8	31.6	48.7	48.4	58.3
Muhanga	66.1	66.1	100.0	61.7	61.7	100.0	60.8	60.6	100.0
Kamonyi	53.5	53.5	80.0	48.9	48.9	57.1	52.1	51.8	94.0
Karongi	60.5	60.5	100.0	59.0	59.0	100.0	63.8	63.7	100.0
Rutsiro	58.4	58.4		54.9	54.9		65.0	65.0	
Rubavu	25.3	25.3	66.7	24.5	24.5	42.9	28.2	28.1	64.3
Nyabihu	54.9	54.9		53.6	53.6		60.5	60.5	
Ngororero	73.9	73.9		71.3	71.3		77.9	77.9	
Rusizi	50.9	50.9	30.0	48.4	48.4	23.1	45.0	46.3	22.7
Nyamasheke	70.6	70.6	87.5	68.6	68.6	77.8	70.1	69.8	91.8
Rulindo	82.8	82.8	80.0	78.1	78.1	61.5	83.4	83.5	65.2
Gakenke	70.6	70.6		70.5	70.5		75.0	75.0	
Musanze	61.8	61.8		59.8	59.8		61.3	61.3	
Burera	67.5	67.5		66.5	66.5		66.5	66.5	
Gicumbi	74.8	74.8	100.0	71.9	71.9	50.0	71.5	71.5	13.9
Rwamagana	38.2	38.2	50.0	36.5	36.5	26.8	42.5	43.0	15.0
Nyagatare	33.0	33.0	27.8	30.9	30.9	35.3	31.6	32.4	5.6
Gatsibo	63.4	63.4	66.7	59.0	59.0	62.0	58.7	58.4	64.8
Kayonza	40.5	40.5	64.3	37.7	37.7	31.0	36.1	37.1	10.4
Kirehe	33.3	33.3	100.0	30.8	30.8	66.7	32.0	30.4	77.9
Ngoma	23.0	23.0	75.0	21.5	21.5	52.1	27.7	26.6	73.2
Bugesera	37.9	37.9	42.4	35.7	35.7	42.5	33.8	33.0	57.3
National	57.9	57.9	58.7	55.2	55.2	43.4	52.1	52.1	48.9

Source: NISR, SAS 2022

Table 40: Season C 2022_Use of organic fertilizer per 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		
District	Overall	SSF	SITE	Overall	SSF	SITE	Overall	SSF	SITE
Nyarugenge	56.4	27.3	67.9	89.1	88.9	95.5	87.7	87.5	94.3
Gasabo	92.5	88.9	93.2	100.0	100.0	97.7	99.9	100.0	96.3
Kicukiro	42.6	66.7	39.0	59.3	58.5	100.0	83.7	81.5	100.0
Nyanza	57.6	95.2	54.7	86.1	85.9	98.1	97.5	97.5	99.5
Gisagara	62.9	34.4	72.0	98.3	98.5	85.4	92.8	92.9	84.4
Nyaruguru	99.2	100.0	99.0	87.3	87.3	97.6	83.1	82.9	98.7
Huye	90.9	84.2	92.3	89.8	89.7	96.5	91.8	91.7	97.3
Nyamagabe	99.7	100.0	99.6	78.7	78.3	99.3	83.5	81.2	99.8
Ruhango	93.8	85.7	94.7	87.3	87.2	91.0	86.5	86.4	88.3
Muhanga	91.3	75.8	95.3	56.9	56.6	91.9	88.5	88.4	91.2
Kamonyi	92.8	87.2	94.4	84.0	83.9	97.8	80.4	80.0	98.3
Karongi	91.2	93.3	91.0	63.8	62.8	91.3	62.6	57.4	97.3
Rutsiro	81.5	87.5	80.8	94.9	94.9	93.3	91.4	87.0	96.5
Rubavu	50.8	41.8	100.0	69.1	69.0	100.0	78.0	77.7	100.0
Nyabihu	91.8	91.9	91.7	85.1	85.1	85.2	79.2	79.2	87.7
Ngororero	66.7	100.0	65.3	99.8	100.0	91.5	99.8	100.0	98.6
Rusizi	85.0	100.0	81.6	98.5	98.6	95.6	97.1	97.1	96.9
Nyamasheke	91.8	66.7	92.4	99.5	100.0	95.7	99.7	100.0	97.3
Rulindo	98.8	95.2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gakenke	90.5	86.2	91.2	67.8	67.5	94.9	81.9	81.6	97.0
Musanze	91.1	86.1	92.9	68.1	68.0	92.1	82.4	82.2	97.8
Burera	98.8	98.6	98.9	92.4	92.3	98.9	90.6	90.5	99.6
Gicumbi	100.0	100.0	100.0	100.0	100.0	97.9	99.9	100.0	99.5
Rwamagana	52.3	27.3	56.6	98.8	100.0	73.0	98.8	100.0	76.3
Nyagatare	45.7	67.9	34.0	95.2	95.2	77.8	93.8	93.8	76.3
Gatsibo	85.0	73.3	87.1	52.2	51.2	84.6	40.3	38.1	74.3
Kayonza	77.9	91.7	75.9	96.1	96.4	86.6	98.1	98.2	94.2
Kirehe	75.5	87.5	74.2	94.5	94.7	91.4	97.4	97.5	95.8
Ngoma	63.0	83.3	60.8	81.9	81.4	91.8	88.4	87.4	96.6
Bugesera	42.4	25.8	46.3	95.9	96.2	90.5	96.7	96.8	95.4
National	82.3	79.2	83.0	83.0	82.9	93.9	85.6	85.4	96.0

Source: NISR, SAS 2022

Table 41: Season A 2022_Use of inorganic fertilizer by farmer categories per 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		
District	**Overall**	**SSF**	**LSF**	**Overall**	**SSF**	**LSF**	**Overall**	**SSF**	**LSF**
Nyarugenge	14.4	14.4	0.0	12.0	12.0	0.0	13.8	13.8	0.0
Gasabo	27.3	26.1	63.6	23.0	23.0	26.3	24.6	23.3	78.0
Kicukiro	40.2	39.2	80.0	26.0	26.0	33.3	40.4	38.9	90.0
Nyanza	19.1	17.9	88.9	13.7	13.7	50.0	19.3	17.3	97.7
Gisagara	32.9	29.8	100.0	26.8	26.8	92.6	36.4	28.8	98.9
Nyaruguru	60.6	59.5	100.0	53.7	53.7	92.3	58.7	58.2	99.8
Huye	29.1	25.1	100.0	21.8	21.8	68.3	25.7	22.3	98.8
Nyamagabe	38.3	38.1	100.0	27.4	27.4	100.0	33.6	33.6	100.0
Ruhango	14.3	13.3	85.7	9.1	9.1	46.2	14.2	12.2	90.7
Muhanga	24.4	23.0	100.0	16.8	16.8	100.0	22.0	20.7	100.0
Kamonyi	18.1	16.5	91.7	15.9	15.9	73.3	16.7	15.2	95.4
Karongi	32.8	32.6	100.0	27.2	27.2	33.3	29.7	29.7	35.8
Rutsiro	41.3	41.3	0.0	34.8	34.8	0.0	38.8	38.8	0.0
Rubavu	48.2	48.1	50.0	34.1	34.1	33.3	47.0	47.0	38.5
Nyabihu	60.7	60.7	0.0	46.7	46.7	0.0	59.4	59.4	0.0
Ngororero	33.0	33.0	0.0	25.6	25.6	0.0	32.2	32.2	0.0
Rusizi	58.7	58.2	80.0	51.1	51.1	53.3	58.1	56.4	87.5
Nyamasheke	62.1	61.7	85.7	59.2	59.2	75.0	60.0	59.5	97.2
Rulindo	40.0	39.3	100.0	29.2	29.2	84.2	37.5	37.3	95.8
Gakenke	57.3	57.3	0.0	50.7	50.7	0.0	53.2	53.2	0.0
Musanze	46.6	46.6	0.0	36.7	36.7	0.0	45.8	45.8	0.0
Burera	43.5	43.5	0.0	36.8	36.8	0.0	42.2	42.2	0.0
Gicumbi	33.2	33.0	66.7	26.4	26.4	37.5	29.6	29.6	53.2
Rwamagana	45.2	44.1	64.5	33.2	33.2	25.4	41.7	41.0	71.0
Nyagatare	41.9	37.9	95.2	26.9	26.9	52.2	37.4	34.6	94.6
Gatsibo	35.7	33.7	91.3	24.5	24.5	53.1	34.5	31.9	94.5
Kayonza	35.1	32.4	78.6	24.7	24.7	34.1	32.3	29.9	86.6
Kirehe	43.9	43.3	80.0	35.3	35.3	87.5	43.8	41.7	96.7
Ngoma	35.4	34.0	83.3	24.0	24.0	29.6	32.5	31.3	88.8
Bugesera	38.1	36.6	62.2	30.0	30.0	43.3	34.3	32.4	83.7
National	38.6	37.6	83.5	30.3	30.3	44.6	36.6	35.2	92.2

