The Republic of Rwanda

NATIONAL INSTITUTE OF STATISTICS OF RWANDA

SEASONAL
AGRICULTURAL SURVEY
2023
ANNUAL REPORT

December 2023

SEASONAL AGRICULTURAL SURVEY

2023

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EXECUTIVE SUMMARY

This is the annual report for the Seasonal Agricultural Survey (SAS) conducted by the National Institute of Statistics of Rwanda (NISR) for the agricultural year 2022/2023, which covers three primary agricultural seasons in Rwanda. The main agricultural seasons include Season A, spanned from September 2022 to February 2023, Season B which started from March to June 2023, and Season C which started from July to September 2023.

Data sources

SAS is a primary-based data survey, combining area frame and a list frame. It covered 1,200 segments and 345 large scale farmers. It is conducted in two distinct phases: Screening and Harvesting phases. The screening phase covers grown crops data, estimates on cultivated area, and erosion control measures on plots. The harvesting phase covers interviews from farmers who grew crops in that specific season. It covered 22,971 plots and 345 large-scale farms for season A, and 23,007 plots and 333 large-scale farmers for season B, specifically targeting plots with crops ready for harvest in respective seasons. Estimates for major crops are prepared mainly to give timely and current district and national totals and averages. Survey primary data are supplemented by tea and coffee data from National Agricultural Export Development Board (NAEB) collected through the routine activities of monitoring coffee and tea production, and coffee census conducted every five years.

Key findings

A comprehensive summary of the primary indicators assessed during SAS 2023 is presented in Table 0. It includes crop production, yield estimates, land use, use of agricultural inputs and agricultural practices.

Land use

The total country land area is estimated at 2.377 million of hectares for which 1.367 million hectares (57.5% of total country land) is used for agriculture. In 2023 Season A, 1 million hectares were used for Seasonal crops, 0.5 million hectares were covered by permanent crops, while 0.126 million hectares were used for permanent pasture. Likewise, in season B, the total country land area is estimated at 2.377 million of hectares for which 1.345 million hectares (56.6% of total country land) is used for agriculture. In addition, 983,000 hectares were used for seasonal crops, 540,000 hectares were covered by permanent crops, while 124,000 hectares were used for permanent pasture.

Use of inputs

Commonly used agricultural inputs include improved seeds, organic and chemical fertilizers, as well as pesticides/fungicides. The 2023 results indicate that 37.1 percent of farmers in season A, 20.8 percent in season B, and 20.7 percent in season C used improved seeds. In season A, 87.9 percent of farmers applied organic fertilizer, 83.4 percent in season B, and 83.7 percent applied organic fertilizers in season C. In addition, 59.6 percent of famers applied inorganic fertilizer in season A, 51.6 percent of famers applied

inorganic fertilizer in season B while 74.5 percent in season C. In regard to use of pesticides, in season A of 2023, 34.5 percent of farmers applied pesticides in season A, 29.7 percent in season B and 69.3 percent in season C.

Agricultural practices

In season A of 2023, 10.3 percent of farmers practiced irrigation compared to 9.6 percent of farmers in season B and 64.6 percent in season C. In 2023 Season A, 92.1 percent of farmers practiced anti-erosion activities, compared to 91.6 percent of farmers in season B and 94.8 percent of farmers in season C.

FOREWORD

Since 2012, the National Institute of Statistics of Rwanda (NISR) is conducting the Seasonal Agricultural Survey (SAS) in order to provide timely and accurate estimates on the national crop production, cultivated and harvested area, crop yield, agricultural inputs, and agricultural practices crucial for monitoring progress on agriculture programs and policies in Rwanda. This survey is conducted in close 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).

This published report underscores the significance of the Seasonal Agricultural Survey (SAS) as a crucial tool for monitoring national agricultural programs. By providing essential information, the SAS informs policymakers and stakeholders in effectively identifying priority intervention areas, addressing key agricultural issues.

I am grateful to NISR staff and other stakeholders who worked tirelessly to ensure the 2023 Seasonal Agricultural Survey was successfully implemented. Their commitment and hard work are greatly appreciated.

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

MURANGWA Yusuf
Director General, NISR

Table 0. Summary of Seasonal Agricultural Survey main indicators

SAS main indicators	SAS 2021 Season			SAS 2022 Season			SAS 2023 Season		
	A	B	C	A	B	C	A	B	C
Cultivated area for major crops (Ha)									
Maize	236,642	80,570	-	219,683	81,339	-	226,982	93,927	
Sorghum	33,636	133,033	-	37,469	139,793	-	38,979	121,079	
Paddy rice	15,374	16,302	-	15,840	16,517	-	16,135	16,678	
Wheat	4,418	8,749	-	3,495	8,482	-	2,975	10,375	
Cassava	200,313	147,320	-	186,204	152,470	-	239,221	159,089	
Sweet potato	99,496	87,762	5,226	97,771	92,056	5,079	106,670	96,231	4,235
Irish potato	52,196	51,595	9,667	56,442	52,858	10,458	55,613	48,210	10,540
Yams & Taro	17,119	15,088	-	40,424	19,245	-	21,066	16,015	
Banana	**280,779**	**202,807**	**-**	**259,505**	**213,322**	**-**	**255,290**	**258,094**	
Cooking banana	108,451	71,262	-	96,434	73,554	-	96,262	87,735	
Dessert banana	41,394	37,668	-	36,598	37,511	-	37,009	54,000	
Banana for beer	130,934	93,877	-	126,472	102,257	-	122,019	116,359	
Bean	389,149	301,658	3,748	362,439	268,634	3,292	312,279	309,489	3,476
Pea	11,116	7,521	542	10,872	7,034	581	10,475	8,383	459
Groundnut	15,978	21,534	-	15,144	19,545	-	11,191	17,745	
Soybean	27,493	25,574	741	26,996	37,251	1,034	29,778	40,235	759
Vegetables	20,181	15,574	5,061	18,721	16,473	5,097	16,758	19,164	5,233
Fruits	11,206	8,371	-	10,914	10,373	-	10,131	10,507	
Harvested area for major crops (Ha)									
Maize	236,642	80,570	-	218,689	81,282	-	224,976	93,816	
Sorghum	33,636	133,033	-	37,469	139,792	-	38,935	121,054	
Paddy rice	15,374	16,302	-	15,779	16,474	-	16,070	16,603	
Wheat	4,418	8,749	-	3,495	8,482	-	2,891	10,375	
Cassava	42,284	47,837	-	45,418	48,494	-	45,182	49,655	
Sweet potato	99,496	87,762	5,226	97,767	86,589	5,079	90,657	83,212	4,235
Irish potato	52,196	51,595	9,667	56,442	52,844	10,458	55,583	48,205	10,540
Yams & Taro	15,612	15,017	-	13,231	15,928	-	13,371	13,621	
Banana	105,474	82,137	-	108,476	83,314	-	107,411	88,361	
Cooking banana	38,916	24,193	-	39,729	24,565	-	39,234	28,294	
Dessert banana	15,345	12,174	-	15,927	12,513	-	15,459	13,068	
Banana for beer	51,213	45,770	-	52,820	46,236	-	52,718	46,998	
Beans	389,149	301,584	3,748	362,438	268,628	3,292	312,160	309,410	3,476
Pea	11,116	7,521	542	10,872	7,034	581	10,472	8,383	459
Groundnut	15,978	21,534	-	15,118	19,545	-	11,191	17,745	
Soybean	27,493	25,574	741	26,996	37,229	1,034	29,701	40,231	759
Vegetables	20,181	15,574	5,061	18,298	15,777	5,097	16,382	17,854	5,233
Fruits	4,599	4,429	-	3,402	4,213	-	3,579	4,625	

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

SAS main indicators	2021 Season			2022 Season			2023 Season		
	A	B	C	A	B	C	A	B	C
Production for major crops (MT)									
Maize	378,641	104,041	-	348,907	109,615	-	390,879	117,613	
Sorghum	44,039	134,331	-	45,016	147,411	-	46,296	139,425	
Paddy Rice	63,950	67,808	-	67,002	68,072	-	63,688	69,940	
Wheat	4,500	9,184	-	4,019	9,858	-	3,527	13,129	
Cassava	601,291	718,584	-	637,856	737,284	-	608,693	736,686	
Sweet potato	667,346	632,614	28,790	694,320	649,445	28,980	667,598	620,185	24,595
Irish potato	463,562	393,371	81,348	486,075	331,016	90,916	454,355	326,677	83,981
Yams & Taro	93,819	107,037	-	85,245	117,647	-	85,259	106,665	
Banana	1,152,365	991,501	-	1,192,331	1,016,137	-	1,219,408	1,089,377	
Cooking banana	529,788	439,405	-	545,588	450,427	-	555,973	493,865	
Dessert banana	124,546	142,487	-	126,838	145,753	-	129,371	149,266	
Banana for beer	498,031	409,609	-	519,904	419,956	-	534,065	446,246	
Beans	258,851	229,559	3,566	235,818	210,290	3,381	197,212	244,194	3,485
Pea	8,617	6,549	469	8,247	5,373	445	6,834	4,822	461
Groundnut	6,313	10,763	-	5,445	10,172	-	4,687	8,509	
Soybean	14,237	12,194	426	13,741	19,530	785	11,771	17,288	563
Vegetables	159,669	172,936	56,979	142,604	175,205	55,355	132,699	171,530	73,504
Fruits	25,275	25,340	-	21,261	26,872	-	22,556	26,084	
Yield for major crops (Kg/ha)									
Maize	1,600	1,291	-	1,595	1,349	-	1,737	1,254	
Sorghum	1,309	1,010	-	1,201	1,055	-	1,189	1,152	
Paddy Rice	4,160	4,159	-	4,246	4,132	-	3,963	4,212	
Wheat	1,018	1,050	-	1,150	1,162	-	1,220	1,265	
Cassava	14,220	15,021	-	14,044	15,204	-	13,472	14,836	
Sweet potato	6,707	7,208	5,509	7,102	7,500	5,706	7,364	7,453	5,808
Irish potato	8,881	7,624	8,415	8,612	6,264	8,694	8,174	6,777	7,968
Yams & Taro	6,009	7,128	-	6,443	7,386	-	6,377	7,831	
Banana	10,926	12,071	-	10,992	12,196	-	11,353	12,329	
Cooking banana	13,614	18,163	-	13,733	18,336	-	14,171	17,455	
Dessert banana	8,116	11,704	-	7,964	11,648	-	8,369	11,422	
Banana for beer	9,725	8,949	-	9,843	9,083	-	10,131	9,495	
Beans	665	761	952	651	783	1,027	632	789	1,003
Pea	775	871	864	759	764	765	653	575	1,006
Groundnut	395	500	-	360	520	-	419	480	
Soybean	518	477	574	509	525	759	396	430	741
Vegetables	7,912	11,104	11,257	7,793	11,105	10,860	8,100	9,607	14,046
Fruits	5,495	5,721	-	6,250	6,378	-	6,303	5,640	

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

	SAS 2021 Season			SAS 2022 Season			SAS 2023 Season		
	A	B	C	A	B	C	A	B	C
Agricultural inputs: % of farmers who used									
Improved seeds	37.1	17.2	23.8	33.1	8.7	26.1	37.1	20.8	20.7
Organic fertilizer	67.0	56.3	73.8	69.7	57.9	82.3	87.9	83.4	83.7
Inorganic fertilizers	40.9	32.7	68.3	38.6	27.5	71.5	59.6	51.6	74.5
Pesticides	22.4	17.9	65.6	19.8	15.9	70.1	34.5	29.7	69.3
Agricultural practices: % of farmers who practiced									
Irrigation	9.2	8.3	59.1	8.2	8.0	62.9	10.3	9.6	64.6
Anti-erosion	91.0	90.8	94.9	92.1	91.4	95.9	92.1	91.6	94.8
Agricultural area									
Total land area (,000Ha)	2,377.1	2,377.1	-	2,377.1	2,377.1	-	2,377.1	2,377.1	-
Agriculture land (,000Ha)	1,436.6	1,339.8	-	1,402.0	1,393.2	-	1,367.5	1,344.6	-
Percentage of agricultural area	60.4	56.4	-	59.0	58.6	-	57.5	56.6	-
Area under permanent crops (,000Ha)	592.4	545.3	-	555.9	544.6	-	542.5	540.0	-
Area under permanent pasture (,000Ha)	131.6	132.1	-	135.2	133.0	-	126	124.3	-
Area under seasonal crops(,000Ha)	1,111.8	989.3	-	1,067.2	1,013.9	-	1,000	982.7	-
Temporary fallow land(,000Ha)	96.1	113.4	-	94.7	125.1	-	112	117.6	-
Temporarily meadow and pasture(,000Ha)	10.0	9.4	-	10.1	12.8	-	11	10.2	-

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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

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 (NST-1, 2018). 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 survey data are supplemented by administrative records collected by the National Agricultural Export Development Board (NAEB) through routine activities of monitoring coffee and tea production. Other agriculture data is obtained from MINAGRI and Rwanda Agriculture and Animal Resources development Board (RAB), district agronomists, and other partners working in the agriculture sector, including total quantity of agricultural inputs used, total agricultural exports, crop varieties grown, crop intensification program among others. Seasonal Agricultural Survey (SAS) covers three main agricultural seasons: Season A (September to February of the following year), Season B (March to June) while Season C (July-September) is a shorter season mainly for vegetables, sweet potato grown in swamps and Irish potato grown in the volcanic agro-ecological zone.

1.1. 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 current agricultural and food supply conditions and facilitate evidence-based decision making for the development of the agricultural sector. This report presents the findings of 2023 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[1] and permanent pasture.
   - Physical crop cultivated area: area occupied with crops.
   - Pasture land: area under natural grasses reserved for livestock or occupied with fodder crops;
   - Fallow land: cultivable land free for cultivation in a temporal period (less than 5 years);

2. Crop land: Cultivated land devoted to each cultivated crop.

3. Crop production: Quantity of harvested crop produce used for food, livestock 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.

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[1] *Permanent crops are crops produced from plants which last for many seasons, rather than being replanted after each harvest. Those crops are fruit trees, sugar cane, coffee, tea, banana, tree plantations, nuts trees among others).*

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 wetlands	55,807	2.20
2.2	Paddy rice wetlands	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 wetlands	12,201	0.50
9.0	Forest plantations	395,001	15.60

Source: NISR, SAS 2023

Map 1: Rwanda land classification map
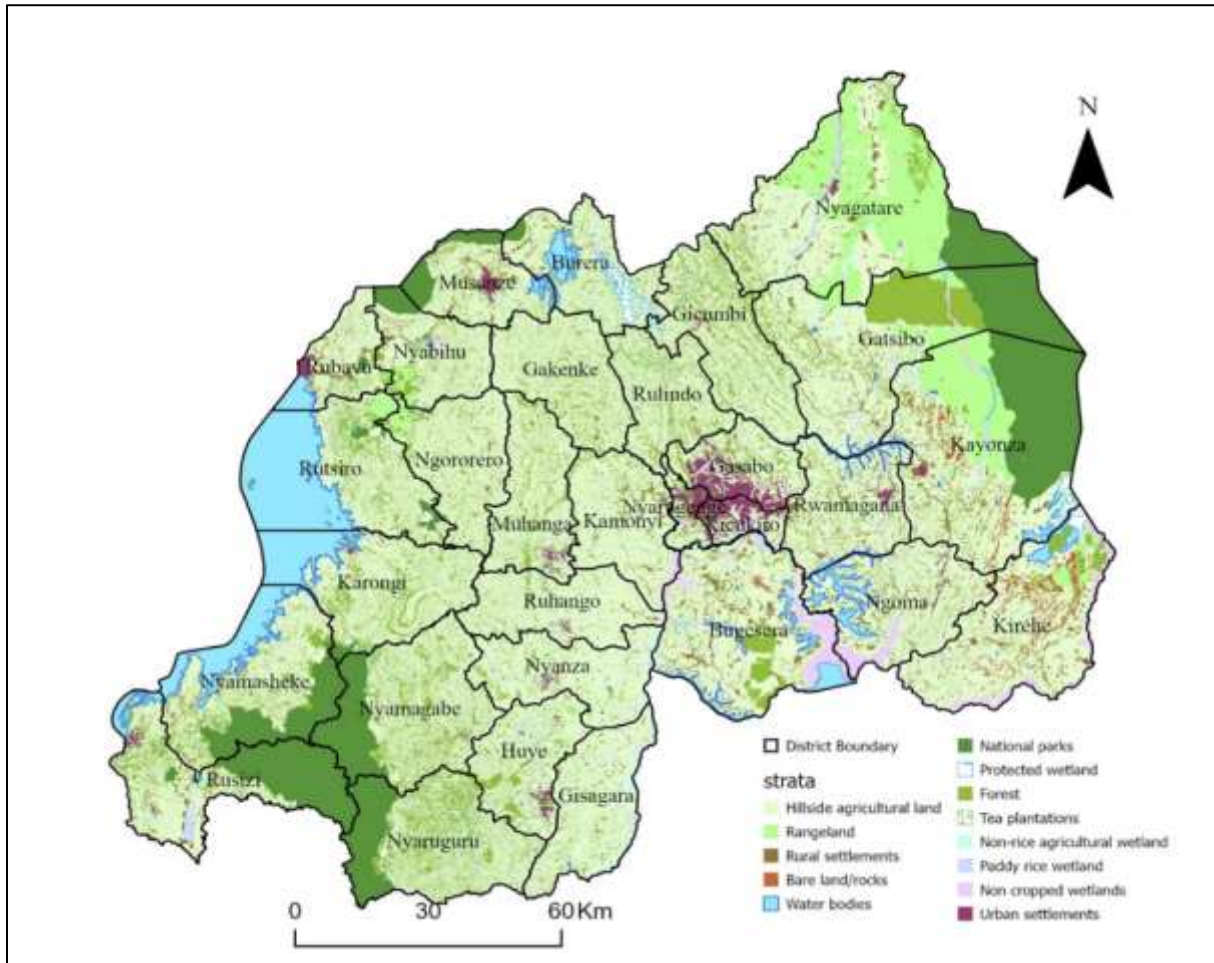
Source: NISR, SAS 2023