Source: NISR, SAS 2022

Table 42: Season B 2022_Use of inorganic fertilizer by farmer categories per 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		
District	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	11.5	11.5		5.9	5.9		8.3	8.3	
Gasabo	17.5	16.5	50.0	13.8	13.8	19.4	16.4	15.0	79.5
Kicukiro	31.7	31.7	33.3	23.9	23.9	28.6	33.4	32.1	89.2
Nyanza	11.5	10.6	85.7	7.6	7.6	46.2	11.2	9.5	96.9
Gisagara	21.3	18.9	87.5	16.3	16.3	87.5	24.0	15.7	98.1
Nyaruguru	47.3	46.9	75.0	44.7	44.7	63.6	46.8	46.5	92.8
Huye	19.8	16.7	94.7	15.6	15.6	62.1	18.5	15.7	94.8
Nyamagabe	30.5	30.3	100.0	24.6	24.6	100.0	26.3	26.2	100.0
Ruhango	11.0	8.9	100.0	6.4	6.4	73.7	8.9	6.5	99.2
Muhanga	16.1	15.1	100.0	10.0	10.0	100.0	12.6	12.1	100.0
Kamonyi	9.7	9.1	80.0	7.1	7.1	57.1	8.1	7.5	94.0
Karongi	23.3	23.3	-	15.9	15.9	-	21.0	21.0	-
Rutsiro	37.2	37.2		26.9	26.9		35.6	35.6	
Rubavu	42.3	42.1	66.7	32.3	32.3	28.6	44.3	44.3	24.3
Nyabihu	56.2	56.2		42.6	42.6		53.8	53.8	
Ngororero	35.2	35.2		33.2	33.2		34.5	34.5	
Rusizi	33.8	33.0	70.0	32.0	32.0	53.9	34.4	31.5	86.8
Nyamasheke	46.7	45.7	100.0	43.2	43.2	88.9	45.2	44.5	99.8
Rulindo	35.6	35.1	80.0	28.2	28.2	76.9	33.1	32.9	88.8
Gakenke	39.5	39.5		34.0	34.0		37.5	37.5	
Musanze	42.6	42.6		37.7	37.7		43.3	43.3	
Burera	34.1	34.1		27.3	27.3		31.3	31.3	
Gicumbi	24.2	24.0	100.0	22.8	22.8	75.0	21.9	21.9	89.9
Rwamagana	22.9	21.7	46.4	16.1	16.1	12.2	20.8	19.8	71.6
Nyagatare	35.6	32.8	77.8	20.5	20.5	56.9	31.3	29.3	92.5
Gatsibo	24.2	23.0	61.9	15.5	15.5	38.0	22.9	20.5	81.4
Kayonza	29.6	26.5	78.6	18.5	18.5	31.7	26.8	24.1	88.7
Kirehe	23.1	22.3	77.8	15.6	15.6	73.3	22.8	20.2	96.3
Ngoma	9.2	7.3	81.3	4.1	4.1	37.5	8.5	6.6	91.6
Bugesera	25.6	24.4	48.5	18.3	18.3	24.2	25.0	23.1	81.8
National	27.5	26.6	72.4	21.9	21.9	38.5	26.0	24.6	90.4

Source: NISR, SAS 2022

Table 43: Season C 2022_Use of inorganic fertilizer per 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		
District	Overall	SSF	SITE	Overall	SSF	SITE	Overall	SSF	SITE
Nyarugenge	64.1	45.5	71.4	25.3	24.8	66.7	43.6	43.3	71.2
Gasabo	84.0	77.8	85.2	48.3	48.0	78.3	66.9	66.7	77.4
Kicukiro	48.9	-	56.1	1.5	-	58.1	7.8	-	87.9
Nyanza	47.1	42.9	47.5	20.0	19.1	45.6	35.3	34.7	48.0
Gisagara	47.0	37.5	50.0	26.7	26.7	43.6	32.2	32.2	43.9
Nyaruguru	80.1	63.9	82.9	24.0	23.6	81.3	30.9	29.9	88.7
Huye	68.6	63.2	69.8	42.2	42.0	63.4	42.0	41.7	63.7
Nyamagabe	92.7	50.0	95.2	8.9	7.2	93.3	23.9	13.6	97.9
Ruhango	56.9	42.9	58.4	20.5	20.1	46.5	24.9	23.9	62.6
Muhanga	46.6	9.1	56.3	4.0	3.7	50.8	19.8	19.4	52.1
Kamonyi	77.3	51.3	84.5	23.2	22.8	84.9	26.2	24.9	92.1
Karongi	62.3	33.3	65.3	12.7	11.1	58.9	22.9	14.5	85.7
Rutsiro	80.2	37.5	84.9	18.5	15.8	84.0	60.5	21.7	97.0
Rubavu	90.8	89.1	100.0	77.4	77.4	100.0	80.4	80.4	100.0
Nyabihu	91.3	88.7	95.2	65.7	65.6	93.3	81.7	81.6	96.9
Ngororero	27.9	40.0	27.4	4.8	4.0	25.6	54.7	49.8	81.5
Rusizi	81.9	95.8	78.6	83.3	83.4	76.4	93.9	94.3	88.1
Nyamasheke	72.1	66.7	72.2	26.3	24.9	64.0	55.4	54.5	68.1
Rulindo	93.9	85.7	96.7	80.2	80.1	96.9	78.9	78.7	97.9
Gakenke	81.4	72.4	82.9	52.8	52.6	77.5	66.6	66.3	80.1
Musanze	82.9	59.7	91.4	45.0	44.9	89.2	62.2	61.7	97.5
Burera	86.7	83.6	87.9	66.9	66.8	87.0	78.9	78.8	94.8
Gicumbi	84.8	63.0	89.1	61.7	61.4	85.2	61.6	57.1	94.0
Rwamagana	83.4	68.2	86.0	74.9	74.8	77.6	74.0	73.5	85.4
Nyagatare	48.1	75.0	34.0	60.9	61.0	31.5	72.4	72.6	49.2
Gatsibo	64.0	46.7	67.1	7.7	7.4	61.1	19.2	17.1	76.8
Kayonza	76.8	66.7	78.3	75.5	75.8	67.1	42.4	40.8	90.0
Kirehe	59.9	75.0	58.3	77.5	79.4	51.3	85.3	85.5	84.0
Ngoma	64.7	66.7	64.5	57.8	57.9	56.5	66.6	67.2	63.4
Bugesera	64.2	29.0	72.4	39.9	39.0	71.3	17.7	15.7	59.0
National	71.5	64.8	73.0	42.6	42.3	68.7	61.4	60.9	84.5

Source: NISR, SAS 2022

Table 44: Percentage of farmers by source of inorganic fertilizers per district in Season A 2022

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

Source: NISR, SAS 2022

Table 45: Percentage of farmers by source of inorganic fertilizers per district in Season B 2022

District	Government (MINAGRI/RAB/NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	-	52.4	4.8	42.9	-	-	100.0
Gasabo	1.8	91.2	-	3.5	-	3.5	100.0
Kicukiro	-	87.5	3.1	9.4	-	-	100.0
Nyanza	6.7	28.3	56.7	1.7	6.7	-	100.0
Gisagara	1.0	34.3	42.4	5.1	17.2	-	100.0
Nyaruguru	4.2	26.8	64.8	2.8	1.4	-	100.0
Huye	3.2	49.5	31.2	10.8	5.4	-	100.0
Nyamagabe	2.4	50.8	38.7	2.4	5.7	-	100.0
Ruhango	-	31.2	37.7	19.7	11.5	-	100.0
Muhanga	1.5	17.7	55.9	1.5	20.6	2.9	100.0
Kamonyi	-	42.6	40.7	9.3	5.6	1.9	100.0
Karongi	11.2	26.5	61.2	-	1.0	-	100.0
Rutsiro	1.5	70.1	26.3	2.2	-	-	100.0
Rubavu	-	77.8	7.2	15.0	-	-	100.0
Nyabihu	-	87.6	11.1	1.4	-	-	100.0
Ngororero	2.6	56.7	39.5	1.3	-	-	100.0
Rusizi	3.7	9.9	72.2	11.7	1.2	1.2	100.0
Nyamasheke	3.0	19.8	71.8	3.5	1.0	1.0	100.0
Rulindo	2.7	68.9	18.5	8.6	0.7	0.7	100.0
Gakenke	2.5	44.6	39.3	12.8	0.8	-	100.0
Musanze	-	77.0	13.0	10.0	-	-	100.0
Burera	-	53.3	18.8	26.1	1.8	-	100.0
Gicumbi	2.1	66.9	26.9	2.1	1.4	0.7	100.0
Rwamagana	1.5	57.0	24.4	13.3	3.0	0.7	100.0
Nyagatare	-	83.5	14.6	-	1.9	-	100.0
Gatsibo	5.5	38.2	44.9	7.3	4.2	-	100.0
Kayonza	2.1	51.0	38.6	6.2	1.4	0.7	100.0
Kirehe	7.6	31.0	50.6	3.2	5.1	2.5	100.0
Ngoma	5.1	61.0	22.0	6.8	3.4	1.7	100.0
Bugesera	3.7	55.2	27.0	6.1	5.5	2.5	100.0
National	2.5	52.9	34.1	7.3	2.8	0.6	100.0

Source: NISR, SAS 2022

Table 46: Percentage of farmers by source of inorganic fertilizers per district in Season C 2022