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

2.2.1. 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 wetlands, paddy rice agricultural wetlands, and rural settlement. The remaining land cover classes are considered as excluded from the frame of land potential for agriculture. The sampling frame is made of a set of square clusters (segments) of 9 hectares each covering the whole country. By overlapping the clusters layer with land cover classes layer, each cluster is assigned a dominant land cover class as a stratum definition, basing on a defined threshold as follow:

Table 2: List of strata

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

Source: NISR, SAS 2023

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 2023

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

District	Stratum				Total A & B	Season C
	Dominant hill crop land	Dominant wetland crops	Dominant rangeland	Mixed stratum		
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 2023

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

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
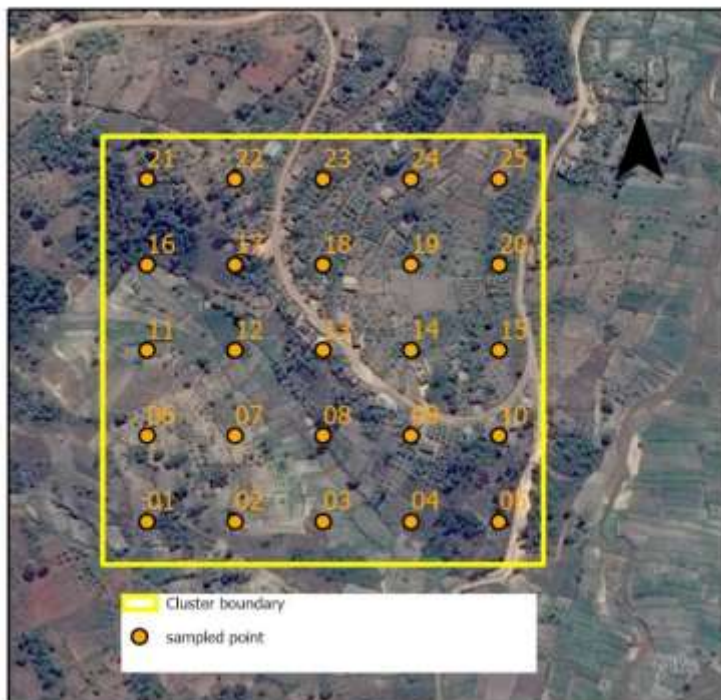
Source: NISR, SAS 2023

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

2.3.2. Sampling Errors Computation

In order to examine the precision of the most important estimates from the 2022/23 SAS data and the statistical efficiency of the agricultural area 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 use a linearized Taylor series variance estimator that takes into account the stratification and clustering in the sample design.

The SPSS Complex Samples software had been used to calculate the sampling errors and CVs for estimates of the total area of major crops from the SAS data.

The formula for the estimate of a total can be expressed as follows:

$$\hat{Y} = \sum_{h=1}^{L} \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} W'_{hi}\, y_{hij} \ ,$$

where:

L = number of strata

yhij = value of variable y for the j-th sample household in the i-th sample segment in stratum h

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

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

where:

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

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

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

The survey estimate of a ratio is defined as follows:

$$\hat{R} = \frac{\hat{Y}}{\hat{X}},$$

where $\hat{Y}$ and $\hat{X}$ are estimates of totals for variables y and x, respectively, calculated as specified previously.

In the case of a stratified two-stage sample design, means and proportions are special types of ratios. In the case of the mean, the variable X, in the denominator of the ratio, is defined to equal 1 for each unit so that the denominator is the sum of the weights. For a proportion, the variable X in the denominator is also defined to equal 1 for all units; the variable Y in the numerator is binomial and is defined to equal either 0 or 1, depending on the absence or presence, respectively, of a specified characteristic for the unit.

The variance estimator for a ratio used by SPSS Complex Samples and Stata can be expressed as follows:

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:

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

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

An example of a ratio calculated from the SAS data is average area per plot for a particular crop. In this case the variable Y in the numerator corresponds to the weighted total area for the particular crop, and the variable X in the denominator refers to the weighted total number of plots. Therefore, xhij is equal to 1 for all sample plots with that crop, and 0 for plots that do not have that crop.

The sample of segments and plots selected for SAS 2022/23 is only one of the samples that could have been selected from the same area sampling frame, using the same design and size. Each of these samples would yield results that differ somewhat from the results based on the actual sample selected. Sampling errors are a measure of the variability between the estimates from all possible samples. The extent of variability is not known exactly but can be estimated statistically from the survey data. The sampling error is measured by the standard error, which is equal to the square root of the variance of an estimate.

A practical measure of precision is the coefficient of variation (CV), which is defined as the standard error divided by the value of the estimate. Therefore, it is a relative measure of the sampling error as a percent (or proportion) of the value of the estimate. A CV within 10% generally indicates that the level of precision for the indicator is good, and a CV of 15% may still be acceptable. However, if the CV of an estimate is above 20%, the estimate can be considered less reliable.
Another useful measure of precision is the 95% confidence interval. This is calculated as follows:

$$\hat{Y} \pm 1.96 \times se(\hat{Y})$$

where:

$se(\hat{Y})$ is the standard error of the total estimate $\hat{Y}$

This 95% confidence interval gives a lower and upper limit for the estimate and indicates that there is a 95% chance that the true value of the estimate is within this range. The width of the confidence interval also indicates whether the level of precision provides useful information. If the confidence interval is too wide, the estimate will be less useful. The value following the ($\pm$) sign in the formula is referred to as the margin of error, which is another measure of precision related to the width of the confidence interval.

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. Clustering generally increases the design effect due to the intra-cluster 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 presence of clustering typically increases the design effect, owing to the intra-cluster correlation of plots within the segments. Simultaneously, the land-use stratification of the segments tends to decrease the design effects, as it proves to be more efficient than a simple random sample. This dual consideration of both factors provides a comprehensive assessment of the efficiency of the sample design in capturing the nuances of the area under cultivation. 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 2022/23 data are presented in Table 77 to Table 79 on the Annexes.

2.4. Data Collection design

Data collection for SAS 2023 was carried out in two distinct phases (screening and harvest) within each of the three regular seasons. The initial phase, called the screening activity (post-planting phase), involved marking plots with sampled points within selected segments to gather information on land use, cultivated land area, and crop types. The second phase focused on collecting production data by interviewing small-scale farmers in selected plots, as well as engaging with all Large-Scale Farmers (LSF). For the successful execution of SAS data collection, 137 Enumerators and 23 Team Leaders were involved and underwent thorough training before each season's data collection. Additionally, NISR staff provided regular supervision during data collection to maintain data quality.

2.4.1. Time frame

The SAS data collection covered three regular agricultural seasons, as illustrated in figure1. Specifically, for the 2023 season A, data collection activities started on 4th December 2022 to 16th February 2023, season B, on the other hand, started on May 2 and concluded on June 30, 2023. Throughout both seasons, data were collected in 1,200 segments and 336 large-scale farmers' holdings across the country. Additionally, Season C data collection took place from September 10 to September 30, 2023, covering 2,143 sites with the potential for growing Season C crops, along with 513 segments.

Figure 1: Agricultural seasons calendar

Season/Month	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept
Season A														
Season B														
Season C														
Legend:		Sowing			Growing			Harvesting						
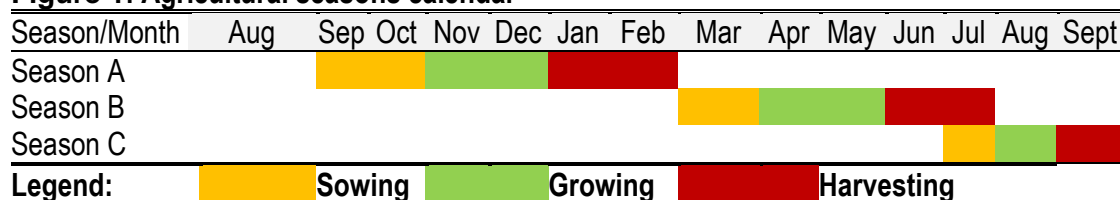
Source: NISR, SAS 2023

2.5. Data collection tools and materials

SAS used two questionnaires, the Screening and Plot questionnaires, digitalized using the CS Entry application (version 7.7):

- **Screening Questionnaire:** Used to collect information for the delineated plot mainly related to land use, plot area and cultivated crops.
- **Plot Questionnaire:** Used during farmer interviewing to collect information on the sampled plots mainly related to crop production, agricultural inputs and practices.

Besides, there two other GIS-based applications used:

- **Collector:** GIS-based application 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 data for LSF during screening activity.

Furthermore, there are other field materials used including, instructions' manual, android tablets, charger, power banks, pens, notebooks, pencils, calculator, weighing scales as well as Global Positioning System (GPS).

2.5.1. Field data collection procedures

The SAS data collection is carried out into two phases:

- **Screening activity:** During the screening activity, enumerators use GPS to navigate to the sampled point within the segment. Arriving at the sampled point, enumerators identify plot boundary with the guidance 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 crop production data 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.

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, Mandaline, Jack fruits, Sugar, apple 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 2023 seasons A, B and C, mainly related to land (physical land use, cultivated area, and harvested area), crop production and yield, agricultural inputs as well as agricultural practices.

3.1. Agricultural land use (,000Ha) for 2023 Season A and B

Figure 2: *Agricultural land use for Season A and B 2023 (in thousands of hectares)*
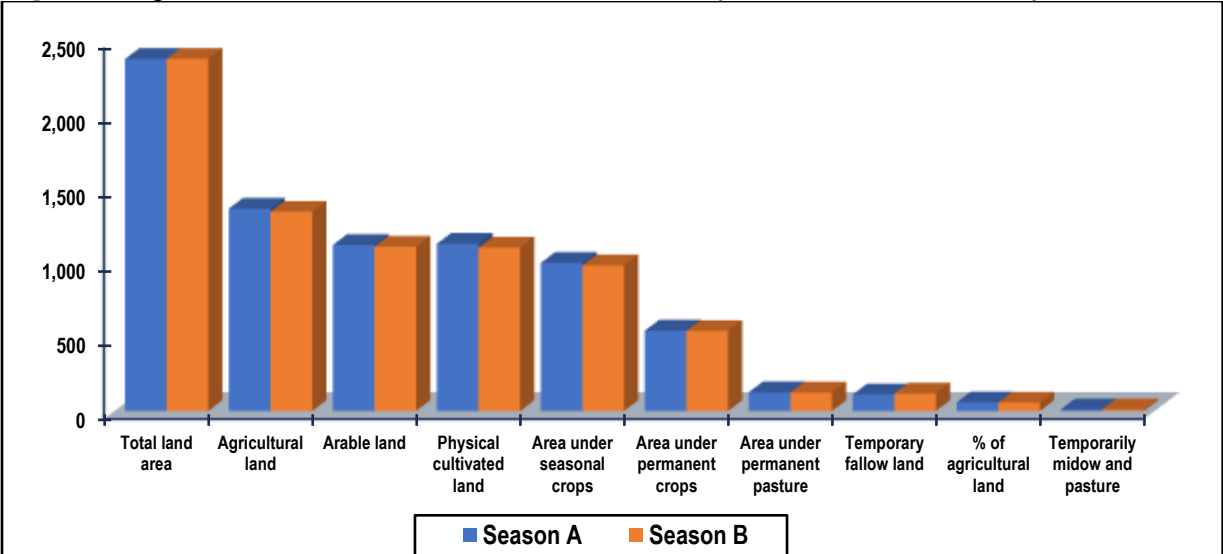
Source: NISR, SAS 2023

The total country land area is estimated at 2.377 million of hectares for which 1.367 million hectares (57.5% of total country land) is used for agriculture. For season A, out of the total agricultural land, 1 million hectares were used for seasonal crops, 0.5 million hectares were covered by permanent crops, while 0.126 million hectares were used for permanent pasture. For season B, 1.345 million hectares (56.6% of total country land) is used for agriculture, 0.983 million hectares were used for seasonal crops, 0.540 million hectares were covered by permanent crops.

3.2. Crop area, production and yield for major crops

Maize:
- The cultivated area for maize was estimated at 226,982 hectares in 2023 season A, an increase of 3.3 percent when compared to the same season of 2022. In season B, the cultivated area for maize was estimated at 93,927 hectares, an increase of 15 percent when compared to season B of 2022.
- The production of maize was estimated at 390,879 metric tons in 2023 season A, an increase of 12 percent when compared to season A of 2022. In season B, the production of maize was estimated at 117,613 metric tons an increase of 7.3 percent when compared to season B of 2022.

- The average yield of maize was 1.7 tons per hectare, with an average yield of 1.7 tons and 4.3 tons for small scale farmers and large-scale farmers respectively in season A of 2023. In season B, the national average maize yield was 1.3 tons per hectare, with an average yield of 1.2 tons and 4.1 tons for small scale farmers and large-scale farmers respectively (See Tables 10-24)

Sweet potato:

- The cultivated area for sweet potato was 106,670 hectares in season A of 2023, an increase of 9.1 percent when compared to the same season of 2022. In season B, sweet potato cultivated area was 96,231 hectares, an increase of 5 percent when compared to season B of 2022. In season C, sweet potato cultivated area 4,235 hectares, an decrease of 16.6 percent when compared to the same season of 2022.
- The production of sweet potato was estimated at 667,598 metric tons in season A of 2023, a decrease of 3.8 percent when compared to the same season of 2022. In season B, the production of sweet potato was estimated at 620,185 metric tons, a decrease of 4.5 percent when compared to the same season of 2022. In season C, the production sweet potato was estimated at 24,595 hectares, a decrease of 15 percent when compared to the same season of 2022.
- The average yield of sweet potato was 7.36 tons per hectare in season A of 2023, 7,45 tons per hectare in season B and 5,8 tons per hectare in season C (See district details in table 10-24).

Irish potatoes:

- The cultivated area of Irish potatoes was estimated at 55,613 hectares in season A of 2023, a decrease of 1.5 percent when compared to the same season of 2022. In season B, the cultivated area of Irish potatoes was estimated at 48,210 hectares a decrease of 9.1 percent when compared to the same season of 2022. In season C, the cultivated area under Irish potatoes was 10,540 hectares, an increase of 0.8 percent when compared to the same season of 2022.
- The production of Irish potato was estimated at 454,355 metric tons in season A of 2023, a decrease of 6.5 percent when compared to the same season of 2022. In season B, the production of Irish potato was estimated at 326,677 metric tons, a decrease of 1.3 percent when compared to the same season of 2022. In season C, the production of Irish potato was estimated at 83,981 metric tons, a decrease of 8 percent when compared to the same season in 2022.
- The average yield of Irish potato was 8.2 tons per hectare in season A of 2023, with an average yield of 8.2 and 12.2 tons per hectare for small scale farmers and large-scale farmers respectively. In season B, the average yield of Irish potato was 6,7 tons per hectare, with an average yield of 6,7 and 15,9 tons per hectare for small scale farmers and large-scale farmers respectively. In season C, the average yield for Irish potatoes was estimated at 7,9 tons per hectare. (See district details in table 10-24).

Cassava:

- The cultivated area for cassava was estimated at 239,221 hectares in season A of 2023, an increase of 28.5 percent when compared to the same season of 2022. In season B, the cultivated area for cassava was estimated at 159,089 hectares an increase of 4 percent when compared to season B of 2022.