District	Government (MINAGRI/RAB/NAEB)	Agro dealers	NGOs /Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	2.0	56.9	9.8	19.6	11.8	-	100
Gasabo	-	86.5	1.1	5.6	6.7	-	100
Kicukiro	8.7	65.2	-	26.1	-	-	100
Nyanza	-	28.4	44.0	8.5	14.2	5.0	100
Gisagara	-	55.6	23.8	4.8	15.9	-	100
Nyaruguru	0.5	38.7	34.0	15.5	11.3	-	100
Huye	0.7	51.7	33.8	6.6	7.3	-	100
Nyamagabe	0.4	69.9	28.3	0.7	0.7	-	100
Ruhango	-	53.3	16.7	17.5	12.5	-	100
Muhanga	-	20.0	22.7	32.0	25.3	-	100
Kamonyi	-	64.8	15.5	9.2	10.6	-	100
Karongi	-	61.6	30.3	4.0	4.0	-	100
Rutsiro	-	90.8	4.6	3.1	-	1.5	100
Rubavu	-	86.4	3.4	8.5	1.7	-	100
Nyabihu	-	92.1	7.4	0.5	-	-	100
Ngororero	8.3	91.7	-	-	-	-	100
Rusizi	-	39.1	20.0	41.0	-	-	100
Nyamasheke	-	37.7	59.4	0.9	-	1.9	100
Rulindo	-	73.1	9.0	2.6	15.4	-	100
Gakenke	-	46.9	9.3	16.1	27.8	-	100
Musanze	-	92.8	0.5	6.3	0.5	-	100
Burera	0.5	73.3	6.8	3.6	15.4	0.5	100
Gicumbi	0.7	49.6	23.0	20.9	5.8	-	100
Rwamagana	0.8	64.3	25.4	9.5	-	-	100
Nyagatare	-	79.5	-	12.8	7.7	-	100
Gatsibo	-	65.6	10.9	20.3	3.1	-	100
Kayonza	-	84.9	12.3	2.7	-	-	100
Kirehe	1.0	58.4	22.8	9.9	5.0	3.0	100
Ngoma	1.3	50.0	21.8	14.1	9.0	3.9	100
Bugesera	0.9	75.5	8.5	13.2	1.9	-	100
National	0.4	63.0	18.7	10.0	7.4	0.5	100

Source: NISR, SAS 2022

Table 47: Source of inorganic fertilizer by type of fertilizer in Season A 2022 (%)

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

Source: NISR, SAS 2022

Table 48: Source of inorganic fertilizer by type of fertilizer in Season B 2022

Fertilizer name	Government (MINAGRI/ RAB/ NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
NPK 17-17-17	1.4	66.8	19.4	7.9	4.1	0.3	100.0
NPK 20-10-10	59.6	17.0	8.5	-	10.6	4.3	100.0
NPK 25-5-5	30.8	30.8	-	15.4	15.4	7.7	100.0
NPK 22-6-12	55.0	22.5	7.5	-	15.0	-	100.0
Other NPK	2.9	92.8	-	2.9	1.5	-	100.0
Urea	1.1	53.6	34.4	7.3	3.0	0.6	100.0
liquid urea (Mbonea M)	-	83.3	8.3	8.3	-	-	100.0
DAP	1.1	47.9	43.2	5.9	1.8	0.2	100.0
TSP	-	100.0	-	-	-	-	100.0
KCL/MOP	33.3	50.0	16.7	-	-	-	100.0
Omax	-	71.4	10.7	17.9	-	-	100.0
Winner	-	100.0	-	-	-	-	100.0
Yara Viva	-	62.5	-	12.5	-	25.0	100.0
Amidas	-	39.4	21.2	3.0	30.3	6.1	100.0
Cereal	-	50.0	14.0	2.0	30.0	4.0	100.0
Boaster	-	-	-	-	100.0	-	100.0
DI Grow	-	77.3	-	9.1	13.6	-	100.0
Other type of fertilizer	3.6	69.6	21.4	1.8	1.8	1.8	100.0
Total	2.1	54.2	33.4	6.6	3.2	0.5	100.0

Source: NISR, SAS 2022

Table 49: Source of inorganic fertilizer by type of fertilizer in Season C 2022 (%)

Fertilizer name	Government (MINAGRI/RAB/ NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
NPK 17-17-17	0.5	66.0	16.5	8.2	8.6	0.3	100.0
NPK 20-10-10	-	100.0	-	-	-	-	100.0
NPK 25-5-5	-	100.0	-	-	-	-	100.0
NPK 22-6-12	-	100.0	-	-	-	-	100.0
Other NPK	-	86.8	5.3	5.3	2.6	-	100.0
Urea	0.4	61.1	22.1	10.7	5.3	0.5	100.0
liquid urea (Mbonea Majimaji)	-	75.8	16.9	4.0	3.2	-	100.0
DAP	0.4	60.2	22.1	12.3	4.3	0.8	100.0
TSP	-	50.0	-	-	50.0	-	100.0
KCL/MOP	-	100.0	-	-	-	-	100.0
Omax	-	75.7	5.4	8.1	10.8	-	100.0
Winner	-	91.7	-	-	8.3	-	100.0
Yara Viva	-	81.0	9.5	4.8	4.8	-	100.0
Amidas	-	100.0	-	-	-	-	100.0
Cereal	-	42.9	-	-	57.1	-	100.0
Boaster	-	50.0	-	50.0	-	-	100.0
DI Grow	-	74.1	7.4	7.4	7.4	3.7	100.0
Other type of fertilizer	0.8	67.5	15.0	8.3	7.5	0.8	100.0
National	0.4	64.0	18.9	9.6	6.6	0.5	100.0

Source: NISR, SAS 2022

Table 50: Type of inorganic fertilizer, per Season and district (%)

	Season A					Season B								
District	NPK	Urea	DAP	KCL/MOP	Others	NPK	Urea	DAP	KCL/MOP	Others	NPK	Urea	DAP	Others
Nyarugenge	8.7	54.9	26.8	-	9.7	14.3	51.4	28.6	-	5.7	23.1	56.4	19.2	1.3
Gasabo	9.7	50.8	39.5	-	-	19.6	44.1	35.3	-	1.0	25.2	41.0	29.5	4.3
Kicukiro	8.4	41.6	50.1	-	0.0	7.8	44.1	46.1	-	2.0	33.3	44.4	17.8	4.4
Nyanza	10.0	44.3	45.7	-	-	18.2	43.4	38.4	-	-	16.4	47.7	30.4	5.6
Gisagara	6.1	44.7	49.2	-	0.1	18.6	40.4	33.3	-	7.7	20.2	47.9	27.7	4.3
Nyaruguru	8.1	36.3	55.2	-	0.3	16.5	25.0	57.1	-	1.4	67.7	7.3	18.2	6.8
Huye	21.0	33.6	44.9	-	0.5	23.9	35.8	35.1	-	5.2	32.8	40.2	27.0	-
Nyamagabe	12.8	39.9	47.2	-	0.2	25.1	30.9	43.5	-	0.5	57.6	28.5	10.4	3.5
Ruhango	8.5	48.7	42.8	-	-	24.8	44.8	28.6	1.9	-	22.5	49.7	20.9	6.8
Muhanga	3.1	45.5	51.4	-	-	15.0	32.7	49.5	-	2.8	38.7	34.2	19.8	7.2
Kamonyi	27.9	47.1	25.0	-	-	17.8	42.5	34.3	1.4	4.1	24.7	48.3	25.1	1.9
Karongi	7.4	40.9	51.7	-	-	35.0	19.5	45.5	-	-	55.3	25.4	18.4	0.9
Rutsiro	46.9	21.9	30.4	-	0.8	37.9	24.2	37.4	-	0.5	66.7	9.3	21.3	2.7
Rubavu	47.5	23.7	27.4	-	1.5	54.1	19.8	23.4	-	2.7	56.3	24.0	13.5	6.3
Nyabihu	44.9	23.7	26.9	-	4.5	44.7	30.6	20.8	-	4.0	53.8	24.6	13.3	8.3
Ngororero	8.7	28.0	61.4	-	1.9	8.7	39.3	52.1	-	-	52.8	22.6	13.2	11.3
Rusizi	7.1	37.8	54.7	-	0.5	18.1	27.3	52.1	-	2.5	42.3	28.4	22.8	6.5
Nyamasheke	5.3	35.2	59.5	-	-	14.6	27.2	57.5	-	0.7	27.6	45.8	25.0	1.6
Rulindo	18.2	45.7	35.3	-	0.8	23.9	40.6	33.3	1.7	0.4	53.8	35.3	6.7	4.2
Gakenke	4.7	43.3	51.5	-	0.6	10.5	32.6	56.6	-	0.3	69.8	11.1	14.8	4.2
Musanze	25.1	34.6	37.6	-	2.8	38.0	23.1	31.8	-	7.2	62.2	7.0	19.0	11.8
Burera	19.6	33.1	45.7	-	1.6	31.8	22.7	42.9	-	2.5	75.5	7.9	5.2	11.4
Gicumbi	24.9	35.6	39.5	-	0.1	20.6	37.1	41.2	-	1.0	65.9	12.7	16.8	4.6
Rwamagana	8.8	40.3	49.1	0.2	1.8	23.0	39.9	33.3	-	3.8	18.5	42.3	37.8	1.4
Nyagatare	3.2	53.6	42.3	-	0.9	4.8	45.8	44.4	-	5.0	23.7	49.2	22.0	5.1
Gatsibo	15.3	40.1	43.6	-	1.1	23.9	40.0	32.2	0.4	3.5	34.9	39.5	22.9	2.8
Kayonza	17.3	35.9	46.0	-	0.8	14.3	42.3	35.7	1.3	6.3	21.5	39.2	27.7	11.5
Kirehe	1.1	39.8	58.6	-	0.5	4.2	50.0	41.1	-	4.7	14.2	47.8	31.6	6.5
Ngoma	9.4	43.6	46.9	-	0.1	18.9	46.2	31.1	-	3.8	17.8	46.7	27.4	8.2
Bugesera	6.6	27.8	65.5	-	0.1	11.2	38.1	50.3	-	0.3	14.7	43.2	41.1	1.0
National	14.5	37.8	46.9	-	0.8	21.5	34.9	40.8	0.2	2.7	**42.0**	**31.4**	**21.2**	**5.4**

Source: NISR, SAS 2022

Table 51: Season A 2022_Use of pesticides by farmer categories per district (%)

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

Source: NISR, SAS 2022

Table 52: Season B 2022_ Use of pesticides by farmer categories per district (%)

District	Percentage of farmers who used pesticides			Percentage of plots in which pesticides were used			Percentage of land size in which pesticides were used		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	7.1	7.1		3.0	3.0		5.0	5.0	
Gasabo	14.8	12.7	80.0	10.9	10.9	36.1	12.6	11.0	82.2
Kicukiro	9.9	9.6	33.3	4.6	4.6	14.3	10.7	9.9	45.4
Nyanza	9.6	8.6	85.7	8.2	8.2	46.2	9.2	7.4	96.9
Gisagara	11.8	9.1	87.5	6.8	6.8	87.5	16.6	7.6	98.1
Nyaruguru	15.7	14.5	100.0	12.3	12.3	72.7	15.9	15.4	93.3
Huye	9.0	5.6	89.5	6.1	6.1	58.6	8.7	5.7	91.5
Nyamagabe	18.1	17.9	100.0	12.7	12.7	100.0	16.7	16.6	100.0
Ruhango	8.5	6.8	76.9	7.7	7.7	63.2	7.5	5.1	92.7
Muhanga	11.5	10.4	100.0	7.2	7.2	100.0	8.6	8.1	100.0
Kamonyi	7.7	6.9	100.0	5.9	5.9	100.0	6.7	6.1	100.0
Karongi	11.0	10.8	100.0	8.1	8.1	50.0	9.9	9.9	6.6
Rutsiro	21.5	21.5		14.6	14.6		22.0	22.0	
Rubavu	46.1	45.9	66.7	35.3	35.3	28.6	48.0	48.1	24.3
Nyabihu	46.6	46.6		33.6	33.6		45.3	45.3	
Ngororero	14.4	14.4		12.2	12.2		14.2	14.2	
Rusizi	8.8	7.3	80.0	4.9	4.9	61.5	11.0	6.7	87.5
Nyamasheke	6.1	4.3	100.0	3.8	3.8	88.9	5.4	4.1	99.8
Rulindo	21.5	20.8	80.0	14.1	14.1	53.9	19.0	18.8	75.6
Gakenke	20.9	20.9		17.0	17.0		19.6	19.6	
Musanze	48.4	48.4		43.6	43.6		49.4	49.4	
Burera	27.0	27.0		22.7	22.7		25.0	25.0	
Gicumbi	16.5	16.3	100.0	15.3	15.3	50.0	14.7	14.7	79.2
Rwamagana	15.4	13.2	60.7	9.2	9.2	24.4	13.4	12.3	73.6
Nyagatare	10.9	6.3	80.6	4.1	4.1	69.6	8.6	5.8	92.1
Gatsibo	13.7	12.5	52.4	6.9	6.9	28.0	13.6	11.1	77.5
Kayonza	16.5	12.9	75.0	8.8	8.8	29.7	14.4	11.3	87.6
Kirehe	7.3	6.3	88.9	4.4	4.4	73.3	7.9	5.9	66.4
Ngoma	5.8	4.2	68.8	2.8	2.8	33.3	5.8	4.0	87.9
Bugesera	10.6	8.0	57.6	6.2	6.2	34.2	10.2	7.9	81.6
National	15.9	14.7	74.9	11.9	11.9	42.7	14.6	13.0	86.4

Source: NISR, SAS 2022

Table 53: Season C 2022_Use of pesticides per district (%)

	Percentage of farmers who used pesticides			Percentage of plots in which pesticides were used			Percentage of land size in which pesticides were used		
District	Overall	SSF	SITE	Overall	SSF	SITE	Overall	SSF	SITE
Nyarugenge	76.9	72.7	78.6	94.2	94.2	94.0	96.0	96.0	97.5
Gasabo	69.8	61.1	71.6	92.1	92.1	90.6	95.3	95.5	89.0
Kicukiro	40.4	-	46.3	95.0		95.0	99.6		99.6
Nyanza	77.8	61.9	79.0	87.2	86.6	96.2	91.3	90.9	96.5
Gisagara	47.0	50.0	46.0	95.4	95.5	81.8	86.0	86.0	82.3
Nyaruguru	31.1	25.0	32.2	70.2	69.8	92.7	62.8	62.2	93.9
Huye	66.8	52.6	69.8	63.2	62.9	93.1	72.9	72.5	94.8
Nyamagabe	79.6	25.0	82.8	71.4	68.9	95.7	76.9	59.4	98.8
Ruhango	80.1	66.7	81.6	87.8	87.9	85.2	76.8	76.5	86.5
Muhanga	65.2	33.3	73.4	79.8	79.7	92.7	90.3	90.2	95.0
Kamonyi	79.0	74.4	80.3	95.1	95.1	99.2	95.4	95.3	99.2
Karongi	52.8	33.3	54.9	48.0	46.0	76.5	81.1	76.0	93.7
Rutsiro	69.1	37.5	72.6	79.8	77.0	98.2	90.6	65.2	99.9
Rubavu	96.9	96.4	100.0	96.2	96.2	100.0	94.0	94.0	100.0
Nyabihu	88.9	86.3	92.9	96.2	96.2	98.8	96.3	96.3	99.7
Ngororero	21.7	40.0	21.0	98.8	100.0	92.3	99.7	100.0	98.7
Rusizi	68.5	70.8	68.0	77.0	76.5	98.7	84.4	83.1	99.7
Nyamasheke	64.6	-	66.0	87.0		87.0	90.2		90.2
Rulindo	82.9	71.4	86.9	99.2	99.3	96.3	89.1	88.9	98.1
Gakenke	76.4	65.5	78.2	99.9	100.0	87.5	99.8	100.0	91.0
Musanze	84.8	65.3	91.9	80.3	80.2	96.8	88.6	88.4	99.1
Burera	93.7	90.4	95.1	92.5	92.4	98.3	91.5	91.4	99.2
Gicumbi	63.4	33.3	69.3	96.2	96.1	97.9	94.4	93.1	99.5
Rwamagana	81.5	77.3	82.2	99.7	100.0	90.7	99.9	100.0	97.2
Nyagatare	51.9	75.0	39.6	89.0	89.0	90.9	94.1	94.0	97.0
Gatsibo	64.0	60.0	64.7	66.0	65.6	81.4	73.2	71.6	88.5
Kayonza	74.7	50.0	78.3	99.5	100.0	89.7	99.9	100.0	98.7
Kirehe	62.3	68.8	61.6	93.8	94.1	86.6	97.1	97.4	94.0
Ngoma	68.9	66.7	69.2	82.8	82.2	92.5	92.6	92.2	94.7
Bugesera	75.2	77.4	74.6	100.0	100.0	98.0	100.0	100.0	99.1
National	70.1	66.6	70.9	88.9	88.9	92.9	92.1	92.0	97.3

Source: NISR, SAS 2022

Table 54: Type of pesticides, per Season and district in 2022 (%)