- The harvested area was estimated at 45,182 hectares in season A of 2023 and 49,655 hectares in season B of 2023.
- The production of cassava was 608,693 metric tons in season A of 2023, a decrease of 4.6 percent when compared to the same season of 2022. In season B, the production of cassava was estimated at 736,686 metric tons, a decrease of 0.1 percent when compared to season B of 2022.
- The average yield of cassava was 13.5 tons per hectare in season A of 2023 and 14,8 tons per hectare in season B of 2023. (See district details in Tables 10-24)

Paddy rice:
- The cultivated area for paddy rice was estimated at 16,135 hectares in season A of 2023, an increase of 1.9 percent when compared to the same season of 2022. In season B, the cultivated area for paddy rice was 16,678 hectares an increase of 1 percent when compared to season B of 2022.
- The production of paddy rice was estimated at 63,688 metric tons in season A of 2023, an decrease of 4.9 percent when compared to the same season of 2022. In season B, the production of paddy rice was estimated at 69,940 metric tons a decrease of 2.7 percent when compared to season B of 2022.
- The average yield of paddy rice was 3,96 tons per hectare, in season A of 2023, with an average yield of 2.3 tons per hectare for small scale farmers and 3,98 tons per hectare large-scale farmers. In season B, the average yield of paddy rice was 4.2 tons per hectare, with an average yield of 2.2 per hectare for small scale farmers and 4.2 tons per hectare for large-scale farmers (See district details in Tables 10-24).

Banana:
- The cultivated area for banana was estimated at 255,290 hectares in season A of 2023, a decrease of 1.6 percent when compared to season A of 2022. In the same season, the harvested area was estimated at 107,411 hectares. In season B, the cultivated area for banana was estimated at 258,094 hectares, an increase of 21 percent when compared to Season B of 2022. In the same season, the harvested area was estimated at 88,361 hectares.
- The production of banana was estimated at 1,219,408 metric tons in season A of 2023, an increase of 2.3 percent when compared to season A of 2022. In season B, the production of banana was estimated at 1,089,377 metric tons, an increase of 7.2 percent when compared to same season fo 2022.
- The average yield of banana was 11.4 tons per hectare in season A and 12,3 tons per hectare in season B (See district details in Tables 10-24).

Beans:
- The cultivate area for beans was estimated at 312,279 hectares in season A of 2023 a decrease of 13.8 percent when compared to season A of 2022. In season B, the cultivated area for beans was estimated at 309,489 hectares, an increase of 15 percent when compared to season B of 2022. In season C, the cultivated area for beans was 3,476 hectares, an increase of 5.6 percent when compared to season C of 2022.

- The production of beans was estimated at 197,212 metric tons in season A of 2023, a decrease of 16.4 percent when compared to season A of 2022. In season B, the production of beans was estimated at 244,194 metric tons, an increase of 16.1 percent when compared to season B of 2022 while in season C, the production of beans was estimated at 3,485 metric tons, an increase of 3 percent when compared to the same season of 2022.

- The average yield of beans was 632 kilograms per hectare in season A, with an average yield of 632 per hectare for small scale farmers and 685 kilograms per hectare large-scale farmers. In season B, the average yield of beans was 789 kilograms per hectare, with an average of 786 kilograms per hectare for small scale farmers and 2,040 kilograms per hectare for large-scale farmers. In season C, the average yield was estimated at 1,003 kilograms per hectare. (see district details in table 10-24).

3.3. Agricultural inputs

This section highlights the use of agricultural inputs. Agricultural inputs include seeds, organic and inorganic fertilizers, and pesticides/fungicides. The survey results are presented in terms of percentage of farmers who applied such agricultural inputs throughout the agricultural year.

3.3.1. Use of seeds

Figure 3: Use of improved seeds (%)
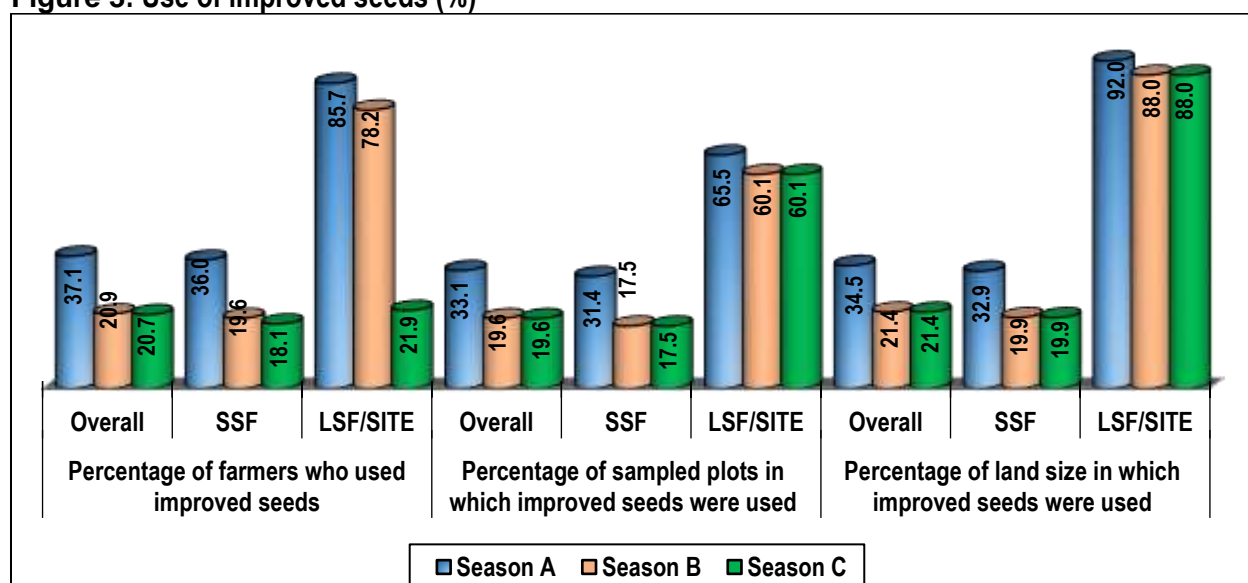
Source: NISR, SAS 2023

Figure 3 shows that 37.1 percent of farmers used improved seeds in season A of 2023 compared to 20.9 percent in season B, and 20.7 percent in season C. In terms of farmer categories, 36 percent of small-scale farmers (SSF) and 85.7 percent of large-scale farmers (LSF) used improved seeds in season A. In season B, 19.6 percent of small-scale farmers and 78.2 percent of large-scale farmers used improved seeds while in season C, 18.1 percent of small-scale farmers and 21.9 percent large-scale farmers used improved seeds.

Agro-dealers and NGOs/companies were the primary sources for improved seeds across seasons of 2023. (See district details in table 31-40).

3.3.2. Use of fertilizers

Figure 4: Percentage of farmers who applied fertilizers.
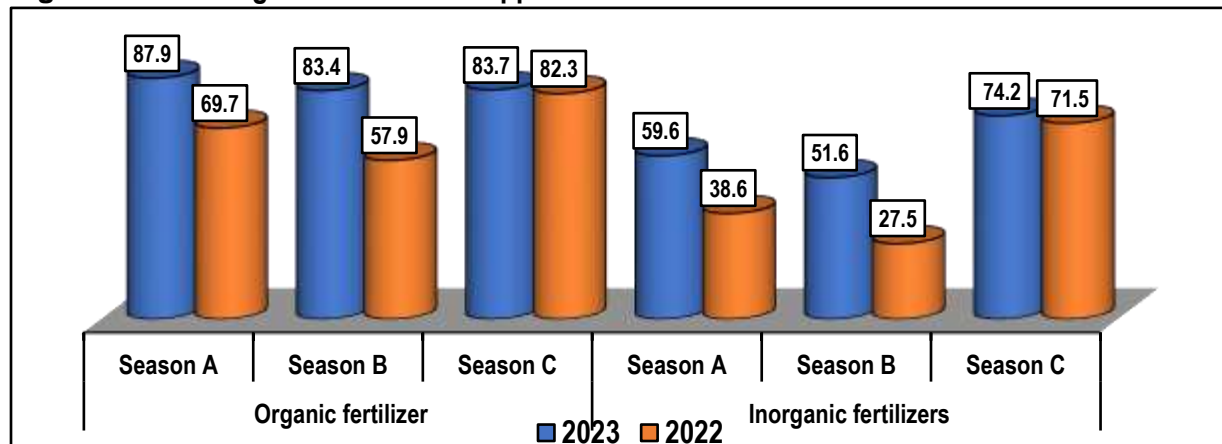
Source: NISR, SAS 2023

In season A of 2023, 87.9 percent of farmers applied organic fertilizers, with 88.2 percent of small-scale farmers and 74.2 percent of large-scale farmers. In season B, 83.4 percent of farmers used organic fertilizers, with 83.7 percent of small-scale farmers and 69.8 percent of large-scale farmers, whereas 83.7 percent of farmers used organic fertilizers in season C.

In regard to inorganic fertilizers, in season A of 2023, 59.6 percent of famers applied inorganic fertilizers with 59 percent of small-scale farmers and 87.9 percent of large-scale farmers. In season B, 51.6 percent of famers applied inorganic fertilizers with 50.9 percent of small-scale farmers and 84.2 percent of large-scale farmers in season B, whereas 74.2 percent of farmers used inorganic fertilizers in season C (See district details in table 41-54)

3.3.3. Use of pesticides

Figure 5: Use of pesticides (%)
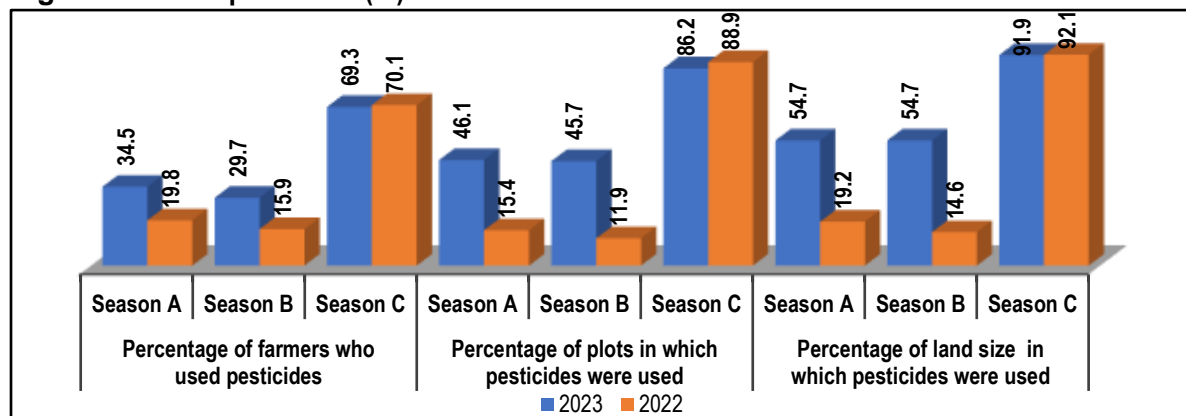
Source: NISR, SAS 2023

In season A of 2023, 34.5 percent of farmers applied pesticides, with 33.2 percent of small-scale farmers and 86.3 percent of large-scale farmers. In season B, 29.7 percent of farmers applied pesticides with 28.6 percent of small-scale farmers and 79.9 percent of large-scale farmers applied pesticides respectively. Pesticides use was relatively higher in season C, by 69.3 percent of farmers (See details in Tables 55-59).

3.4. Agricultural practices

Agricultural practices assessed include irrigation, mechanisation, erosion control measures and agroforestry adopted by farmers during the SAS 2023. The results are presented in terms of the percentage of farmers who applied such practices.

3.4.1. Irrigation practices

Figure 6: Farmers who practiced irrigation (%)
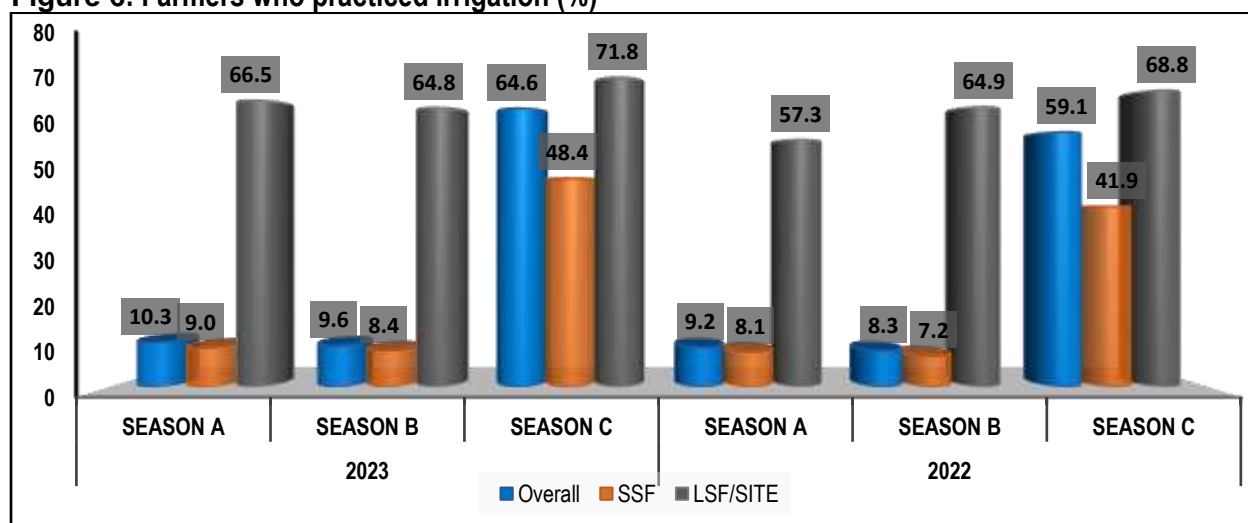
Source: NISR, SAS 2023

In season A of 2023, 10.3 percent of farmers practiced irrigation, compared to 9.6 percent of farmers in season B and 64.6 in season C. During season A, irrigation was practiced by 9 percent of small-scale farmers and 66.5 percent for large-scale farmers, while in season B, irrigation was practiced by 8.4 percent of small-scale farmers and 64.8 percent for large-scale farmers in season B. In terms of irrigation types, 53.6 percent practiced the modern irrigation in season A, 54.3 percent in season B while traditional techniques were predominantly used during season C (75.9%) (See details in Tables 60-73)

3.4.2. Mechanisation

Figure 7: Farmers who used any mechanical equipment (%)
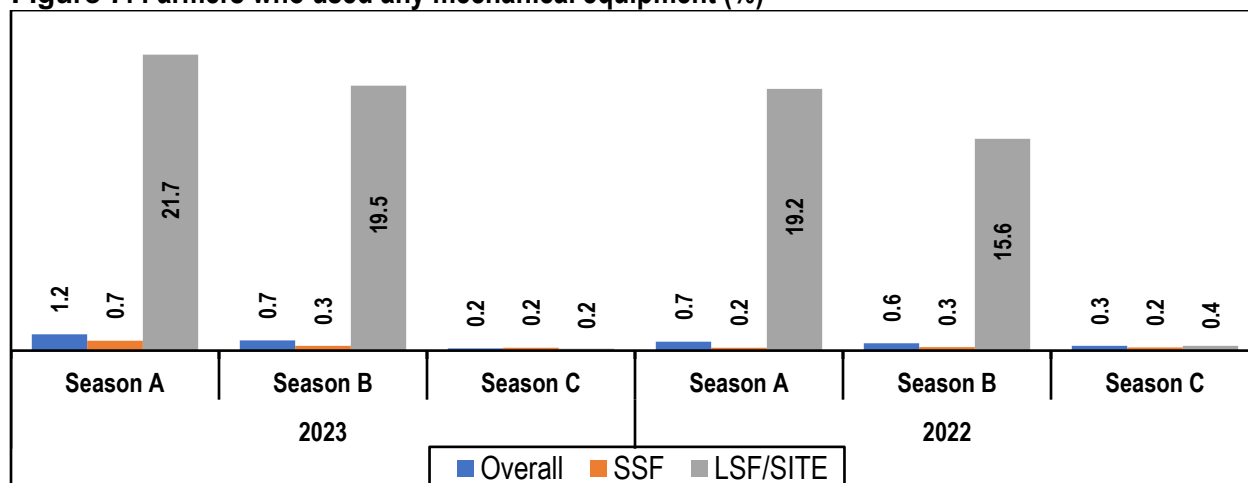
Source: NISR, SAS 2023

In 2023, 1.2 percent of farmers used mechanical equipment for agriculture activities in season A compared to 0.7 percent of farmers in season B and 0.2 in season C. Regarding to farmer types 21.7 percent of large-scale farmers used mechanical equipment for agriculture in season A compared to 19.5 percent of large-scale farmers in season B (See details in Tables 60-73)

3.4.3. Erosion control measures

Figure 8: Farmers who protected land against erosion (%)
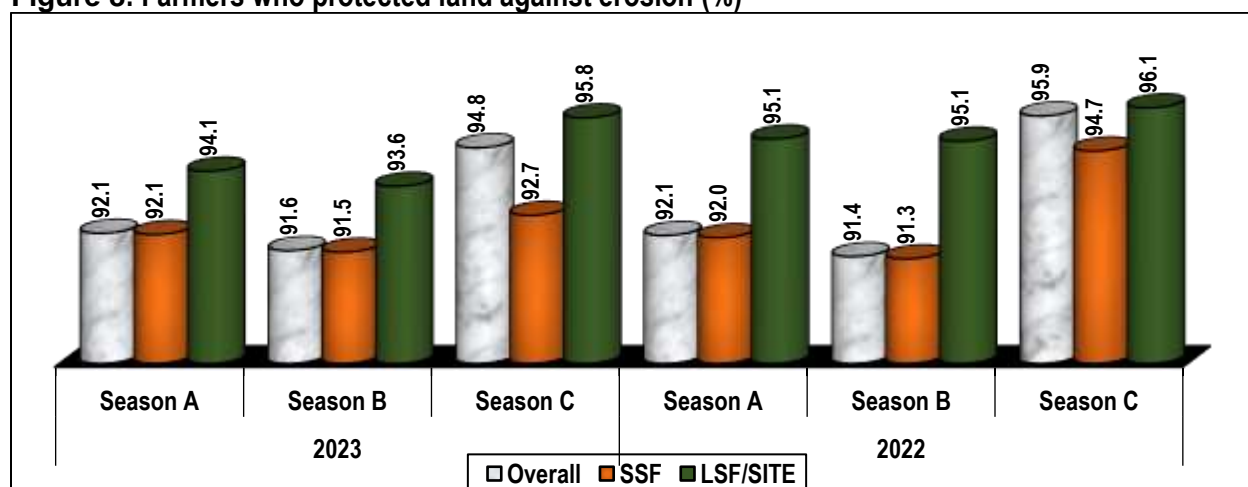
Source: NISR, SAS 2023

In the season A of 2023, 92.1 percent of farmers practiced anti-erosion activities compared to 91.6 percent of farmers in season B, and 94.8 percent in season C. Cover plants was the most used type of anti-erosion with 56.7 percent of farmers in season A, 58.9 percent of farmers in B and 38.4 percent in season C (See details in Tables 60-73).