	Season A								Season B								Season C							
District	Dithane	Ridomil	Dimethoate	Cypermethrin	Dursiban	Rocket	Beam	Others	Dithane	Ridomil	Dimethoate	Cypermethrin	Dursiban	Rocket	Beam	Others	Dithane	Ridomil	Dimethoate	Cypermethrin	Rocket	Beam	Others
Nyarugenge	20.61	-	27.01	2.62	-	36.76	-	13.00	61.54	-	-	7.69	-	30.77	-	-	22.7	-	17.7	5.0	30.3	-	24.4
Gasabo	13.46	0.01	2.57	1.14	-	78.22	-	4.61	20.00	1.82	1.82	7.27	-	61.82	-	7.27	20.2	-	10.5	3.7	36.6	-	29.1
Kicukiro	12.29	-	4.15	3.86	-	65.48	0.01	14.22	12.00	-	-	4.00	-	76.00	4.00	4.00	20.5	-	25.6	15.4	5.1	-	33.3
Nyanza	13.86	2.95	0.14	3.23	-	73.03	-	6.79	13.46	-	-	15.38	-	69.23	-	1.92	11.3	1.6	2.6	4.2	71.5	0.3	8.4
Gisagara	4.16	-	0.80	7.59	-	85.73	0.01	1.71	15.79	-	3.51	26.32	-	47.37	1.75	5.26	23.6	-	3.4	10.1	55.1	1.1	6.7
Nyaruguru	17.36	-	-	18.18	-	53.31	-	11.15	37.93	-	-	17.24	-	13.79	-	31.03	44.4	-	-	4.9	34.6	-	16.1
Huye	6.62	3.50	-	3.08	-	84.47	0.02	2.31	13.95	2.33	-	39.53	-	41.86	-	2.33	17.4	-	2.4	10.8	61.1	-	8.4
Nyamagabe	44.76	0.42	-	31.76	-	19.10	-	3.96	46.99	-	-	20.48	-	28.92	-	3.61	68.2	0.7	-	14.2	16.6	-	0.3
Ruhango	11.80	-	3.39	3.77	-	77.29	0.01	3.74	10.00	-	-	22.00	-	60.00	-	8.00	25.4	2.4	7.1	7.5	50.4	-	7.1
Muhanga	26.33	-	1.97	24.40	-	47.29	-	-	4.08	2.04	4.08	26.53	-	59.18	2.04	2.04	30.2	-	17.7	5.9	39.7	-	6.6
Kamonyi	17.75	0.31	10.35	-	-	70.21	-	1.37	30.43	2.17	6.52	4.35	-	45.65	-	10.87	28.9	3.8	13.7	2.2	31.4	-	20.0
Karongi	16.29	-	12.21	16.47	0.85	54.18	-	-	43.75	-	-	22.92	-	18.75	-	14.58	30.7	1.0	15.8	14.9	25.7	-	11.9
Rutsiro	54.48	33.83	0.31	8.05	-	2.33	-	1.00	85.56	-	-	5.56	-	6.67	-	2.22	55.4	4.1	-	27.0	10.8	-	2.7
Rubavu	34.16	18.85	19.19	23.01	0.05	1.84	-	2.90	93.63	-	-	0.98	-	4.41	-	0.98	35.2	18.7	14.8	26.9	3.9	-	0.6
Nyabihu	35.52	15.31	21.49	15.35	-	4.98	-	7.36	82.14	1.02	1.02	10.20	-	4.59	-	1.02	44.2	10.1	19.6	9.8	6.3	-	10.0
Ngororero	44.44	2.75	0.60	12.56	-	34.10	-	5.55	38.81	-	-	5.97	-	52.24	-	2.99	54.6	-	15.2	3.0	27.3	-	-
Rusizi	23.11	0.93	8.55	31.78	-	25.99	-	9.63	23.81	-	4.76	33.33	-	23.81	-	14.29	23.6	0.4	18.4	8.0	16.8	-	32.8
Nyamasheke	15.16	0.26	22.73	35.58	-	13.75	-	12.51	15.38	-	-	53.85	-	23.08	-	7.69	23.2	2.1	11.9	23.7	21.1	-	18.1
Rulindo	22.05	3.67	6.45	6.59	-	54.95	0.17	6.13	45.92	1.02	-	5.10	-	41.84	-	6.12	51.7	5.6	3.4	4.5	28.1	-	6.7
Gakenke	12.48	7.55	1.47	30.02	-	41.87	-	6.62	8.03	2.19	5.11	26.28	-	51.09	-	7.30	15.0	15.0	1.5	16.0	21.5	-	31.0
Musanze	36.62	3.78	14.72	13.07	-	29.95	-	1.88	66.26	-	3.70	16.05	-	13.17	-	0.82	47.3	4.0	17.4	13.2	6.8	-	11.4
Burera	27.67	7.38	3.32	35.12	-	23.58	-	2.92	67.65	0.74	-	11.76	-	12.50	-	7.35	43.3	4.4	10.3	23.6	13.0	-	5.5
Gicumbi	41.11	4.08	0.27	2.31	-	43.24	-	8.99	45.10	1.96	-	11.76	-	35.29	-	5.88	66.4	1.5	0.8	3.0	17.2	-	11.2
Rwamagana	19.88	2.12	9.23	4.94	-	53.07	0.01	10.74	26.61	3.67	9.17	8.26	-	32.11	3.67	16.51	21.8	0.4	23.9	5.3	17.3	-	31.3
Nyagatare	17.26	2.78	10.30	14.04	-	50.70	0.04	4.89	9.43	-	11.32	22.64	-	23.58	1.89	31.13	28.4	3.7	8.6	12.4	19.8	1.2	25.9
Gatsibo	29.76	0.38	2.15	5.48	-	51.27	-	10.97	24.00	-	-	7.00	-	33.00	1.00	35.00	28.6	-	3.6	5.4	41.1	-	21.4
Kayonza	37.42	0.04	7.02	6.65	-	40.26	0.01	8.60	22.43	-	4.67	14.02	-	49.53	1.87	7.48	27.0	-	16.9	6.1	23.0	-	27.1
Kirehe	10.53	0.21	10.96	3.21	-	65.33	0.01	9.74	17.54	-	8.77	21.05	-	35.09	1.75	15.79	28.1	-	14.6	9.8	34.8	-	12.8
Ngoma	17.95	-	11.84	16.27	-	41.21	0.07	12.67	30.95	-	9.52	14.29	2.38	30.95	2.38	9.52	21.5	0.6	8.9	8.9	33.5	-	26.6
Bugesera	20.78	0.44	29.76	10.51	-	32.73	0.02	5.76	12.77	-	8.51	12.77	-	51.06	8.51	6.38	21.9	2.2	16.1	7.6	35.3	-	17.0
National	26.76	6.38	9.14	14.68	0.03	37.53	0.01	5.46	43.12	0.67	2.84	14.28	0.04	29.86	0.87	8.32	33.2	3.4	11.5	11.0	26.1	0.1	14.7

Source: NISR, SAS 2022

Table 55: Percentage of farmers by agricultural practices in Season A 2022

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

Source: NISR, SAS 2022

Table 56: Percentage of farmers by agricultural practices in Season B 2022

District	Farmers who protected land against erosion (%)			Farmers who used any mechanical equipment for agriculture activities %)			Farmers who practiced irrigation (%)			Farmers who practiced agroforestry (%)		
	Overall	**SSF**	**LSF**	**Overall**	**SSF**	**LSF**	**Overall**	**SSF**	**LSF**	**Overall**	**SSF**	**LSF**
Nyarugenge	90.7	90.7		-	-		6.6	6.6		58.0	58.0	
Gasabo	89.2	89.2	90.0	0.6	0.3	10.0	6.2	4.8	50.0	62.5	62.2	72.7
Kicukiro	78.7	78.4	100.0	1.0	1.0	-	8.4	8.0	33.3	61.5	61.3	75.0
Nyanza	96.7	96.7	100.0	0.2	0.2	-	12.0	10.9	85.7	43.3	43.6	25.0
Gisagara	92.0	92.0	93.8	-	-	-	20.7	19.2	62.5	47.5	49.0	-
Nyaruguru	99.0	99.0	100.0	-	-	-	4.8	4.1	50.0	51.5	51.0	70.0
Huye	91.5	91.1	100.0	-	-	-	18.1	14.9	94.7	47.5	48.1	34.8
Nyamagabe	99.5	99.5	100.0	0.3	0.3	-	5.0	5.0	-	42.2	42.1	100.0
Ruhango	94.1	93.9	100.0	0.2	0.2	-	8.1	6.6	69.2	48.0	48.4	33.3
Muhanga	97.1	97.1	100.0	-	-	-	12.7	12.2	60.0	39.2	38.7	71.4
Kamonyi	89.9	89.8	100.0	0.4	0.4	-	9.2	8.9	40.0	38.8	39.1	14.3
Karongi	93.8	93.8	100.0	0.7	0.7	-	8.6	8.4	100.0	49.7	49.6	100.0
Rutsiro	97.6	97.6		-	-		2.2	2.2		50.9	50.9	
Rubavu	95.4	95.4	100.0	-	-	-	-	-	-	43.6	43.3	75.0
Nyabihu	97.9	97.9		-	-		0.3	0.3		72.9	72.9	
Ngororero	95.7	95.7		-	-		0.9	0.9		40.6	40.6	
Rusizi	90.5	90.3	100.0	-	-	-	6.7	5.4	70.0	58.7	59.3	30.0
Nyamasheke	97.4	97.4	100.0	-	-	-	3.7	2.4	75.0	66.3	66.9	33.3
Rulindo	95.3	95.2	100.0	0.2	-	20.0	11.8	11.2	60.0	58.4	58.6	40.0
Gakenke	98.2	98.2		0.2	0.2		4.6	4.6		60.2	60.2	
Musanze	94.0	94.0		-	-		1.5	1.5		47.9	47.9	
Burera	94.4	94.4		0.2	0.2		0.6	0.6		31.8	31.8	
Gicumbi	96.2	96.1	100.0	0.2	0.2	-	6.2	6.2	-	47.0	46.9	66.7
Rwamagana	92.5	92.3	96.4	0.2	0.2	-	11.2	9.5	46.4	76.8	77.0	73.3
Nyagatare	80.5	80.1	86.1	5.7	2.0	61.1	6.8	3.3	58.3	57.8	58.2	52.4
Gatsibo	95.7	95.6	100.0	1.3	0.5	28.6	9.6	8.2	52.4	63.7	63.6	68.2
Kayonza	65.7	63.6	100.0	2.5	0.2	39.3	12.6	8.3	82.1	46.0	46.2	43.3
Kirehe	87.0	87.0	88.9	0.4	0.3	11.1	9.7	8.7	88.9	58.1	58.7	18.2
Ngoma	86.7	86.4	100.0	0.3	0.2	6.3	9.0	7.8	56.3	67.4	68.0	47.4
Bugesera	75.6	75.1	84.9	0.3	0.2	3.0	12.3	10.2	51.5	57.0	56.6	65.0
National	91.4	91.3	95.1	0.6	0.3	15.6	8.0	6.9	61.8	53.2	53.3	49.5