3.5. Gross Value Added (GVA)

The Gross Value-Added value of different crops is shown in constant 2017 prices. Results show the Gross Value Added per hectare for crops such as paddy rice, cassava, irish potato, pea and soya beans, have decreased in 2023 compared to 2022.

Table 5: Main crops GVA in constant 2017 prices (Billion Frw /ha)

Crops	2016	2017	2018	2019	2020	2021	2022	2023
Maize	402,114	309,457	365,527	373,066	389,059	387,754	390,303	407,284
Sorghum	274,987	296,000	298,689	274,485	280,068	299,996	302,122	323,073
Paddy rice	1,304,073	1,633,520	1,492,544	1,718,397	1,691,890	1,799,480	1,799,248	1,757,086
Wheat	237,012	282,068	306,210	329,278	289,132	303,795	321,878	348,790
Cassava	177,496	305,145	1,377,459	1,629,739	1,642,935	1,653,322	1,648,255	1,597,292
Sweet potato	808,499	784,244	899,497	890,254	932,227	903,969	950,888	966,903
Irish potato	1,230,891	1,713,831	1,444,199	1,700,490	1,544,227	1,551,234	1,425,235	1,421,940
Cooking banana	185,884	199,565	3,715,919	3,623,122	3,180,479	3,089,892	3,119,720	3,130,968
Dessert banana	122,667	117,981	2,163,072	1,481,763	1,162,979	1,162,822	1,132,818	1,154,426
Banana for beer	108,416	102,332	1,122,757	879,672	931,198	958,935	974,510	1,009,727
Beans	401,317	391,605	410,264	391,121	318,642	334,063	333,464	334,969
Pea	1,086,082	1,060,761	964,611	1,049,992	1,365,309	1,355,647	1,284,987	1,059,662
Groundnut	177,694	187,362	221,069	183,218	187,008	186,608	185,329	187,590
Soybean	55,189	52,694	48,631	61,358	57,232	55,754	60,963	48,952

Source : NISR, SAS 2023

MAIN TABLES

Table 6:Season A 2023_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	44.2	4.7	5.2	4.0	3.0	0.6	0.1	-
Gasabo	42.7	19.6	45.9	18.0	16.5	14.6	7.5	2.7	0.7	0.4
Kicukiro	16.6	5.4	32.5	4.5	4.4	3.9	1.9	0.6	0.1	0.3
Nyanza	67.1	43.2	64.4	38.2	37.6	32.3	14.7	5.5	0.3	0.0
Gisagara	67.3	39.4	58.6	36.7	34.7	31.9	14.0	4.7	0.1	-
Nyaruguru	100.7	34.4	34.2	29.6	29.5	23.9	11.5	4.9	0.9	-
Huye	58.1	32.5	55.9	29.7	30.2	27.2	13.5	2.3	0.2	0.0
Nyamagabe	109.1	44.3	40.6	38.3	38.2	32.1	12.0	6.0	0.1	-
Ruhango	62.6	44.6	71.3	38.4	38.6	31.9	14.1	6.0	0.5	-
Muhanga	64.4	39.5	61.3	35.1	35.1	29.9	18.0	4.3	0.8	0.1
Kamonyi	65.8	44.4	67.5	38.8	39.5	33.4	18.5	4.9	0.5	0.1
Karongi	78.9	42.4	53.8	35.0	35.8	28.0	15.7	6.5	0.4	0.1
Rutsiro	66	39.4	59.8	27.6	29.4	23.2	17.0	4.3	0.2	5.8
Rubavu	33.8	24.7	73.1	23.2	23.0	21.3	5.8	1.4	0.8	0.3
Nyabihu	53.6	37.6	70.1	33.3	29.9	29.6	6.1	3.6	0.3	4.0
Ngororero	67.5	45.1	66.9	38.0	37.5	32.4	18.0	5.5	0.1	2.1
Rusizi	91.4	36.3	39.8	34.3	34.2	32.0	11.4	2.2	0.1	-
Nyamasheke	94.8	38.8	40.9	30.0	36.8	28.0	21.3	2.0	-	-
Rulindo	56.7	36.0	63.4	32.0	32.0	28.8	13.0	3.0	0.2	0.9
Gakenke	70.1	50.1	71.5	44.2	46.8	40.8	21.2	3.3	0.2	0.1
Musanze	50.9	29.8	58.6	29.1	28.4	27.7	4.2	1.4	0.0	-
Burera	58.4	38.0	65.1	37.7	35.9	35.4	3.6	2.1	0.2	-
Gicumbi	82.5	48.7	59.0	45.9	44.5	40.4	12.5	4.2	1.3	-
Rwamagana	65.3	45.3	69.4	39.6	42.3	37.6	22.7	1.4	0.6	1.6
Nyagatare	191.1	143.6	75.2	72.6	73.3	69.5	87.2	2.4	0.7	67.9
Gatsibo	153.6	72.5	47.2	57.4	63.4	54.5	37.3	2.8	0.0	6.2
Kayonza	179.2	89.2	49.8	62.3	59.8	57.1	43.7	5.1	0.1	24.2
Kirehe	114.9	71.9	62.6	59.2	61.7	55.0	31.1	4.1	0.2	6.2
Ngoma	80.5	51.5	64.0	46.9	47.1	42.7	19.0	3.8	0.4	0.5
Bugesera	120.4	72.4	60.2	61.0	57.5	50.6	23.2	9.8	0.6	5.1
National	2,377	1,367	57	1,121	1,129	1,000	542	112	11	126

Source: NISR, SAS 2023

Table 7:Season B 2023_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	5.4	41.0	4.6	4.9	4.1	2.8	0.4	0.1	0.0
Gasabo	42.7	19.1	44.8	17.7	16.9	15.3	7.3	1.8	0.6	0.4
Kicukiro	16.6	5.6	33.5	4.9	4.5	4.1	1.8	0.8	0.1	0.3
Nyanza	67.1	42.6	63.5	40.1	39.1	36.4	15.0	3.4	0.3	0.1
Gisagara	67.3	38.8	57.6	37.1	35.5	33.7	14.4	3.3	0.1	-
Nyaruguru	100.7	34.1	33.8	29.7	29.9	24.9	11.6	4.1	0.7	0.1
Huye	58.1	31.7	54.6	30.3	29.5	28.0	13.6	2.2	0.2	-
Nyamagabe	109.1	43.3	39.7	38.2	37.2	31.7	12.0	6.1	0.4	0.0
Ruhango	62.6	46.3	74.0	42.2	40.8	36.0	13.8	5.6	0.8	-
Muhanga	64.4	38.7	60.0	33.5	32.4	26.8	18.1	6.3	0.5	-
Kamonyi	65.8	42.8	65.0	37.9	39.0	33.8	17.2	3.7	0.4	0.1
Karongi	78.9	41.8	53.0	34.9	33.9	26.6	15.5	8.0	0.4	-
Rutsiro	66	39.1	59.2	27.2	25.2	19.6	17.4	7.6	-	6.2
Rubavu	33.8	23.2	68.6	21.7	22.0	20.5	5.7	0.8	0.6	0.4
Nyabihu	53.6	34.7	64.8	30.4	24.0	23.7	6.0	6.7	0.2	4.0
Ngororero	67.5	44.4	65.7	37.8	35.4	30.9	17.5	6.7	0.2	2.3
Rusizi	91.4	35.9	39.3	33.2	34.2	31.3	13.2	1.7	0.1	-
Nyamasheke	94.8	39.2	41.4	30.0	37.2	27.9	21.3	2.0	-	-
Rulindo	56.7	36.2	63.8	32.5	32.3	29.3	12.9	3.0	0.3	0.8
Gakenke	70.1	48.7	69.5	41.1	41.8	33.9	21.1	6.8	0.3	0.1
Musanze	50.9	27.8	54.5	26.9	25.3	24.4	4.0	2.5	0.0	-
Burera	58.4	35.4	60.6	35.0	31.6	31.1	4.1	3.7	0.2	-
Gicumbi	82.5	49.1	59.6	47.0	45.0	41.7	12.3	4.1	1.3	-
Rwamagana	65.3	45.3	69.4	40.0	41.6	37.4	22.4	2.0	0.5	1.7
Nyagatare	191.1	140.6	73.6	71.9	73.0	68.9	84.7	2.3	0.7	65.3
Gatsibo	153.6	72.6	47.3	57.5	62.7	54.2	37.0	3.2	0.1	6.6
Kayonza	179.2	89.7	50.1	62.8	61.0	58.3	43.7	4.5	0.1	24.2
Kirehe	114.9	70.6	61.5	57.7	63.1	54.9	29.7	2.7	0.1	4.9
Ngoma	80.5	50.9	63.3	44.4	46.5	40.7	20.2	3.3	0.4	1.1
Bugesera	120.4	70.9	58.9	61.0	57.3	52.5	23.6	8.0	0.6	5.7
National	2,377	1,344.6	56.6	1,109.3	1,102.7	982.7	540.0	117.6	10.2	124.3

Source: NISR, SAS 2023

Table 8:Season A 2023_Area under agricultural practices (ha)

District	Modern irrigated agricultural land	Agricultural area under erosion control	Agricultural area under agroforestry	Agricultural area under fertilizers application	
				Inorganic fertilizer	Organic fertilizer
Nyarugenge	32	2,757	2,182	484	2,820
Gasabo	241	13,737	10,696	3,755	10,931
Kicukiro	152	2,012	2,911	1,677	2,445
Nyanza	777	29,094	14,149	5,448	19,289
Gisagara	1,598	25,675	14,956	11,576	21,999
Nyaruguru	470	29,505	11,323	13,771	20,706
Huye	1,079	25,704	14,129	8,198	19,045
Nyamagabe	19	37,397	14,158	11,295	25,941
Ruhango	1,100	33,613	12,978	4,522	20,014
Muhanga	436	30,899	13,172	7,606	21,807
Kamonyi	451	33,568	13,202	4,546	23,325
Karongi	185	31,175	18,472	10,781	21,087
Rutsiro	-	28,189	14,623	9,294	17,769
Rubavu	-	20,169	7,977	9,215	9,726
Nyabihu	-	32,499	21,563	15,347	18,389
Ngororero	59	36,398	17,403	12,770	28,698
Rusizi	946	22,759	21,740	17,849	19,910
Nyamasheke	375	33,436	20,138	16,837	23,286
Rulindo	351	31,777	17,748	11,437	25,626
Gakenke	152	47,616	23,591	23,338	36,946
Musanze	-	25,044	12,175	11,042	17,517
Burera	56	32,733	13,699	17,801	27,702
Gicumbi	-	42,975	11,326	11,047	35,768
Rwamagana	834	35,059	28,032	15,848	28,058
Nyagatare	3,252	72,292	50,711	34,548	31,372
Gatsibo	1,970	59,789	42,345	21,450	45,692
Kayonza	3,199	45,465	39,233	18,951	27,588
Kirehe	2,468	43,697	35,070	28,897	37,747
Ngoma	904	31,603	24,671	18,915	27,732
Bugesera	3,193	41,564	38,617	17,696	23,386
National	**24,301**	**978,198**	**582,989**	**395,944**	**692,320**

Source: NISR, SAS 2023

Table 9:Season B 2023_Area under agricultural practices (ha)

District	Modern irrigated agricultural land (Ha)	Agricultural area under erosion control	Agricultural area under agroforestry trees	Agricultural area under fertilizers application	
				Inorganic fertilizer	Organic fertilizer
Nyarugenge	18	2,179	2,109	339	2,428
Gasabo	264	12,293	8,910	3,188	10,037
Kicukiro	114	1,790	2,619	1,718	1,865
Nyanza	1,169	29,295	12,456	6,261	19,907
Gisagara	1,943	19,616	15,076	8,760	17,810
Nyaruguru	279	29,102	9,999	13,619	20,377
Huye	721	24,200	12,664	6,649	17,867
Nyamagabe	80	37,504	13,009	10,682	26,450
Ruhango	896	31,095	6,951	4,167	21,005
Muhanga	148	30,657	13,343	5,253	19,464
Kamonyi	436	30,946	11,616	3,914	20,871
Karongi	150	31,431	13,382	8,254	19,865
Rutsiro	-	23,505	13,177	8,220	14,332
Rubavu	-	18,506	9,345	10,560	9,323
Nyabihu	-	29,697	16,672	15,787	16,405
Ngororero	117	36,114	18,967	12,345	26,830
Rusizi	1,483	19,336	17,198	10,326	16,427
Nyamasheke	521	33,665	18,098	13,948	21,574
Rulindo	174	33,120	15,628	10,527	24,508
Gakenke	-	45,838	16,339	18,215	29,546
Musanze	-	22,857	8,155	12,452	16,092
Burera	56	29,445	11,871	13,003	21,582
Gicumbi	-	42,644	10,329	9,842	34,229
Rwamagana	570	31,548	22,043	10,517	18,077
Nyagatare	2,709	77,192	42,268	40,362	27,622
Gatsibo	1,554	62,988	37,115	20,180	40,067
Kayonza	2,651	47,096	28,821	18,269	20,267
Kirehe	2,581	42,129	27,936	13,841	21,292
Ngoma	967	30,197	21,195	5,900	13,962
Bugesera	2,870	36,041	34,986	17,796	21,822
National	**22,470**	**942,025**	**492,293**	**334,893**	**591,903**

Source: NISR, SAS 2023

Table 10: Season A 2023_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	687	18	-	-	-	668	293	73	33	1,985	683	370	931	2,381	2,367	14	-	10	115	234	48	59	447	7,050
Gasabo	2,927	-	254	-	-	5,274	1,459	554	83	4,911	2,133	1,055	1,723	7,197	6,771	426	51	391	693	602	59	589	381	25,424
Kicukiro	1,125	-	46	-	7	631	538	11	264	1,174	592	172	410	1,190	1,188	2	3	21	210	69	118	52	210	5,668
Nyanza	5,234	506	553	-	17	16,271	2,329	258	807	8,415	2,635	1,450	4,330	10,907	9,486	1,421	99	389	1,366	623	326	233	1,288	49,621
Gisagara	6,464	853	2,254	-	47	8,501	2,811	274	621	9,467	2,471	1,811	5,184	12,566	11,922	644	59	399	2,175	282	815	110	522	48,219
Nyaruguru	4,984	-	-	-	-	8,328	4,723	1,883	589	5,498	1,624	1,272	2,603	7,152	1,525	5,628	249	-	858	259	129	813	4,835	40,300
Huye	4,374	-	981	-	93	15,715	3,058	990	725	7,384	2,362	1,647	3,375	11,340	8,452	2,888	61	50	1,963	352	53	200	1,545	48,885
Nyamagabe	5,044	-	23	41	13	7,447	7,065	3,807	1,108	7,009	1,731	607	4,671	8,846	2,824	6,021	1,376	31	1,112	265	176	125	3,278	46,765
Ruhango	3,687	96	878	-	59	19,415	1,830	189	863	8,818	2,246	1,812	4,760	8,341	6,904	1,437	75	380	2,263	380	45	456	1,803	49,578
Muhanga	2,421	-	137	-	198	8,281	5,403	332	2,498	16,936	3,045	1,889	12,002	7,165	3,421	3,744	23	23	1,414	487	147	745	850	47,060
Kamonyi	4,976	-	197	-	-	11,120	3,234	733	572	10,663	1,636	1,531	7,496	10,865	9,308	1,558	11	368	2,545	937	889	455	2,203	49,768
Karongi	7,031	-	-	52	-	9,343	5,279	1,191	1,934	10,552	2,529	1,252	6,771	5,783	1,515	4,268	170	-	1,001	620	166	432	3,921	47,475
Rutsiro	6,550	-	-	250	-	1,397	4,043	3,217	1,213	7,146	1,964	1,126	4,055	2,919	557	2,362	422	-	1,085	202	678	217	4,059	33,398
Rubavu	2,042	218	-	-	-	735	569	5,792	144	3,412	1,171	320	1,921	7,723	902	6,822	601	-	486	1,959	106	816	1,231	25,833
Nyabihu	3,310	605	-	456	-	646	3,584	9,448	24	1,019	230	234	556	7,559	271	7,288	1,126	-	-	710	365	278	3,071	32,200
Ngororero	3,643	716	-	432	-	5,545	6,489	2,332	1,802	11,474	2,671	1,627	7,177	10,707	1,139	9,568	213	-	912	309	162	79	1,709	46,526
Rusizi	7,185	77	1,434	-	-	17,057	2,624	214	2,120	6,007	2,234	522	3,251	11,043	9,621	1,422	83	383	1,822	795	310	80	2,829	54,062
Nyamasheke	5,165	51	362	-	78	15,345	3,575	117	1,629	7,156	2,149	1,072	3,935	6,539	1,912	4,627	91	395	2,032	247	321	-	8,151	51,253
Rulindo	4,636	-	17	56	-	4,846	5,455	1,171	90	6,170	1,856	1,350	2,964	10,229	4,737	5,492	932	26	421	1,092	256	185	1,843	37,425
Gakenke	11,456	-	51	122	337	6,520	7,243	1,080	2,003	13,621	2,576	1,853	9,192	8,248	1,480	6,768	328	241	511	453	249	158	1,987	54,609
Musanze	6,673	2,373	-	817	-	291	2,808	4,133	204	1,942	844	304	794	6,833	410	6,424	489	-	57	710	467	19	2,142	29,957
Burera	11,038	1,453	-	558	-	247	3,911	5,179	46	2,126	799	116	1,212	10,269	540	9,729	1,969	-	10	463	56	161	113	37,597
Gicumbi	5,214	222	-	153	25	2,587	8,304	3,209	20	5,214	2,032	1,337	1,844	17,584	4,481	13,103	1,203	318	236	334	68	1,121	1,449	47,261
Rwamagana	8,835	54	505	-	495	8,666	2,759	1,172	87	11,391	6,694	1,947	2,750	17,009	16,899	110	138	1,184	470	1,057	623	575	1,743	56,764
Nyagatare	25,700	15,570	1,690	-	864	9,909	2,031	639	85	10,886	6,310	1,205	3,372	18,195	16,768	1,427	424	1,133	1,333	685	242	690	440	90,518
Gatsibo	18,292	5,255	1,626	13	469	5,389	3,022	2,493	211	20,057	11,310	2,865	5,882	19,350	17,355	1,995	-	1,019	1,176	670	242	7	4,052	83,345
Kayonza	14,910	3,814	1,854	-	553	15,065	3,253	2,110	617	12,183	8,160	1,304	2,719	17,246	16,968	278	17	784	628	489	1,172	113	1,109	75,918
Kirehe	21,359	2,464	943	18	62	9,218	1,952	1,364	303	17,881	10,217	1,340	6,325	20,490	19,307	1,183	219	420	1,232	242	1,114	110	1,577	80,969
Ngoma	14,017	348	852	-	513	14,202	2,017	1,359	86	15,016	7,925	1,894	5,197	15,191	13,891	1,300	12	765	990	243	503	342	1,063	67,518
Bugesera	8,003	4,286	1,480	7	32	10,562	5,010	289	288	9,778	3,435	1,727	4,616	11,411	11,319	93	33	2,462	660	991	224	507	1,555	57,579
National	226,982	38,979	16,135	2,975	3,862	239,221	106,670	55,613	21,066	255,290	96,262	37,009	122,019	312,279	204,238	108,041	10,475	11,191	29,778	16,758	10,131	9,731	61,409	1,428,545
SSF	220,035	38,953	241	2,921	3,860	239,164	106,659	55,518	21,065	255,151	96,146	36,993	122,011	312,014	203,989	108,025	10,460	11,186	28,839	16,615	9,716	9,242	60,580	1,402,218
LSF	6,946	26	15,895	54	2	57	10	95	1	139	115	16	8	266	250	16	15	5	940	144	415	489	829	26,327

Source: NISR, SAS 2023

Table 11:Season B 2023_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	414	363	-	-	-	732	169	38	104	2,069	590	432	1,047	1,464	1,406	58	6	25	235	178	46	68	236	6,149
Gasabo	1,199	3,589	256	-	-	2,564	1,135	372	61	3,885	1,202	1,255	1,429	3,822	3,410	412	56	192	625	820	7	476	418	19,478
Kicukiro	566	718	83	-	-	394	275	-	191	888	264	190	435	1,316	1,291	26		26	301	141	44	38	205	5,186
Nyanza	2,751	4,482	714	-	62	8,676	2,084	285	634	6,155	1,542	1,806	2,806	12,436	10,451	1,985	102	769	2,307	688	219	273	1,377	44,013
Gisagara	2,695	3,985	2,953	-	307	7,026	2,794	50	343	7,286	1,306	2,027	3,953	12,055	10,557	1,498	6	379	3,110	544	929	103	449	45,014
Nyaruguru	286	2,980	-	357	-	4,163	5,211	1,736	531	4,612	1,105	1,581	1,926	6,683	938	5,745	346	15	1,561	643	182	553	4,468	34,328
Huye	988	6,190	692	-	163	5,037	3,199	447	625	5,953	1,857	1,681	2,415	7,930	5,124	2,806	157	42	2,592	301	176	125	1,447	36,065
Nyamagabe	1,127	4,059	21	2,641	-	6,025	6,799	2,421	630	5,610	839	1,007	3,764	6,496	814	5,682	1,229	-	733	205	107	313	3,337	41,752
Ruhango	1,117	2,685	878	-	71	18,105	3,028	189	627	9,080	1,434	2,413	5,233	10,358	7,692	2,666	78	1,855	4,226	546		595	1,756	55,192
Muhanga	1,134	55	121	3	-	7,789	5,986	104	1,901	18,129	3,124	3,270	11,735	6,302	2,284	4,018	35		1,973	577	172	424	921	45,626
Kamonyi	1,983	3,336	192	-	-	12,202	3,747	452	1,109	11,908	2,338	2,290	7,279	9,401	7,849	1,551	46	707	4,378	840	887	310	1,611	53,108
Karongi	737	1,894	-	304	-	6,386	3,889	995	1,271	9,604	1,208	1,833	6,562	7,161	1,596	5,565	327	-	1,488	757	80	416	4,029	39,339
Rutsiro	1,374	75	-	496	-	1,308	3,557	3,635	850	6,345	1,413	1,747	3,185	4,723	640	4,082	573	-	1,408	117	656		4,240	29,356
Rubavu	1,993	460	-		-	397	849	6,153	153	2,885	656	421	1,808	5,174	695	4,479	448	44	551	2,219	136	609	1,073	23,144
Nyabihu	3,658	-	-	1,924	-	378	2,364	8,270	26	955	243	323	390	2,589	83	2,506	556	-	132	772	217	131	652	22,623
Ngororero	4,063	24	-	1,899	-	2,723	6,653	1,365	845	10,945	1,572	2,201	7,172	4,875	543	4,332	210	-	1,252	346	165	193	1,971	37,531
Rusizi	1,309	175	1,423		5	15,766	2,840	72	789	4,090	1,335	548	2,206	10,895	7,940	2,955	50	248	1,086	447	670	90	2,994	42,947
Nyamasheke	628	22	363	30	60	10,732	4,362	81	470	6,905	1,841	1,500	3,564	6,143	1,215	4,928	193	1,105	1,536	401	285		8,596	41,913
Rulindo	1,239	4,898	18	94	6	4,671	3,612	1,268	208	7,497	2,204	1,914	3,379	10,305	3,623	6,681	370	-	591	809	154	182	2,016	37,936
Gakenke	1,517	668	-	416	-	5,161	6,062	1,057	1,802	15,138	3,887	3,001	8,250	12,418	1,056	11,362	168	-	898	166	244	250	1,966	47,930
Musanze	2,825	952	-	1,343	-	94	2,150	5,063	190	1,864	834	416	614	6,994	281	6,713	558	-	7	791	521	10	991	24,353
Burera	2,170	6,487	-	709	-	105	3,826	4,245	56	2,183	919	269	994	12,346	425	11,921	996	-	-	915	138	152	343	34,670
Gicumbi	2,423	12,449	-	159	22	2,270	7,787	2,551	86	8,324	2,841	2,439	3,044	13,109	3,032	10,077	1,146	349	161	490	121	1,093	1,264	53,805
Rwamagana	4,621	10,183	491	-	300	3,430	1,775	924	144	12,685	6,714	3,058	2,912	10,754	10,483	271	243	1,347	547	1,188	524	517	1,640	51,311
Nyagatare	22,767	4,483	1,843	-	269	2,292	1,711	620	77	11,804	6,652	1,384	3,768	29,084	27,660	1,424	39	1,795	1,138	699	81	683	538	79,922
Gatsibo	9,536	7,283	1,667	-	153	1,797	1,950	1,715	460	19,744	10,464	3,549	5,732	18,456	16,168	2,288	96	2,979	2,119	704	407	72	3,559	72,696
Kayonza	7,669	12,326	1,814	-	452	10,493	1,957	1,819	634	12,986	7,780	2,508	2,698	18,864	18,561	303	68	1,033	559	762	1,328	56	1,315	74,135
Kirehe	2,700	13,273	949	-	92	4,846	1,706	1,268	727	19,792	9,486	3,725	6,580	21,109	13,700	7,409	233	883	1,363	976	1,305	31	1,743	72,996
Ngoma	2,161	6,906	861	-	1,024	4,721	1,545	729	137	15,983	8,035	2,523	5,425	17,316	14,700	2,616	26	887	1,564	342	468	383	1,127	56,180
Bugesera	6,277	6,082	1,340	-	86	8,808	3,209	285	335	12,792	4,051	2,687	6,053	18,912	18,778	134	23	3,066	1,790	778	237	481	1,614	66,118
National	93,927	121,079	16,678	10,375	3,073	159,089	96,231	48,210	16,015	258,094	87,735	54,000	116,359	309,489	192,994	116,496	8,383	17,745	40,235	19,164	10,507	8,627	57,896	1,294,818
SSF	92,198	120,997	196	10,306	3,031	159,043	96,205	47,857	16,014	257,959	87,628	53,983	116,349	308,743	192,313	116,431	8,363	17,742	39,441	18,930	10,116	8,133	57,024	1,272,297
LSF	1,730	82	16,482	70	42	46	26	353	0	135	107	18	10	746	681	65	20	4	794	234	392	494	871	22,521

Source: NISR, SAS 2023

Table 12:Season C 2023_Cultivated area by crop type per district (ha)

District/Crop	Sweet potato	Irish potato	Bean	Bush bean	Climbing bean	Pea	Soybean	vegetables	Developed land
Nyarugenge	41	75	134	134	-	-	57	159	467
Gasabo	106	80	3	3	-	-	-	232	421
Kicukiro	30	-	178	178	-	-	19	34	261
Nyanza	71	-	76	45	31	216	19	457	839
Gisagara	293	5	300	297	2	15	230	178	1,021
Nyaruguru	259	321	138	124	14	3	-	50	771
Huye	281	107	307	272	35	62	1	306	1,065
Nyamagabe	122	268	4	3	1	8	-	23	424
Ruhango	172	0	69	68	1	25	-	116	381
Muhanga	230	46	133	132	1	17	86	91	602
Kamonyi	142	13	321	320	1	4	130	346	955
Karongi	83	49	2	2	0	12	11	23	180
Rutsiro	20	100	-	-	-	2	-	9	131
Rubavu	183	917	165	4	160	6	-	296	1,567
Nyabihu	43	2,871	88	3	85	26	-	150	3,179
Ngororero	60	56	2	2	0	1	22	5	146
Rusizi	45	16	29	29	0	-	0	407	497
Nyamasheke	38	0	-	-	-	0	0	96	134
Rulindo	71	177	16	16	-	15	-	88	366
Gakenke	142	440	17	17	0	-	117	75	791
Musanze	212	1,310	25	12	12	42	-	477	2,067
Burera	685	3,247	-	-	-	-	-	55	3,986
Gicumbi	179	287	68	67	1	1	0	40	576
Rwamagana	78	6	102	102	-	-	8	222	416
Nyagatare	220	63	45	45	-	1	23	566	917
Gatsibo	23	4	1	1	-	-	0	158	186
Kayonza	35	21	23	22	1	1	-	123	203
Kirehe	170	59	44	40	4	1	1	160	436
Ngoma	57	1	208	208	-	-	5	34	305
Bugesera	144	0	979	979	0	1	31	256	1,411
National	**4,235**	**10,540**	**3,476**	**3,125**	**350**	**459**	**759**	**5,233**	**24,702**