Source: NISR, SAS 2022

Table 57: Percentage of farmers by agricultural practices in Season C 2022

	Farmers who protected land against erosion (%)			Farmers who used any mechanical equipment for agriculture activities (%)			Farmers who practiced irrigation (%)			Farmers who practiced agroforestry (%)	
District	Overall	SSF	SITE	Overall	SSF	SITE	Overall	SSF	SITE	Overall	SSF
Nyarugenge	98.7	95.5	100.0	-	-	-	66.7	36.4	78.6	-	-
Gasabo	95.3	94.4	95.5	0.9	-	1.1	93.4	94.4	93.2	16.0	16.0
Kicukiro	85.1	66.7	87.8	2.1	-	2.4	72.3	50.0	75.6	-	-
Nyanza	99.0	100.0	98.9	0.3	-	0.4	91.6	85.7	92.0	5.5	5.5
Gisagara	100.0	100.0	100.0	-	-	-	66.7	40.6	75.0	6.9	6.9
Nyaruguru	99.6	100.0	99.5	-	-	-	69.7	55.6	72.2	4.0	4.0
Huye	97.7	97.4	97.8	0.5	2.6	-	90.5	76.3	93.4	11.8	11.8
Nyamagabe	98.6	100.0	98.5	-	-	-	20.1	37.5	19.1	15.3	15.3
Ruhango	98.1	100.0	97.9	-	-	-	90.1	76.2	91.6	23.9	23.9
Muhanga	93.8	97.0	93.0	-	-	-	83.2	57.6	89.8	3.6	3.6
Kamonyi	96.1	97.4	95.8	0.6	-	0.7	93.9	76.9	98.6	7.0	7.0
Karongi	100.0	100.0	100.0	-	-	-	65.4	46.7	67.4	34.8	34.8
Rutsiro	98.8	100.0	98.6	-	-	-	2.5	12.5	1.4	43.9	43.9
Rubavu	87.7	87.3	90.0	-	-	-	7.7	-	50.0	31.4	31.4
Nyabihu	98.6	97.6	100.0	0.5	-	1.2	4.8	3.2	7.1	62.7	62.7
Ngororero	95.4	100.0	95.2	-	-	-	11.6	40.0	10.5	45.5	45.5
Rusizi	97.6	100.0	97.1	0.8	-	1.0	83.5	87.5	82.5	21.3	21.3
Nyamasheke	98.6	100.0	98.6	-	-	-	83.0	66.7	83.3	44.6	44.6
Rulindo	100.0	100.0	100.0	-	-	-	96.3	85.7	100.0	33.3	33.3
Gakenke	97.5	89.7	98.8	-	-	-	77.9	62.1	80.6	30.3	30.3
Musanze	93.7	91.7	94.4	1.1	-	1.5	4.1	5.6	3.6	35.3	35.3
Burera	94.5	95.9	94.0	-	-	-	20.8	20.6	20.9	28.7	28.7
Gicumbi	99.4	100.0	99.3	0.6	3.7	-	89.0	66.7	93.4	17.9	17.9
Rwamagana	94.0	86.4	95.4	-	-	-	88.7	68.2	92.3	7.9	7.9
Nyagatare	72.8	89.3	64.2	1.2	-	1.9	56.8	82.1	43.4	37.7	37.7
Gatsibo	99.0	100.0	98.8	1.0	-	1.2	85.0	60.0	89.4	23.3	23.3
Kayonza	99.0	91.7	100.0	1.1	-	1.2	95.8	91.7	96.4	11.4	11.4
Kirehe	92.8	93.8	92.7	0.6	-	0.7	94.6	93.8	94.7	24.4	24.4
Ngoma	96.6	100.0	96.3	0.8	-	0.9	74.0	83.3	72.9	17.7	17.7
Bugesera	75.8	71.0	76.9	-	-	-	59.4	45.2	62.7	15.2	15.2
National	95.9	94.7	96.1	0.3	0.2	0.4	62.9	44.2	67.1	30.4	30.4

Source: NISR, SAS 2022

Table 58: Irrigation type, per Season and district in 2022 (%)

	Modern irrigation														Traditional techniques		
	Surface irrigation			Flood irrigation			Drip irrigation			Sprinkler irrigation			Pivot irrigation					
District	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C
Nyarugenge	-	-	1.9	-	-	-	-	-	-	-	-	-	-	-	-	100.0	100.0	98.1
Gasabo	24.0	26.7	2.0	4.0	6.7	-	-	6.7	-	-	-	-	-	-	-	72.0	60.0	98.0
Kicukiro	20.0	50.0	31.4	-	-	-	-	-	-	-	-	-	-	-	-	80.0	50.0	68.6
Nyanza	47.6	21.4	20.0	23.8	28.6	-	-	-	-	-	-	0.3	-	-	-	28.6	50.0	79.7
Gisagara	-	17.4	18.2	65.4	47.8	-	-	-	-	-	-	3.4	-	-	-	34.6	34.8	78.4
Nyaruguru	66.7	62.5	5.1	-	-	-	-	-	-	-	-	-	-	-	-	33.3	37.5	94.9
Huye	12.1	17.4	18.5	57.6	73.9	-	-	-	-	-	-	-	-	-	-	30.3	8.7	81.5
Nyamagabe	-	-	15.4	54.6	66.7	-	-	-	-	-	-	-	-	-	1.9	45.5	33.3	82.7
Ruhango	32.1	7.7	2.3	17.9	53.9	-	-	-	-	-	-	0.6	-	-	1.1	50.0	38.5	96.1
Muhanga	60.0	14.3	21.1	13.3	14.3	-	-	-	-	-	-	-	-	-	-	26.7	71.4	78.9
Kamonyi	10.7	-	15.6	7.1	18.2	-	-	-	-	-	-	0.6	-	-	-	82.1	81.8	83.8
Karongi	25.0	16.7	25.5	-	-	-	-	-	10.8	-	-	14.7	-	-	-	75.0	83.3	49.0
Rutsiro	100.0		50.0	-		-	-		-	-		-	-		-	-		50.0
Rubavu			57.1			-			-			-			-			42.9
Nyabihu	50.0		-	-		-	-		-	-		-	-		-	50.0		100.0
Ngororero	100.0	-	73.3	-	-	-	-	-	-	-	-	-	-	-	6.7	-	100.0	20.0
Rusizi	-	-	14.7	63.6	53.9	-	-	-	-	-	-	-	-	-	-	36.4	46.2	85.3
Nyamasheke	14.3	-	0.9	85.7	100.0	-	-	-	-	-	-	1.7	-	-	-	-	-	97.4
Rulindo	44.4	8.3	16.3	3.7	8.3	-	-	8.3	-	3.7	-	-	-	-	-	48.2	75.0	83.8
Gakenke	-	-	15.0	-	-	-	-	20.0	-	-	-	-	-	-	-	100.0	80.0	85.0
Musanze	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		100.0	100.0
Burera	-		3.9	-		-	-		-	-		5.8	-		-	100.0		90.4
Gicumbi	-	22.2	1.3	-	-	-	-	-	-	-	-	-	-	-	-	100.0	77.8	98.7
Rwamagana	11.3	22.2	0.7	15.1	17.8	-	28.3	22.2	-	5.7	-	-	-	-	-	39.6	37.8	99.3
Nyagatare	53.5	41.5	33.3	12.1	17.1	-	1.7	-	-	5.2	2.4	-	17.2	26.8	-	10.3	12.2	66.7
Gatsibo	13.3	15.0	-	26.7	30.0	-	6.7	-	-	6.7	5.0	-	-	-	-	46.7	50.0	100.0
Kayonza	52.5	50.7	-	8.9	15.9	-	1.0	4.4	-	5.9	7.3	-	9.9	2.9	-	21.8	18.8	100.0
Kirehe	5.0	6.3	1.2	12.5	18.8	-	-	-	-	5.0	15.6	-	37.5	15.6	0.6	40.0	43.8	98.2
Ngoma	18.2	3.9	71.1	40.9	30.8	-	4.6	34.6	1.1	-	-	2.2	-	-	-	36.4	30.8	25.6
Bugesera	16.1	12.3	55.2	19.4	27.7	-	3.2	6.2	-	30.1	23.1	-	3.2	-	8.3	28.0	30.8	36.5
National	26.2	21.5	14.6	19.2	26.0	-	3.2	5.7	0.4	6.4	5.3	1.0	5.6	3.5	0.4	39.4	38.0	83.6

Source: NISR, SAS 2022

Table 59: Source of water used for irrigation, per season and district in 2022 (%)