Source: NISR, SAS 2023

Table 13:Season A 2023_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	687	18	-	-	-	192	293	73	11	889	254	166	470	2,381	2,367	14	-	10	115	234	8	59	77	5,048
Gasabo	2,920	-	257	-	-	957	1,142	554	60	1,878	821	352	705	7,193	6,768	426	51	391	693	602	4	551	28	17,282
Kicukiro	1,125	-	46	-	7	55	417	11	58	471	177	83	210	1,190	1,188	2	3	21	210	69	-	32	29	3,743
Nyanza	5,232	506	389	-	17	3,904	2,329	258	275	3,457	1,052	647	1,759	10,907	9,486	1,421	99	389	1,366	622	84	233	-	30,066
Gisagara	6,056	853	2,420	-	47	1,090	2,373	274	305	3,702	902	788	2,012	12,566	11,922	644	59	399	2,175	282	44	110	62	32,816
Nyaruguru	4,987	-	-	-	-	1,040	4,159	1,879	430	1,992	643	336	1,013	7,152	1,525	5,628	249	-	858	259	39	747	68	23,859
Huye	4,064	-	985	-	93	2,918	3,058	990	183	2,932	961	623	1,348	11,324	8,436	2,888	61	50	1,963	352	-	149	3	29,126
Nyamagabe	4,876	-	23	41	13	1,630	6,608	3,818	375	2,617	529	296	1,792	8,811	2,791	6,020	1,376	31	1,112	256	107	-	11	31,704
Ruhango	3,562	96	869	-	59	4,721	1,620	189	540	2,802	464	449	1,889	8,339	6,902	1,437	75	380	2,253	380	-	156	222	26,263
Muhanga	1,840	-	119	-	198	1,917	4,483	332	1,844	6,486	1,020	733	4,733	7,160	3,415	3,744	23	23	1,414	467	147	702	157	27,312
Kamonyi	4,916	-	189	-	-	2,598	2,392	733	288	4,638	717	655	3,266	10,865	9,308	1,558	11	368	2,516	937	783	400	15	31,652
Karongi	7,031	-	-	52	-	1,853	4,664	1,191	1,020	4,242	783	593	2,865	5,783	1,515	4,268	164	-	1,001	589	46	432	13	28,081
Rutsiro	6,511	-	-	165	-	204	3,772	3,191	1,213	3,061	711	442	1,908	2,919	557	2,362	422	-	1,085	202	375	114	530	23,764
Rubavu	2,041	218	-	-	-	-	569	5,792	125	1,538	473	161	903	7,723	902	6,822	601	-	486	1,917	-	816	666	22,492
Nyabihu	3,201	586	-	456	-	129	3,063	9,448	8	424	91	122	211	7,559	271	7,288	1,126	-	-	710	10	226	2,923	29,869
Ngororero	3,643	716	-	432	-	1,233	5,194	2,332	1,022	4,451	829	743	2,879	10,707	1,139	9,568	213	-	912	309	104	79	240	31,587
Rusizi	7,097	77	1,361	-	-	1,617	2,017	214	1,795	2,824	953	215	1,656	11,043	9,621	1,422	83	383	1,822	795	43	35	143	31,349
Nyamasheke	5,165	51	355	-	78	2,836	3,122	110	1,365	2,750	757	297	1,697	6,539	1,912	4,627	91	395	2,032	247	83	-	250	25,469
Rulindo	4,632	-	17	56	-	847	4,110	1,169	76	2,299	722	413	1,165	10,229	4,737	5,492	932	26	420	1,092	91	185	120	26,299
Gakenke	11,456	-	34	122	337	1,244	7,122	1,080	1,348	6,172	1,078	726	4,368	8,248	1,480	6,768	328	241	511	416	173	122	266	39,220
Musanze	6,666	2,373	-	818	-	33	2,185	4,133	193	802	346	107	348	6,833	410	6,424	489	-	57	710	100	19	1,995	27,404
Burera	10,882	1,453	-	558	-	41	2,592	5,179	46	815	352	35	429	10,269	540	9,729	1,969	-	10	407	-	161	113	34,493
Gicumbi	5,214	222	-	153	25	708	7,067	3,206	20	1,835	747	493	595	17,584	4,481	13,103	1,203	318	236	334	60	1,067	-	39,253
Rwamagana	8,847	54	471	-	489	1,381	2,132	1,172	87	5,475	3,110	970	1,394	16,991	16,882	110	142	1,184	450	940	154	552	607	41,128
Nyagatare	25,732	15,570	1,733	-	864	1,033	1,827	638	85	5,081	2,671	658	1,752	18,191	16,762	1,429	423	1,133	1,349	684	159	681	12	75,197
Gatsibo	18,316	5,255	1,656	13	469	1,467	2,422	2,483	81	9,810	5,509	1,338	2,963	19,350	17,355	1,995	-	1,019	1,180	656	103	-	128	64,408
Kayonza	14,911	3,814	1,850	-	552	4,245	2,329	2,110	202	4,944	3,145	602	1,197	17,213	16,935	278	17	784	628	485	360	108	57	54,608
Kirehe	21,344	2,439	945	19	62	1,461	1,873	1,375	170	7,750	4,126	651	2,972	20,490	19,307	1,183	219	420	1,210	230	122	110	101	60,342
Ngoma	14,017	348	858	-	513	2,704	1,923	1,359	86	7,118	3,735	1,005	2,377	15,191	13,891	1,300	12	765	990	209	287	340	60	46,779
Bugesera	8,003	4,286	1,493	7	32	1,126	3,798	289	58	4,156	1,555	760	1,842	11,409	11,317	93	33	2,462	646	991	94	370	370	39,624
National	224,976	38,935	16,070	2,891	3,856	45,182	90,657	55,583	13,371	107,411	39,234	15,459	52,718	312,160	204,118	108,041	10,472	11,191	29,701	16,382	3,579	8,557	9,266	1,000,239
SSF	218,457	38,909	223	2,836	3,854	45,152	90,646	55,475	13,370	107,345	39,178	15,453	52,715	311,922	203,897	108,025	10,454	11,186	28,786	16,280	3,479	8,165	8,893	975,433
LSF	6,520	26	15,847	55	2	30	11	108	1	65	56	6	3	238	222	16	18	5	914	102	99	392	373	24,806

Source: NISR, SAS 2023

Table 14: Season B 2023_Harvested 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	414	363	-	-	-	197	163	38	84	695	139	93	463	1,464	1,406	58	6	25	235	161	17	68	90	4,020
Gasabo	1,199	3,589	256	-	-	425	1,116	372	30	1,255	368	388	499	3,822	3,410	412	56	192	625	800	0	476	181	14,395
Kicukiro	564	718	83	-	-	114	268	-	171	381	100	84	198	1,316	1,291	26	-	26	301	139	23	26	97	4,226
Nyanza	2,751	4,482	639	-	62	1,738	2,061	285	551	1,542	422	421	699	12,436	10,451	1,985	102	769	2,307	688	88	273	1,178	31,953
Gisagara	2,695	3,985	2,953	-	307	2,713	2,685	50	326	1,845	335	564	947	12,055	10,557	1,498	6	379	3,110	544	95	103	225	34,075
Nyaruguru	286	2,980	-	357	-	1,546	4,127	1,736	265	816	219	223	374	6,683	938	5,745	346	15	1,561	643	51	553	794	22,759
Huye	988	6,190	692	-	163	1,259	2,841	447	557	1,247	344	329	574	7,930	5,124	2,806	157	42	2,592	301	141	125	1,122	26,794
Nyamagabe	1,127	4,059	21	2,641	-	1,267	5,900	2,421	586	1,762	146	150	1,466	6,496	814	5,682	1,229	-	733	186	71	313	942	29,753
Ruhango	1,117	2,685	878	-	71	4,663	2,670	189	534	2,070	149	285	1,636	10,347	7,681	2,666	78	1,855	4,226	546	58	394	976	33,355
Muhanga	1,134	55	121	3	-	2,464	5,526	104	1,810	6,916	628	645	5,643	6,302	2,284	4,018	35	-	1,973	536	141	424	743	28,288
Kamonyi	1,983	3,336	192	-	-	1,592	3,399	452	938	5,211	644	730	3,838	9,333	7,832	1,501	46	707	4,378	736	802	310	1,212	34,629
Karongi	737	1,894	-	304	-	1,876	3,374	995	954	4,621	388	342	3,890	7,161	1,596	5,565	327	-	1,488	757	26	416	977	25,908
Rutsiro	1,317	75	-	496	-	839	2,770	3,635	708	2,534	409	670	1,455	4,723	640	4,082	573	-	1,408	117	328	278	1,918	21,719
Rubavu	1,993	460	-	-	-	233	805	6,153	140	1,051	313	152	586	5,174	695	4,479	448	44	551	2,172	52	609	841	20,725
Nyabihu	3,611	-	-	1,924	-	89	2,110	8,270	26	324	86	125	113	2,589	83	2,506	556	-	132	772	119	131	97	20,751
Ngororero	4,063	24	-	1,899	-	479	5,738	1,365	822	3,638	210	384	3,044	4,875	543	4,332	210	-	1,252	326	100	114	584	25,489
Rusizi	1,309	153	1,423	-	5	10,006	2,432	72	765	1,539	604	184	751	10,895	7,940	2,955	50	248	1,086	426	357	40	2,356	33,161
Nyamasheke	628	22	363	30	60	3,746	4,055	81	412	1,665	410	221	1,033	6,143	1,215	4,928	193	1,105	1,536	401	203	-	3,228	23,872
Rulindo	1,239	4,898	18	94	6	973	3,099	1,268	106	2,528	527	663	1,338	10,305	3,623	6,681	370	-	591	760	44	182	1,006	27,486
Gakenke	1,517	668	-	416	-	1,300	5,703	1,057	1,705	5,866	819	1,182	3,865	12,418	1,056	11,362	168	-	898	166	206	250	1,125	33,463
Musanze	2,825	952	-	1,343	-	24	1,872	5,063	140	662	275	191	197	6,994	281	6,713	558	-	7	781	238	6	902	22,369
Burera	2,170	6,487	-	709	-	35	3,214	4,245	11	672	318	45	309	12,346	425	11,921	996	-	-	915	112	101	118	32,132
Gicumbi	2,423	12,449	-	159	22	664	5,317	2,551	70	2,326	607	616	1,104	13,109	3,032	10,077	1,146	349	161	395	64	1,093	150	42,449
Rwamagana	4,621	10,183	491	-	300	1,764	1,413	924	103	4,392	2,640	704	1,048	10,754	10,482	271	243	1,347	543	1,140	311	517	980	40,025
Nyagatare	22,763	4,483	1,843	-	269	960	1,511	615	77	4,816	2,577	435	1,804	29,084	27,660	1,424	39	1,795	1,138	678	79	683	223	71,056
Gatsibo	9,534	7,279	1,667	-	153	741	1,922	1,715	370	6,459	3,357	995	2,108	18,456	16,167	2,288	96	2,979	2,119	637	219	65	2,665	57,077
Kayonza	7,669	12,326	1,814	-	452	2,992	1,582	1,819	358	3,733	2,554	378	800	18,864	18,561	303	68	1,033	559	762	198	56	734	55,019
Kirehe	2,700	13,273	949	-	92	1,838	1,413	1,268	654	5,616	3,241	394	1,982	21,109	13,700	7,409	233	883	1,363	267	44	31	1,169	52,902
Ngoma	2,160	6,906	861	-	1,024	1,613	1,246	729	61	6,378	3,786	574	2,019	17,316	14,700	2,616	26	887	1,564	342	391	383	837	42,723
Bugesera	6,277	6,082	1,340	-	86	1,503	2,883	285	289	5,799	1,680	901	3,217	18,912	18,778	134	23	3,066	1,790	759	44	481	379	49,999
National	93,816	121,054	16,603	10,375	3,073	49,655	83,212	48,205	13,621	88,361	28,294	13,068	46,998	309,410	192,965	116,445	8,383	17,745	40,231	17,854	4,625	8,503	27,848	962,573
SSF	92,094	120,975	196	10,306	3,031	49,631	83,190	47,857	13,621	88,300	28,246	13,063	46,992	308,732	192,301	116,431	8,363	17,742	39,441	17,644	4,523	8,019	27,377	941,040
LSF	1,722	79	16,408	70	42	24	23	348	-	60	48	6	6	678	664	14	20	4	790	210	102	483	471	21,533

Source: NISR, SAS 2023

Table 15:Season C 2023_Harvested area by crop type per district (ha)

District/Crop	Sweet potato	Irish potato	Bean	Bush bean	Climbing bean	Pea	Soybean	vegetables	Developed land
Nyarugenge	41	75	134	134	-	-	57	159	467
Gasabo	106	80	3	3	-	-	-	232	421
Kicukiro	30	-	178	178	-	-	19	34	261
Nyanza	71	-	76	45	31	216	19	457	839
Gisagara	293	5	300	297	2	15	230	178	1,021
Nyaruguru	259	321	138	124	14	3	-	50	771
Huye	281	107	307	272	35	62	1	306	1,065
Nyamagabe	122	268	4	3	1	8	-	23	424
Ruhango	172	0	69	68	1	25	-	116	381
Muhanga	230	46	133	132	1	17	86	91	602
Kamonyi	142	13	321	320	1	4	130	346	955
Karongi	83	49	2	2	0	12	11	23	180
Rutsiro	20	100	-	-	-	2	-	9	131
Rubavu	183	917	165	4	160	6	-	296	1,567
Nyabihu	43	2,871	88	3	85	26	-	150	3,179
Ngororero	60	56	2	2	0	1	22	5	146
Rusizi	45	16	29	29	0	-	0	407	497
Nyamasheke	38	0	-	-	-	0	0	96	134
Rulindo	71	177	16	16	-	15	-	88	366
Gakenke	142	440	17	17	0	-	117	75	791
Musanze	212	1,310	25	12	12	42	-	477	2,067
Burera	685	3,247	-	-	-	-	-	55	3,986
Gicumbi	179	287	68	67	1	1	0	40	576
Rwamagana	78	6	102	102	-	-	8	222	416
Nyagatare	220	63	45	45	-	1	23	566	917
Gatsibo	23	4	1	1	-	-	0	158	186
Kayonza	35	21	23	22	1	1	-	123	203
Kirehe	170	59	44	40	4	1	1	160	436
Ngoma	57	1	208	208	-	-	5	34	305
Bugesera	144	0	979	979	0	1	31	256	1,411
National	**4,235**	**10,540**	**3,476**	**3,125**	**350**	**459**	**759**	**5,233**	**24,702**

Source: NISR, SAS 2023

Table 16:Season A 2023_Average yield by crop type per district (Kg/Ha)

District	Maize	Sorghum	Paddy rice	Wheat	Other cereals	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Bananas	Cooking Banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Peas	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops	Other crops
Nyarugenge	1,009	38	-	-	-	9,551	5,887	2,208	7,691	11,198	11,059	10,738	11,434	292	291	490	-	295	306	6,530	6,379	8,110	26,929
Gasabo	1,033	-	4,378	-	-	11,083	7,772	4,263	5,201	10,982	12,120	9,401	10,447	579	563	836	374	428	377	7,673	12,906	9,454	756
Kicukiro	1,360	-	3,782	-	24	9,776	7,504	3,739	5,454	10,450	10,831	10,274	10,199	385	386	-	549	188	260	10,317	-	4,938	1,724
Nyanza	1,422	619	2,619	-	-	15,233	5,785	3,330	3,334	8,446	7,444	7,620	9,348	459	461	446	329	237	259	7,402	3,241	7,731	-
Gisagara	1,765	901	3,381	-	311	15,901	6,147	2,785	7,701	8,476	7,077	7,979	9,298	496	486	696	437	186	401	7,719	7,791	21,232	2,260
Nyaruguru	1,612	-	-	-	-	10,355	10,215	4,878	7,501	10,407	11,520	9,361	10,047	607	500	636	948	-	278	7,396	4,676	9,272	636
Huye	1,375	-	4,006	-	329	17,359	6,345	3,444	7,425	10,044	10,098	8,902	10,533	374	354	433	891	470	297	10,164	-	14,169	20,022
Nyamagabe	1,571	-	1,706	1,159	530	9,575	8,007	5,974	5,210	8,519	7,974	7,715	8,813	531	509	541	711	613	203	12,063	3,471	-	30
Ruhango	1,183	165	4,089	-	42	19,330	7,194	2,925	3,548	8,583	8,421	7,077	8,980	342	307	511	365	239	139	7,585	-	14,661	1,854
Muhanga	1,232	-	2,308	-	988	12,971	6,312	4,177	8,928	9,743	11,244	10,351	9,325	303	180	415	705	367	159	8,030	2,345	22,735	19,933
Kamonyi	1,428	-	3,345	-	-	12,556	4,960	3,029	5,503	10,330	11,938	7,186	10,608	233	244	166	423	506	293	5,514	6,724	11,683	39
Karongi	1,564	-	-	623	-	8,274	8,176	7,648	6,715	12,201	13,329	12,138	11,905	886	677	960	578	-	486	9,031	6,181	8,014	3,603
Rutsiro	1,284	-	-	684	-	11,642	7,813	8,627	7,322	11,684	13,033	7,617	12,122	860	419	964	709	-	424	9,333	8,641	2,259	7,155
Rubavu	2,042	884	-	-	-	-	8,255	11,740	4,760	10,853	11,069	6,534	11,513	976	397	1,052	563	-	789	8,729	-	17,271	21,372
Nyabihu	1,796	807	-	1,335	-	10,231	7,447	11,599	3,144	8,166	10,982	6,795	7,755	1,144	588	1,165	832	-	-	12,513	6,047	8,105	509
Ngororero	1,213	681	-	1,064	-	14,127	6,539	4,798	6,850	7,511	7,746	7,435	7,464	743	564	765	806	-	238	10,558	4,655	5,347	11,292
Rusizi	1,551	855	4,948	-	-	11,313	6,761	4,729	6,418	10,423	9,396	7,961	11,335	693	675	816	921	628	443	9,935	6,457	8,955	730
Nyamasheke	1,307	1,457	3,447	-	654	9,379	4,814	4,721	4,970	8,151	8,679	8,134	7,918	722	581	781	630	604	408	10,912	5,538	-	4,850
Rulindo	1,568	-	3,130	1,074	-	13,124	7,223	4,338	4,824	9,766	10,941	9,247	9,222	602	499	691	373	403	617	8,939	3,154	7,199	11,889
Gakenke	1,494	-	2,236	654	250	12,079	7,135	5,175	6,435	11,154	12,740	9,526	11,034	613	441	651	399	573	368	8,500	14,572	13,456	5,622
Musanze	1,604	1,352	-	1,277	-	5,863	7,971	11,607	2,954	11,142	12,811	8,237	10,378	965	961	965	529	-	536	6,431	6,975	22,747	3,795
Burera	1,681	1,770	-	1,588	-	11,909	9,881	10,741	6,128	10,314	13,237	5,682	8,290	1,263	824	1,287	626	-	244	6,273	-	9,598	17,880
Gicumbi	1,881	711	-	734	562	13,544	9,676	9,016	3,276	11,191	14,136	7,342	10,678	768	641	812	821	457	396	9,335	3,897	8,494	-
Rwamagana	1,178	698	3,364	-	243	16,842	7,243	5,240	3,109	14,241	18,133	8,557	9,517	345	346	155	209	326	338	6,870	4,247	10,947	4,310
Nyagatare	3,054	1,560	4,059	-	965	13,668	4,845	6,472	6,455	14,910	18,721	8,155	11,640	793	739	1,422	819	576	851	4,892	4,900	3,332	714
Gatsibo	1,497	797	5,191	112	660	13,375	8,536	4,371	3,032	12,571	14,835	8,051	10,403	654	641	767	-	479	387	5,915	6,746	-	3,699
Kayonza	1,426	990	3,726	-	744	11,434	6,444	3,052	4,977	12,814	15,244	8,178	8,759	583	579	788	448	522	357	8,134	3,950	2,440	9,620
Kirehe	2,220	1,028	3,873	3,954	765	14,433	5,613	4,565	2,504	14,143	17,398	8,274	10,910	718	727	575	494	734	1,211	9,748	17,446	908	3,692
Ngoma	1,817	942	3,545	-	871	11,952	7,097	4,478	4,375	13,659	16,560	7,235	11,819	686	676	798	388	456	559	8,195	4,245	19,719	19,500
Bugesera	945	661	3,916	999	209	14,637	6,687	2,067	4,806	11,149	14,745	8,175	9,338	286	287	150	271	265	176	6,958	2,540	17,401	713
National	1,737	1,189	3,963	1,220	710	13,472	7,364	8,174	6,377	11,353	14,171	8,369	10,131	632	529	827	653	419	396	8,100	6,303	11,472	5,124
SSF	1,661	1,189	2,296	1,189	710	13,480	7,365	8,167	6,377	11,355	14,180	8,368	10,131	632	528	827	653	419	353	8,109	6,388	11,060	5,200
LSF	4,299	751	3,987	2,827	101	2,310	2,676	12,166	1,266	7,766	7,541	9,233	8,938	685	678	785	436	238	1,768	6,787	3,317	20,058	3,304