	Rainwater			Water treatment			Underground			Lake / streams			Water catchment		
District	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C
Nyarugenge	-	-	0.1	36.4	20.0	-	36.4	40.0	1.3	27.3	40.0	98.6	-	-	-
Gasabo	-	6.3	-	20.0	-	-	24.0	6.3	76.4	56.0	68.8	23.6	-	18.8	-
Kicukiro	3.9	-	-	15.4	18.2	-	19.2	18.2	0.5	50.0	63.6	99.5	11.5	-	-
Nyanza	-	-	0.0	-	-	-	24.0	26.7	43.5	60.0	60.0	55.8	16.0	13.3	0.7
Gisagara	-	-	-	6.5	7.4	-	32.3	37.0	94.7	54.8	48.2	5.4	6.5	7.4	-
Nyaruguru	-	-	-	-	-	-	-	12.5	42.6	100.0	87.5	57.4	-	-	-
Huye	-	-	-	2.8	-	-	19.4	30.4	71.7	69.4	65.2	28.3	8.3	4.4	-
Nyamagabe	-	-	-	-	-	-	-	-	14.2	100.0	100.0	85.8	-	-	-
Ruhango	-	3.2	-	10.3	9.7	-	48.3	58.1	95.9	41.4	29.0	4.1	-	-	-
Muhanga	-	-	-	-	-	-	40.0	21.4	49.7	46.7	64.3	50.3	13.3	14.3	-
Kamonyi	3.3	7.7	-	3.3	7.7	-	40.0	46.2	35.6	46.7	30.8	64.4	6.7	7.7	-
Karongi	-	-	-	-	16.7	0.1	100.0	16.7	7.6	-	66.7	91.4	-	-	0.9
Rutsiro	-		-	-		-	100.0		100.0	-		-	-		-
Rubavu	-		-	-		-	-		100.0	-		-	-		-
Nyabihu	-		-	50.0		-	50.0		85.3	-		14.7	-		-
Ngororero	-	-	-	-	-	-	100.0	-	0.7	-	100.0	99.3	-	-	-
Rusizi	9.1	-	-	18.2	-	-	-	50.0	11.5	45.5	50.0	88.5	27.3	-	-
Nyamasheke	-	-	-	14.3	-	-	-	18.8	1.4	85.7	75.0	98.6	-	6.3	-
Rulindo	3.6	-	-	-	-	28.8	28.6	-	31.6	46.4	100.0	38.2	21.4	-	1.4
Gakenke	-	-	-	30.0	8.3	0.0	30.0	58.3	30.2	40.0	33.3	69.8	-	-	-
Musanze	-	-	-	50.0	-	-	-	40.0	29.9	50.0	60.0	70.1	-	-	-
Burera	-		-	-		-	100.0		40.0	-		59.9	-		-
Gicumbi	14.3	20.0	0.0	14.3	-	-	42.9	60.0	5.3	28.6	20.0	94.7	-	-	-
Rwamagana	3.5	7.8	0.0	25.9	9.8	-	6.9	11.8	53.6	50.0	52.9	45.9	13.8	17.7	0.5
Nyagatare	11.9	2.4	-	4.8	-	-	9.5	9.5	22.5	34.5	66.7	77.5	39.3	21.4	-
Gatsibo	-	-	61.8	20.0	-	-	40.0	33.3	10.7	13.3	42.9	27.5	26.7	23.8	-
Kayonza	1.8	1.4	3.1	9.1	8.1	-	17.3	24.3	84.0	33.6	36.5	0.5	38.2	29.7	12.4
Kirehe	-	-	0.1	-	3.0	-	39.0	18.2	16.8	58.5	72.7	68.8	2.4	6.1	14.3
Ngoma	-	-	0.1	-	20.7	0.4	68.2	34.5	43.4	31.8	37.9	55.6	-	6.9	0.6
Bugesera	-	5.7	-	2.1	-	0.1	26.6	32.9	77.0	63.8	55.7	22.7	7.5	5.7	0.2
National	2.6	2.7	0.6	8.4	5.3	1.2	25.5	27.0	44.6	47.4	53.1	53.1	16.2	11.9	0.5

Source: NISR, SAS 2022

Table 60: Type of anti-erosion activities, per season and district in 2022 Season A (%)

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

Source: NISR, SAS 2022

Table 61: Type of anti-erosion activities, per season and district in 2022 Season B (%)

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

Source: NISR, SAS 2022

Table 62: Type of anti-erosion activities, per season and district in 2022 Season C (%)

Disrtict	Ditches	Trees/Windbreak/ shelterbelt	Bench/Radical terraces	Progressive terraces	Cover plants	Water drainage	Mulching	Beds/ridges	Water channels
Nyarugenge	0.0	0.0	0.0	0.0	3.5	0.0	3.3	15.4	77.8
Gasabo	0.6	0.0	0.0	4.5	16.3	6.2	0.2	0.2	72.1
Kicukiro	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.8	87.2
Nyanza	1.3	0.0	1.4	0.2	4.7	10.2	0.0	55.6	26.6
Gisagara	0.0	0.0	0.0	0.0	11.7	13.9	2.2	21.3	51.0
Nyaruguru	1.3	0.4	0.2	1.7	18.1	2.1	0.2	1.8	74.3
Huye	0.5	0.6	0.0	1.7	9.6	9.5	0.0	21.5	56.5
Nyamagabe	12.0	1.5	1.7	3.1	12.0	0.0	0.0	0.7	69.1
Ruhango	0.7	1.0	0.0	2.7	28.2	1.1	2.9	3.2	60.2
Muhanga	0.0	0.4	0.0	0.0	19.2	0.9	0.7	23.5	55.4
Kamonyi	0.0	0.0	0.0	0.4	6.3	0.0	6.8	18.8	67.8
Karongi	5.1	0.0	0.0	17.2	32.5	6.7	0.0	0.4	38.1
Rutsiro	25.2	3.3	0.0	0.0	34.9	0.0	0.0	0.0	36.6
Rubavu	0.7	13.0	14.6	2.5	28.0	0.0	0.7	40.0	0.5
Nyabihu	4.5	2.2	5.7	8.3	55.9	0.0	0.0	22.0	1.5
Ngororero	0.8	3.5	0.3	0.0	18.3	0.0	0.2	17.0	60.0
Rusizi	0.0	0.7	0.0	3.2	10.8	0.0	3.5	23.5	58.2
Nyamasheke	2.8	4.5	2.7	0.2	27.7	0.9	0.0	1.8	59.6
Rulindo	0.0	5.3	0.0	0.6	32.2	1.6	0.0	4.7	55.5
Gakenke	2.8	1.1	0.3	4.4	43.9	0.0	0.0	3.5	44.0
Musanze	0.9	9.9	5.3	7.1	33.3	0.1	0.2	41.7	1.5
Burera	2.2	10.1	3.9	7.2	55.9	0.2	0.0	18.7	1.8
Gicumbi	0.0	1.1	0.0	0.3	27.7	0.6	0.6	19.9	49.8
Rwamagana	0.0	0.0	0.0	0.0	38.3	0.0	33.1	0.0	28.7
Nyagatare	2.2	0.5	0.0	0.0	3.5	34.6	0.5	21.0	37.6
Gatsibo	0.0	1.5	0.0	0.0	6.0	2.4	3.2	27.8	59.1
Kayonza	0.0	2.5	0.0	0.0	9.9	2.0	6.7	8.1	70.8
Kirehe	5.1	1.6	0.0	0.0	5.2	17.7	3.2	22.5	44.8
Ngoma	2.7	1.3	0.0	0.0	11.0	1.5	7.5	2.5	73.5
Bugesera	1.8	0.0	0.0	1.3	1.8	9.2	7.1	7.4	71.4
National	2.2	6.2	4.1	5.5	38.9	1.7	0.5	23.9	17.2

Source: NISR, SAS 2022

Table 63 : Degree of erosion, per season and district in 2022 (%)

District	Severe (Rill erosion, Gully erosion, Mass movement/Landslides)			Moderate (Diffuse overland flow erosion, overland flow erosion)			Low (Wind erosion)			Very Low (Splash erosion)		
	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C	Season A	Season B	Season C
Nyarugenge	1.8	-	-	12.9	19.2	81.9	28.1	43.1	18.0	57.2	37.8	0.2
Gasabo	1.3	-	3.2	12.4	4.7	37.3	29.3	31.7	0.1	57.0	63.7	59.4
Kicukiro	-	-	14.1	1.9	-	31.6	35.0	0.1	53.5	63.2	99.9	0.8
Nyanza	3.9	0.4	-	36.0	19.4	5.9	33.7	60.5	54.7	26.3	19.7	39.4
Gisagara	0.0	0.3	-	3.0	3.3	0.1	49.2	20.3	30.8	47.8	76.0	69.1
Nyaruguru	0.8	0.6	0.0	7.1	2.5	13.2	62.3	56.4	41.7	29.7	40.4	45.1
Huye	0.2	0.5	2.3	5.7	4.7	25.9	46.3	51.7	36.7	47.9	43.2	35.1
Nyamagabe	2.0	1.0	17.1	10.5	8.2	16.5	42.2	38.2	4.3	45.2	52.7	62.1
Ruhango	3.3	0.8	0.1	11.8	6.2	10.5	27.7	25.0	12.0	57.2	68.0	77.4
Muhanga	3.6	1.4	0.0	11.4	4.6	4.3	40.6	29.0	65.8	44.4	64.9	29.8
Kamonyi	3.8	1.8	-	28.7	14.2	18.9	30.1	45.9	34.1	37.4	38.1	47.0
Karongi	0.4	0.8	-	24.5	19.2	34.5	20.8	24.6	12.3	54.3	55.5	53.2
Rutsiro	1.3	1.5	11.1	22.3	19.8	10.3	58.6	57.6	43.6	17.8	21.2	35.0
Rubavu	4.9	2.5	0.0	23.0	4.6	5.6	15.4	28.7	17.5	56.7	64.3	76.9
Nyabihu	4.8	3.9	3.0	27.8	22.2	21.9	54.6	61.6	52.7	12.8	12.3	22.3
Ngororero	9.0	4.6	0.0	16.3	21.5	3.2	46.5	37.2	0.4	28.2	36.8	96.4
Rusizi	5.3	1.1	19.0	9.6	4.6	34.7	18.3	24.8	0.0	66.9	69.5	46.3
Nyamasheke	0.8	1.2	0.0	19.1	16.4	0.3	14.7	20.4	1.7	65.5	62.1	98.1
Rulindo	14.6	0.4	-	38.0	22.6	6.2	29.8	35.4	14.6	17.5	41.6	79.2
Gakenke	2.0	2.3	-	37.2	27.2	39.5	54.5	62.4	58.9	6.3	8.1	1.6
Musanze	-	1.9	0.0	4.8	4.0	13.5	19.5	23.4	28.4	75.6	70.8	58.1
Burera	2.5	0.4	16.2	9.3	2.9	15.6	5.7	4.0	15.3	82.5	92.6	52.9
Gicumbi	1.7	2.8	0.0	18.0	29.8	0.2	31.4	23.6	74.4	49.0	43.8	25.4
Rwamagana	-	0.0	0.3	0.6	3.6	5.3	31.4	23.6	12.1	68.0	72.8	82.3
Nyagatare	-	0.1	-	5.5	6.0	58.1	30.2	30.4	-	64.3	63.5	41.9
Gatsibo	0.3	1.7	0.0	14.2	10.4	0.1	32.9	40.7	85.8	52.7	47.3	14.1
Kayonza	-	0.1	-	10.3	10.9	7.4	30.1	30.7	21.9	59.6	58.4	70.7
Kirehe	0.7	0.2	7.9	16.2	18.2	9.1	17.3	11.4	14.9	65.8	70.2	68.1
Ngoma	0.1	0.1	-	4.8	6.9	6.7	32.8	22.0	63.7	62.4	71.0	29.7
Bugesera	0.6	0.0	0.0	8.3	11.5	44.7	46.2	34.5	15.6	44.9	54.1	39.7
National	2.6	1.2	3.1	16.4	12.4	17.4	35.0	34.5	33.6	46.1	51.9	45.9

Source: NISR, SAS 2022

ANNEX

STAFF WHO CONTRIBUTED TO THE SEASONAL AGRICULTURAL SURVEY 2022

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SAMPLING ERRORS

The sample survey results can be affected by two types of errors (i) sampling errors and (ii) non sampling errors. Non sampling errors refers to all sources of errors that are unrelated to sampling. They occur in all aspect of the surveys process during data collection and processing. They can be classified into four categories: coverage errors, measurement errors, non-response error, and processing errors. Efforts are made during the implementation of survey to minimize these errors but, it is not possible to eliminate all of them. Non-sampling errors are often extremely difficult, if not impossible to measure.

Sampling errors are those errors associated with sampling selection process. These errors are caused by observing a sample instead of the whole population and refer to the difference between the estimate derived from a sample survey and the true value that would result if a census of the whole population were taken under the same conditions.

The sample of segments and plots selected for the SAS 2021/22 is one of many possible samples. The estimates obtained from the selected sample would differ from estimates which could be obtained from other samples of the same size and sampling method taken from same population. Sampling error causes variability among estimates derived from different samples when keeping the same sample size and design, and the same estimation method used. It's measured commonly by the standard error which is the square root of the sampling variance. The variance depends on many things, including the sampling method, the estimation method, the sample size, and the variability of the estimated characteristic.

In order to examine the precision of the most important estimates from the SAS 2021/22 data and the statistical efficiency of the sampling frame and sample design, it is important to calculate the sampling errors and corresponding coefficients of variation (CVs) for these estimates, such as the total area in each major crop. The sampling error of each estimate is measured by the standard error, or square root of the variance. The Complex Samples module of SPSS and Stata uses a linearized Taylor series variance estimator that takes into account the stratification and clustering in the sample design.

The variance estimator for a total used by the Complex Samples module of SPSS and Stata can be expressed as follows:

Variance Estimator for a Total

$$V(\hat{Y}) = \sum_{h=1}^{L} \left[(1 - f_h) \times \frac{n_h}{n_h - 1} \sum_{i=1}^{n_h} \left(\hat{Y}_{hi} - \frac{\hat{Y}_h}{n_h} \right)^2 \right],$$

where:

f_h = first stage probability for stratum h; (1- f_h) is the finite population correction (fpc) factor

$$\hat{Y}_{hi} = \sum_{j=1}^{m_h} W'_{hi}\, y_{hij}$$

y_{hij} = value of variable y for the j-th sample plot in the i-th sample segment of stratum h

$$\hat{Y}_h = \sum_{i=1}^{n_h} \hat{Y}_{hi}$$

Variance Estimator for a Ratio

$$V(\hat{R}) = \frac{1}{\hat{X}^2}\left[V(\hat{Y}) + \hat{R}^2\, V(\hat{X}) - 2\,\hat{R}\, COV(\hat{X},\hat{Y})\right],$$

where:

$$COV(\hat{X},\hat{Y}) = \sum_{h=1}^{L}\left[(1-f_h)\times\frac{n_h}{n_h - 1}\sum_{i=1}^{n_h}\left(\hat{X}_{hi} - \frac{\hat{X}_h}{n_h}\right)\left(\hat{Y}_{hi} - \frac{\hat{Y}_h}{n_h}\right)\right]$$

$V(\hat{Y})$ and $V(\hat{X})$ are calculated according to the formula for the variance of a total.

In addition to the standard error, the program computes the design effect (DEFF) for main indicator (area under cultivation). The design effect is defined as the variance of an estimate based on the actual complex sample design divided by the corresponding variance from a simple random sample of the same size. It is a measure of the relative statistical efficiency of the sample design, taking into account both the stratification and clustering in the sample design. The clustering generally increases the design effect due to the intracluster correlation of plots within the segments. At the same time, the land-use stratification of the segments will decrease the design effects because it is more efficient than a simple random sample.

The estimates of the total area of major crops at the national level and the corresponding measures of precision (standard error (SE), the coefficient of variation (CV), the 95 percent confidence interval, the design effect (DEFF), and number of unweighted observation (n of sample plots)) from the SAS 2021/22 data are presented in Table 1.

The confidence interval (e.g., as estimated cultivated area for maize) can be interpreted as follows: the estimated area under cultivation of maize is 219,683 hectares, and its standard error is 5,334.4. Therefore, to obtain the 95 percent confidence limits, adds, and subtracts the standard error to the sample estimate times confidence interval value. There is a high probability (95 percent) that the true, area under maize cultivation is between 209,216ha and 230,150ha.

A DEFF value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates an increase in the sampling error due to the use of a more complex and less statistically efficient design, such as multistage and cluster selection. It can be seen in the results that the design effects for the estimates of total area for some crops are lower than 1, indicating that the increase in sampling efficiency from the land-use stratification more than off-sets the effects of clustering for these crops.

Table 1: Estimates of total area by major crop at the national level from the SAS 2021/22 Season A data, with standard error, CV, 95% confidence interval, design effect and number of sample observations

3.1 Crop name	Estimate	SE	CV	95% Confidence Interval		DEFF	No. observations (plots)
				Lower	Upper		
Maize	219,683	5,334.4	0.024	209,216	230,150	0.026	7,755
Sorghum	37,469	3,355.9	0.090	30,884	44,054	0.920	726
Bean	362,314	7,060.8	0.019	348,460	376,169	0.263	9,335
Irish potato	56,442	3,407.3	0.060	49,756	63,128	1.620	1,961
Sweet potato	97,771	3,503.3	0.036	90,897	104,645	1.866	2,268
Taro	40,226	2,032.1	0.051	36,238	44,213	1.442	991
Soybean	26,996	1,384.3	0.051	24,279	29,712	0.246	1,072
Vegetables	18,246	1,157.1	0.063	15,976	20,517	0.446	807
Cooking banana	96,434	4,238.6	0.044	88,117	104,751	1.464	3,736
Dessert banana	36,598	1,638.3	0.045	33,384	39,813	0.981	3,649
Banana for beer	126,472	4,537.8	0.036	117,569	135,375	1.358	4,101
Cassava	186,204	4,852.1	0.026	176,683	195,724	1.302	6,104
Fruits	10,914	1,897.8	0.174	7,190	14,637	0.294	490

Table 2. Estimates of total area by major crop at the national level from the SAS 2020/21 Season A data, with standard error, CV, 95% confidence interval, design effect and number of sample observations

3.1 Crop name	Estimate	SE	CV	95% Confidence Interval		DEFF	No. observations (plots)
				Lower	Upper		
Maize	236,642	6875.3	0.029	223,152	250,131	0.036	8,472
Sorghum	33,636	3421.4	0.102	26,923	40,348	1.185	625
Bean	389,114	8530.8	0.022	372,376	405,852	0.305	9,450
Irish potato	52,196	3664.4	0.070	45,006	59,386	1.567	1,796
Sweet potato	99,496	3557.0	0.036	92,517	106,475	2.024	2,711
Taro	16,900	1238.4	0.073	14,470	19,330	2.223	733
Soybean	27,493	1586.3	0.058	24,380	30,605	0.078	1,201
Vegetables	19,093	1245.1	0.065	16,650	21,536	0.414	834
Cooking banana	108,451	4,992.8	0.046	98,655	118,247	2.038	3,695
Dessert banana	41,394	1,619.6	0.039	38,216	44,571	1.637	3,474
Banana for beer	130,934	4,787.9	0.037	121,540	140,328	1.443	4,038
Cassava	200,313	6223.8	0.031	188,102	212,524	2.074	6,391
Fruits	11,202	1568.6	0.140	8,124	14,280	0.193	388

Table 3. Estimates of total area by major crop at the national level from the SAS 2019/20 Season A data, with standard error, CV, 95% confidence interval, design effect and number of sample observations

Crop	Estimate	SE	CV	95% confidence interval		DEFF	No. observations (plots)
				Lower (%)	Upper (%)		
Maize	221,521	5,366.8	0.024	210,991	232,052	0.02	8,212
Sorghum	33,295	2,740.5	0.082	27,918	38,672	0.91	689
Bean	362,015	7,273.3	0.020	347,744	376,287	0.84	9,072
Irish potato	51,516	3,165.2	0.061	45,306	57,727	1.11	1,805
Sweet potato	89,427	2,883.0	0.032	83,770	95,083	2.04	2,927
Taro	17,874	973.1	0.054	15,965	19,784	1.64	1,013
Soybean	24,677	1,311.1	0.053	22,105	27,250	0.01	1,126
Vegetables	17,879	1,271.0	0.071	15,385	20,373	0.57	756
Cooking banana	106,409	4,003.3	0.038	98,554	114,264	1.44	3,844
Dessert banana	39,688	1,524.8	0.038	36,696	42,680	1.40	3,467
Banana for beer	126,402	4,044.9	0.032	118,466	134,339	1.28	4,078
Cassava	190,447	4,881.3	0.026	180,869	200,025	1.38	6,424
Fruits	7,256	786.9	0.108	5,712	8,800	0.21	406