Source: NISR, SAS 2023

Table 17:Season B 2023_Average yield by crop type per district (Kg/Ha)

District	Maize	Sorghum	Paddy rice	Wheat	Other cereals	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Bananas	Cooking Banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Peas	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops	Other crops
Nyarugenge	980	794	-	-	-	11,760	5,213	2,976	7,510	11,101	17,592	9,077	9,560	704	711	546	-	368	502	5,472	3,891	11,885	16,682
Gasabo	1,265	1,100	4,917	-	-	12,451	6,823	3,520	3,990	13,329	17,291	14,687	9,346	764	761	785	466	603	383	12,008	2,015	9,912	906
Kicukiro	728	1,306	3,433	-	-	12,230	7,650	-	6,083	13,044	17,794	13,932	10,275	800	803	644	-	343	401	11,379	3,124	7,143	7,432
Nyanza	1,193	1,033	2,645	-	1,068	16,175	7,171	3,558	6,696	9,990	11,430	9,465	9,437	624	620	641	359	340	374	8,110	3,483	8,661	1,080
Gisagara	1,061	912	3,361	-	476	18,223	6,869	3,521	8,953	10,958	15,639	9,745	10,025	706	681	881	415	627	435	7,357	22,629	2,085	1,183
Nyaruguru	992	643	-	642	-	13,745	9,240	6,615	8,759	10,252	14,815	8,795	8,452	759	541	795	470	474	388	9,980	7,292	4,919	1,282
Huye	952	1,009	3,189	-	199	19,643	7,142	3,210	7,557	10,418	12,456	10,949	8,893	640	615	686	576	475	390	7,878	2,093	2,448	1,262
Nyamagabe	1,098	903	1,758	1,216	-	12,961	7,171	7,543	7,535	7,028	9,680	12,923	6,162	609	495	625	506	-	427	10,320	6,088	7,337	894
Ruhango	1,052	914	4,691	-	203	18,798	4,594	2,805	7,354	9,079	14,470	11,228	8,214	693	733	577	399	396	413	6,492	6,011	10,529	10,581
Muhanga	1,081	1,195	2,095	1,315	-	15,635	6,875	3,894	7,979	9,509	14,007	10,968	8,841	607	648	584	405	-	419	9,478	3,858	10,782	6,819
Kamonyi	1,139	982	3,915	-	-	16,330	6,394	3,417	9,112	9,323	14,606	9,980	8,312	596	602	563	544	565	383	5,663	7,087	12,177	1,101
Karongi	1,207	1,223	-	708	-	14,987	9,039	3,509	9,799	11,015	15,588	13,617	10,330	1,080	750	1,174	720	-	533	9,265	8,136	13,354	1,504
Rutsiro	1,215	812	-	734	-	14,744	6,840	4,723	8,943	12,170	17,949	14,989	9,246	797	659	818	534	-	422	12,666	4,946	13,642	5,974
Rubavu	1,302	626	-	-	-	12,094	7,103	8,353	5,434	12,652	16,191	12,075	10,913	761	549	794	510	637	648	12,063	6,790	30,353	7,838
Nyabihu	1,253	-	-	1,472	-	10,049	6,277	9,152	8,952	10,094	15,623	8,609	7,547	1,200	764	1,214	671	-	684	18,073	7,009	6,074	6,252
Ngororero	1,117	428	-	1,236	-	12,157	6,521	5,281	8,861	11,055	14,129	12,782	10,624	873	559	912	523	-	435	10,873	8,307	5,582	6,706
Rusizi	1,008	918	5,102	-	270	10,239	7,941	6,532	8,282	12,925	16,777	13,504	9,683	802	736	977	527	469	472	7,110	6,985	3,047	3,056
Nyamasheke	886	1,181	4,675	741	294	12,870	7,485	2,633	7,696	11,774	12,892	12,588	11,155	842	567	910	611	566	410	8,106	5,601	-	3,319
Rulindo	1,023	1,083	3,635	1,231	541	15,927	7,977	4,634	6,521	12,212	17,723	12,107	10,095	838	700	913	507	-	529	9,250	6,671	4,036	7,051
Gakenke	852	961	-	936	-	16,232	9,888	4,593	7,541	11,469	18,121	14,541	9,119	858	710	872	515	-	391	13,780	6,492	17,165	4,537
Musanze	1,523	1,364	-	1,628	-	12,201	9,798	9,189	10,328	10,918	14,165	7,911	9,303	1,265	836	1,283	583	-	499	10,812	4,840	10,088	9,054
Burera	1,252	1,560	-	1,490	-	11,264	8,883	7,703	7,646	12,989	17,848	13,855	7,871	1,093	589	1,111	606	-	-	11,381	5,272	26,299	316
Gicumbi	1,050	1,423	-	982	359	15,086	8,043	6,018	7,144	11,746	18,451	9,453	9,341	921	737	976	704	523	555	7,907	3,486	12,048	3,149
Rwamagana	859	1,141	5,350	-	762	17,429	7,348	3,564	6,461	14,557	18,408	9,750	8,083	632	633	617	702	450	559	7,416	1,255	6,907	3,802
Nyagatare	1,497	1,381	4,393	-	-	20,468	4,632	3,940	9,411	14,919	19,202	8,757	10,286	877	869	1,030	406	413	372	6,641	5,783	1,989	26,878
Gatsibo	1,351	1,306	4,998	-	722	18,241	9,495	4,522	7,050	13,969	16,726	11,173	10,898	694	670	867	477	520	552	8,723	5,486	3,775	1,955
Kayonza	1,233	1,221	4,220	-	456	15,783	5,831	3,796	5,713	15,750	18,292	12,671	9,094	723	718	1,022	526	645	491	9,252	5,438	4,387	8,124
Kirehe	2,269	1,082	4,716	-	553	16,658	6,688	3,594	5,064	16,186	20,306	10,491	10,579	735	722	759	501	443	410	7,416	4,393	9,726	3,285
Ngoma	766	1,195	3,614	-	625	15,262	6,238	5,186	3,695	15,503	18,530	8,518	11,812	847	829	943	470	488	439	8,090	3,087	22,076	8,226
Bugesera	909	898	4,551	-	777	14,090	5,344	2,651	6,199	10,935	14,214	11,592	9,039	684	685	559	355	449	400	8,277	4,524	24,616	11,219
National	1,254	1,152	4,212	1,265	527	14,836	7,453	6,777	7,831	12,329	17,455	11,422	9,495	789	720	904	575	480	430	9,607	5,640	12,048	4,404
SSF	1,201	1,152	2,272	1,263	527	14,842	7,454	6,710	7,831	12,331	17,470	11,424	9,495	786	715	904	576	480	425	9,663	5,681	10,933	4,392
LSF	4,071	1,107	4,236	1,625	789	3,006	4,194	15,972	-	8,580	8,329	6,095	12,768	2,040	2,050	1,576	272	135	650	4,927	3,812	30,548	5,053

Source: NISR, SAS 2023

Table 18:Season C 2023_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	6,688	5,360	7,414	757	757	-	-	664	12,963
Gasabo	7,234	7,642	6,692	448	448	-	-	-	10,000
Kicukiro	2,615	2,615	-	837	837	-	-	849	13,158
Nyanza	4,876	4,876	-	1,021	1,110	892	1,091	-	16,540
Gisagara	5,623	5,665	3,387	703	709	-	-	172	18,954
Nyaruguru	5,987	6,988	5,178	1,007	960	1,424	1,202	-	14,450
Huye	5,856	7,196	2,328	971	901	1,514	1,140	-	10,990
Nyamagabe	8,509	4,736	10,230	479	655	-	587	-	11,004
Ruhango	4,800	4,800	4,877	1,226	1,236	-	872	-	12,086
Muhanga	5,959	6,163	4,937	892	888	1,303	609	1,029	15,502
Kamonyi	8,080	8,382	4,815	1,135	1,137	-	-	1,364	11,564
Karongi	4,652	2,754	7,837	574	655	-	391	380	19,943
Rutsiro	6,374	4,217	6,809	-	-	-	1,053	-	13,356
Rubavu	6,795	6,003	6,953	696	438	703	1,311	-	9,995
Nyabihu	7,171	9,743	7,132	309	370	306	1,296	-	6,891
Ngororero	4,966	2,928	7,145	309	331	-	-	-	61,018
Rusizi	6,650	5,174	10,850	864	864	-	-	-	12,598
Nyamasheke	380	365	2,442	-	-	-	-	-	11,877
Rulindo	7,821	5,952	8,566	537	537	-	1,301	-	15,189
Gakenke	5,513	4,670	5,786	465	469	-	-	629	11,320
Musanze	8,803	8,331	8,879	1,370	695	2,060	1,004	-	15,329
Burera	8,644	7,386	8,909	-	-	-	-	-	18,098
Gicumbi	10,228	8,671	11,200	1,615	1,647	-	960	-	18,729
Rwamagana	3,684	3,021	11,813	1,124	1,124	-	-	312	15,193
Nyagatare	5,066	2,822	12,948	779	779	-	-	5,282	12,134
Gatsibo	5,250	4,100	11,962	-	-	-	-	-	12,138
Kayonza	4,150	-	11,030	1,613	1,647	941	-	-	26,182
Kirehe	3,422	2,097	7,272	1,046	1,126	231	1,763	-	18,861
Ngoma	6,825	6,854	5,530	1,254	1,254	-	-	-	17,000
Bugesera	1,513	1,516	-	1,140	1,140	-	1,607	167	20,346
National	**7,349**	**5,808**	**7,968**	**1,003**	**1,029**	**765**	**1,006**	**741**	**14,046**

Source: NISR, SAS 2023

Table 19:Season A 2023_Average yield on large scale farmers by crop type and district (Kg/Ha)

District/Crop	Maize	Sorghum	Paddy rice	Wheat	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Bananas	Cooking Banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Pea	Ground nuts	Soya beans	Vegetables	Fruits
Nyarugenge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gasabo	3,354	-	4,378	-	-	5,752	-	-	8,966	8,594	41,923	-	902	902	-	-	-	1,039	73,471	7,793
Kicukiro	6,029	-	3,782	-	-	-	-	-	5,385	4,308	6,385	-	-	-	-	-	-	-	-	-
Nyanza	2,207	-	2,618	-	-	-	-	-	6,831	4,855	7,131	7,192	168	168	-	-	-	-	2,083	-
Gisagara	3,475	-	3,405	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nyaruguru	4,663	-	-	-	-	-	10,431	-	19,065	7,561	21,296	25,099	950	256	1,297	-	-	-	-	-
Huye	3,314	-	4,046	-	-	2,960	-	-	5,113	5,506	-	-	-	-	-	-	-	1,321	21,343	-
Nyamagabe	2,789	-	-	-	-	-	6,307	-	-	-	-	-	764	-	764	2,502	-	-	-	-
Ruhango	916	-	4,143	-	11,565	-	-	-	-	-	-	-	1,513	1,513	-	-	-	-	-	-
Muhanga	2,225	-	2,308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kamonyi	4,947	-	3,345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	228	588	-
Karongi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rutsiro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubavu	5,502	-	-	-	-	-	9,441	-	8,677	8,644	13,008	-	-	-	-	381	-	-	5,724	-
Nyabihu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ngororero	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rusizi	2,573	-	4,948	-	-	-	-	-	-	-	-	-	1,992	1,992	-	-	-	463	-	-
Nyamasheke	-	-	3,447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rulindo	4,998	-	3,130	2,867	-	-	18,158	-	-	-	-	-	863	-	863	599	-	-	2,230	-
Gakenke	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Musanze	-	-	-	1,945	-	-	16,494	-	-	-	-	-	-	-	-	-	-	-	-	-
Burera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gicumbi	795	-	-	2,838	-	-	10,042	-	-	-	-	-	-	-	-	-	-	-	-	-
Rwamagana	1,618	-	3,364	-	-	1,093	1,481	-	7,394	6,992	12,016	3,974	261	261	-	27	35	120	5,075	1,688
Nyagatare	5,238	2,500	4,066	-	-	26,248	11,550	-	8,684	8,679	9,561	-	646	658	379	719	536	1,338	9,321	3,282
Gatsibo	4,381	-	5,194	-	-	39,621	4,954	-	7,401	7,001	11,603	14,259	846	846	-	-	206	1,241	22,257	-
Kayonza	4,709	373	3,726	-	1,483	2,492	5,196	1,266	7,845	7,868	7,406	5,049	582	582	619	402	169	1,599	1,994	5,029
Kirehe	6,498	-	3,902	3,954	-	-	16,654	-	-	-	-	-	1,059	1,059	-	-	-	2,138	5,504	-
Ngoma	2,477	-	3,565	-	584	-	-	-	5,741	4,768	12,326	13,101	1,264	1,264	-	-	-	977	10,419	2,759
Bugesera	1,405	-	3,923	-	-	-	7,586	-	7,913	3,554	7,887	10,281	391	358	1,310	175	264	-	4,099	1,265
LSF	4,299	751	3,987	2,827	2,310	2,676	12,166	1,266	7,766	7,541	9,233	8,938	685	678	785	436	238	1,768	6,787	3,317

Source: NISR, SAS 2023

Table 20:Season B 2023_Average yield on large scale farmers by crop type and district (Kg/Ha)

District	Maize	Sorghum	Paddy rice	Wheat	Other cereals	Cassava	Sweet potatoes	Irish potatoes	Yams & Taro	Bananas	Cooking Banana	Dessert banana	Banana for beer	Beans	Bush bean	Climbing bean	Peas	Ground nuts	Soya beans	Vegetables	Fruits	Fodder crops	Other crops
Nyarugenge	980	794	-	-	-	11,760	5,213	2,976	7,510	11,101	17,592	9,077	9,560	704	711	546	-	368	502	5,472	3,891	11,885	16,682
Gasabo	1,265	1,100	4,917	-	-	12,451	6,823	3,520	3,990	13,329	17,291	14,687	9,346	764	761	785	466	603	383	12,008	2,015	9,912	906
Kicukiro	728	1,306	3,433	-	-	12,230	7,650		6,083	13,044	17,794	13,932	10,275	800	803	644	-	343	401	11,379	3,124	7,143	7,432
Nyanza	1,193	1,033	2,645	-	1,068	16,175	7,171	3,558	6,696	9,990	11,430	9,465	9,437	624	620	641	359	340	374	8,110	3,483	8,661	1,080
Gisagara	1,061	912	3,361	-	476	18,223	6,869	3,521	8,953	10,958	15,639	9,745	10,025	706	681	881	415	627	435	7,357	22,629	2,085	1,183
Nyaruguru	992	643	-	642	-	13,745	9,240	6,615	8,759	10,252	14,815	8,795	8,452	759	541	795	470	474	388	9,980	7,292	4,919	1,282
Huye	952	1,009	3,189	-	199	19,643	7,142	3,210	7,557	10,418	12,456	10,949	8,893	640	615	686	576	475	390	7,878	2,093	2,448	1,262
Nyamagabe	1,098	903	1,758	1,216	-	12,961	7,171	7,543	7,535	7,028	9,680	12,923	6,162	609	495	625	506	-	427	10,320	6,088	7,337	894
Ruhango	1,052	914	4,691	-	203	18,798	4,594	2,805	7,354	9,079	14,470	11,228	8,214	693	733	577	399	396	413	6,492	6,011	10,529	10,581
Muhanga	1,081	1,195	2,095	1,315	-	15,635	6,875	3,894	7,979	9,509	14,007	10,968	8,841	607	648	584	405	-	419	9,478	3,858	10,782	6,819
Kamonyi	1,139	982	3,915	-	-	16,330	6,394	3,417	9,112	9,323	14,606	9,980	8,312	596	602	563	544	565	383	5,663	7,087	12,177	1,101
Karongi	1,207	1,223	-	708	-	14,987	9,039	3,509	9,799	11,015	15,588	13,617	10,330	1,080	750	1,174	720	-	533	9,265	8,136	13,354	1,504
Rutsiro	1,215	812	-	734	-	14,744	6,840	4,723	8,943	12,170	17,949	14,989	9,246	797	659	818	534	-	422	12,666	4,946	13,642	5,974
Rubavu	1,302	626		-	-	12,094	7,103	8,353	5,434	12,652	16,191	12,075	10,913	761	549	794	510	637	648	12,063	6,790	30,353	7,838
Nyabihu	1,253	-	-	1,472	-	10,049	6,277	9,152	8,952	10,094	15,623	8,609	7,547	1,200	764	1,214	671	-	684	18,073	7,009	6,074	6,252
Ngororero	1,117	428	-	1,236	-	12,157	6,521	5,281	8,861	11,055	14,129	12,782	10,624	873	559	912	523	-	435	10,873	8,307	5,582	6,706
Rusizi	1,008	918	5,102	-	270	10,239	7,941	6,532	8,282	12,925	16,777	13,504	9,683	802	736	977	527	469	472	7,110	6,985	3,047	3,056
Nyamasheke	886	1,181	4,675	741	294	12,870	7,485	2,633	7,696	11,774	12,892	12,588	11,155	842	567	910	611	566	410	8,106	5,601	-	3,319
Rulindo	1,023	1,083	3,635	1,231	541	15,927	7,977	4,634	6,521	12,212	17,723	12,107	10,095	838	700	913	507	-	529	9,250	6,671	4,036	7,051
Gakenke	852	961	-	936	-	16,232	9,888	4,593	7,541	11,469	18,121	14,541	9,119	858	710	872	515	-	391	13,780	6,492	17,165	4,537
Musanze	1,523	1,364	-	1,628	-	12,201	9,798	9,189	10,328	10,918	14,165	7,911	9,303	1,265	836	1,283	583	-	499	10,812	4,840	10,088	9,054
Burera	1,252	1,560	-	1,490	-	11,264	8,883	7,703	7,646	12,989	17,848	13,855	7,871	1,093	589	1,111	606	-	-	11,381	5,272	26,299	316
Gicumbi	1,050	1,423	-	982	359	15,086	8,043	6,018	7,144	11,746	18,451	9,453	9,341	921	737	976	704	523	555	7,907	3,486	12,048	3,149
Rwamagana	859	1,141	5,350	-	762	17,429	7,348	3,564	6,461	14,557	18,408	9,750	8,083	632	633	617	702	450	559	7,416	1,255	6,907	3,802
Nyagatare	1,497	1,381	4,393	-	-	20,468	4,632	3,940	9,411	14,919	19,202	8,757	10,286	877	869	1,030	406	413	372	6,641	5,783	1,989	26,878
Gatsibo	1,351	1,306	4,998	-	722	18,241	9,495	4,522	7,050	13,969	16,726	11,173	10,898	694	670	867	477	520	552	8,723	5,486	3,775	1,955
Kayonza	1,233	1,221	4,220	-	456	15,783	5,831	3,796	5,713	15,750	18,292	12,671	9,094	723	718	1,022	526	645	491	9,252	5,438	4,387	8,124
Kirehe	2,269	1,082	4,716	-	553	16,658	6,688	3,594	5,064	16,186	20,306	10,491	10,579	735	722	759	501	443	410	7,416	4,393	9,726	3,285
Ngoma	766	1,195	3,614	-	625	15,262	6,238	5,186	3,695	15,503	18,530	8,518	11,812	847	829	943	470	488	439	8,090	3,087	22,076	8,226
Bugesera	909	898	4,551	-	777	14,090	5,344	2,651	6,199	10,935	14,214	11,592	9,039	684	685	559	355	449	400	8,277	4,524	24,616	11,219
National	1,254	1,152	4,212	1,265	527	14,836	7,453	6,777	7,831	12,329	17,455	11,422	9,495	789	720	904	575	480	430	9,607	5,640	12,048	4,404
SSF	1,201	1,152	2,272	1,263	527	14,842	7,454	6,710	7,831	12,331	17,470	11,424	9,495	786	715	904	576	480	425	9,663	5,681	10,933	4,392
LSF	4,071	1,107	4,236	1,625	789	3,006	4,194	15,972	-	8,580	8,329	6,095	12,768	2,040	2,050	1,576	272	135	650	4,927	3,812	30,548	5,053

Source: NISR, SAS 2023

Table 21:Season C_2023_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	-	-	-	1,316	1,316	-	-	-	14,755
Gasabo	5,506	-	9,265	448	448	-	-	-	11,309
Kicukiro	-	-	-	1,131	1,131	-	-	-	16,779
Nyanza	-	-	-	770	1,046	-	1,077	-	10,578
Gisagara	257	-	3,387	850	864	-	-	-	21,540
Nyaruguru	3,562	-	4,952	975	966	1,860	-	-	30,750
Huye	914	-	2,133	852	857	-	1,140	-	14,728
Nyamagabe	9,926	-	10,313	479	655	-	587	-	4,843
Ruhango	3	-	4,877	963	990	-	715	-	23,225
Muhanga	1,695	-	5,662	865	858	1,303	609	42	21,134
Kamonyi	629	-	4,366	1,072	1,077	-	-	-	9,652
Karongi	4,433	-	7,235	574	655	-	391	-	30,755
Rutsiro	6,321	-	7,473	-	-	-	1,053	-	13,356
Rubavu	7,338	-	7,595	-	-	-	-	-	5,939
Nyabihu	8,430	-	8,436	824	-	1,283	-	-	3,144
Ngororero	2,453	-	6,800	309	331	-	-	-	111,170
Rusizi	840	-	3,373	913	914	-	-	-	12,215
Nyamasheke	18	-	2,442	-	-	-	-	-	15,444
Rulindo	7,889	-	8,844	-	-	-	-	-	17,357
Gakenke	5,583	-	7,271	598	626	-	-	-	24,991
Musanze	9,350	-	11,334	1,725	1,313	1,956	406	-	26,154
Burera	9,477	-	10,502	-	-	-	-	-	248,045
Gicumbi	6,961	-	9,329	1,615	1,669	-	960	-	34,731
Rwamagana	579	-	11,566	1,109	1,109	-	-	-	16,022
Nyagatare	-	-	-	2,702	2,702	-	-	8,730	12,924
Gatsibo	2,275	-	11,962	-	-	-	-	-	15,393
Kayonza	1,588	-	8,327	1,463	1,503	941	-	-	21,106
Kirehe	2,218	-	8,586	1,245	1,245	1,233	1,763	-	20,985
Ngoma	350	-	5,530	1,254	1,254	-	-	-	19,897
Bugesera	-	-	-	1,147	1,147	-	1,607	-	16,058
National	4,971	-	8,691	1,066	1,079	403	923	444	15,937

Source: NISR, SAS 2023

Table 22:Season A 2023_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	Total
Nyarugenge	693	1	-	-	-	1,831	1,725	162	88	9,959	2,807	1,779	5,374	695	688	7	-	3	35	1,529	54	482	2,067	19,324
Gasabo	3,015	-	1,125	-	-	10,612	8,873	2,364	314	20,625	9,949	3,306	7,370	4,168	3,812	356	19	168	261	4,616	52	5,209	21	61,442
Kicukiro	1,530	-	173	-	0	533	3,133	40	314	4,920	1,917	858	2,144	458	458	-	2	4	55	712	-	160	51	12,085
Nyanza	7,443	314	1,018	-	-	59,472	13,474	859	916	29,194	7,829	4,926	16,439	5,009	4,375	633	32	92	354	4,607	272	1,800	-	124,856
Gisagara	10,689	769	8,184	-	15	17,330	14,587	762	2,350	31,377	6,383	6,289	18,705	6,237	5,789	449	26	74	873	2,177	341	2,344	140	98,275
Nyaruguru	8,038	-	-	-	-	10,768	42,484	9,167	3,228	20,727	7,410	3,141	10,176	4,343	762	3,580	236	-	239	1,912	181	6,928	43	108,295
Huye	5,590	-	3,947	-	30	50,655	19,406	3,410	1,362	29,448	9,707	5,545	14,196	4,237	2,987	1,250	54	24	582	3,576	-	2,109	58	124,490
Nyamagabe	7,658	-	39	47	7	15,604	52,912	22,811	1,954	22,299	4,220	2,286	15,792	4,681	1,422	3,259	979	19	226	3,083	371	-	0	132,690
Ruhango	4,213	16	3,553	-	3	91,251	11,658	554	1,917	24,048	3,909	3,175	16,964	2,854	2,120	734	27	91	313	2,880	-	2,284	411	146,072
Muhanga	2,268	-	275	-	196	24,871	28,295	1,385	16,465	63,186	11,465	7,587	44,134	2,171	615	1,556	16	8	225	3,751	345	15,967	3,122	162,547
Kamonyi	7,023	-	634	-	-	32,617	11,866	2,220	1,586	47,916	8,563	4,708	34,645	2,530	2,272	258	5	186	738	5,170	5,266	4,674	1	122,430
Karongi	10,998	-	-	33	-	15,331	38,134	9,108	6,848	51,758	10,443	7,202	34,113	5,124	1,025	4,099	95	-	487	5,321	284	3,462	46	147,029
Rutsiro	8,360	-	-	113	-	2,378	29,470	27,529	8,879	35,768	9,272	3,366	23,130	2,510	233	2,277	299	-	461	1,885	3,237	257	3,794	124,940
Rubavu	4,168	193	-	-	-	-	4,694	67,996	597	16,689	5,239	1,055	10,395	7,536	358	7,178	338	-	384	16,729	-	14,092	14,242	147,658
Nyabihu	5,749	473	-	608	-	1,322	22,813	109,579	25	3,463	994	832	1,637	8,647	159	8,487	937	-	-	8,887	63	1,829	1,489	165,883
Ngororero	4,418	488	-	460	-	17,413	33,963	11,186	7,002	33,432	6,420	5,520	21,492	7,960	642	7,318	172	-	217	3,263	483	425	2,709	123,589
Rusizi	11,010	65	6,734	-	-	18,290	13,636	1,011	11,521	29,435	8,954	1,714	18,767	7,656	6,495	1,161	77	241	808	7,896	277	316	104	109,076
Nyamasheke	6,753	74	1,223	-	51	26,600	15,030	520	6,787	22,418	6,569	2,416	13,433	4,723	1,111	3,612	57	238	828	2,692	458	-	1,214	89,667
Rulindo	7,265	-	54	60	-	11,114	29,683	5,070	365	22,454	7,895	3,817	10,742	6,162	2,365	3,797	347	10	259	9,759	287	1,335	1,421	95,645
Gakenke	17,111	-	76	80	84	15,021	50,820	5,590	8,678	68,845	13,732	6,919	48,194	5,056	653	4,403	131	138	188	3,540	2,517	1,639	1,498	181,012
Musanze	10,692	3,208	-	1,044	-	194	17,417	47,970	569	8,933	4,436	885	3,613	6,594	394	6,200	258	-	31	4,563	697	439	7,570	110,179
Burera	18,290	2,571	-	885	-	485	25,612	55,628	280	8,409	4,657	197	3,554	12,970	445	12,525	1,233	-	2	2,553	-	1,542	2,012	132,472
Gicumbi	9,809	158	-	112	14	9,584	68,375	28,907	66	20,534	10,563	3,617	6,354	13,511	2,873	10,638	988	145	93	3,115	235	9,067	-	164,716
Rwamagana	10,425	38	1,584	-	341	23,263	15,444	6,142	269	77,966	56,396	8,303	13,268	5,858	5,841	17	30	386	152	6,460	653	6,038	2,617	157,666
Nyagatare	78,586	24,295	7,034	-	832	14,115	8,852	4,131	549	75,762	49,997	5,368	20,396	14,417	12,384	2,032	347	653	1,148	3,347	781	2,269	9	237,126
Gatsibo	27,413	4,189	8,594	1	310	19,619	20,678	10,850	246	123,320	81,723	10,769	30,828	12,657	11,128	1,529	-	488	457	3,881	698	-	475	233,879
Kayonza	21,260	3,777	6,892	-	421	48,531	15,007	6,440	1,004	63,350	47,947	4,921	10,482	10,031	9,812	219	7	409	224	3,947	1,422	263	549	183,534
Kirehe	47,376	2,508	3,659	77	47	21,090	10,514	6,277	427	109,605	71,789	5,386	32,429	14,721	14,041	680	108	308	1,465	2,239	2,129	100	374	223,024
Ngoma	25,472	328	3,044	-	348	32,318	13,645	6,088	376	97,229	61,858	7,273	28,097	10,429	9,391	1,038	5	349	553	1,710	1,217	6,697	1,175	200,981
Bugesera	7,561	2,832	5,846	7	7	16,480	25,398	597	278	46,338	22,930	6,209	17,199	3,265	3,251	14	9	652	114	6,898	238	6,441	264	123,224
National	390,879	46,296	63,688	3,527	2,706	608,693	667,598	454,355	85,259	1,219,408	555,973	129,371	534,065	197,212	107,905	89,307	6,834	4,687	11,771	132,699	22,556	98,164	47,473	**4,063,804**

Source: NISR, SAS 2023

Table 23:Season B 2023_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	Total
Nyarugenge	406	288	-	-	-	2,320	849	112	632	7,717	2,445	843	4,429	1,031	1,000	32	-	9	118	879	65	805	1,499	16,730
Gasabo	1,517	3,946	1,261	-	-	5,295	7,612	1,309	119	16,724	6,363	5,701	4,660	2,919	2,595	323	26	116	240	9,611	0	4,721	164	55,579
Kicukiro	410	938	285	-	-	1,397	2,052	-	1,040	4,969	1,771	1,168	2,030	1,053	1,037	17	-	9	121	1,578	73	182	720	14,826
Nyanza	3,282	4,631	1,690	-	67	28,108	14,779	1,015	3,689	15,404	4,822	3,988	6,594	7,756	6,484	1,272	37	261	862	5,578	308	2,367	1,273	91,107
Gisagara	2,859	3,633	9,925	-	146	49,446	18,442	177	2,923	20,214	5,232	5,493	9,489	8,513	7,193	1,319	3	238	1,354	4,002	2,144	214	266	124,497
Nyaruguru	284	1,918	-	230	-	21,254	38,132	11,483	2,324	8,364	3,241	1,958	3,164	5,073	507	4,565	163	7	605	6,421	372	2,719	1,018	100,365
Huye	941	6,248	2,206	-	32	24,727	20,294	1,434	4,207	12,991	4,280	3,604	5,107	5,076	3,152	1,924	90	20	1,012	2,372	296	306	1,416	83,667
Nyamagabe	1,238	3,666	37	3,212	-	16,420	42,307	18,262	4,414	12,384	1,415	1,933	9,037	3,955	403	3,552	622	-	313	1,920	433	2,297	842	112,322
Ruhango	1,175	2,453	4,117	-	15	87,659	12,265	530	3,925	18,796	2,154	3,205	13,437	7,169	5,631	1,538	31	735	1,743	3,545	348	4,153	10,323	158,981
Muhanga	1,225	66	254	4	-	38,522	37,991	406	14,442	65,767	8,803	7,076	49,888	3,828	1,481	2,347	14	-	827	5,085	545	4,577	5,064	178,615
Kamonyi	2,260	3,277	750	-	-	26,004	21,734	1,544	8,545	48,583	9,401	7,283	31,899	5,559	4,714	845	25	399	1,678	4,170	5,687	3,778	1,335	135,327
Karongi	890	2,317	-	215	-	28,111	30,495	3,492	9,352	50,899	6,050	4,660	40,190	7,733	1,197	6,536	235	-	794	7,013	215	5,555	1,469	148,785
Rutsiro	1,601	61	-	364	-	12,376	18,949	17,166	6,328	30,837	7,343	10,042	13,451	3,763	422	3,341	305	-	594	1,484	1,622	3,799	11,461	110,709
Rubavu	2,595	288	-	-	-	2,815	5,716	51,390	758	13,297	5,067	1,832	6,398	3,936	381	3,555	228	28	357	26,206	353	18,488	6,593	133,049
Nyabihu	4,525	-	-	2,833	-	899	13,243	75,683	234	3,275	1,341	1,080	855	3,106	63	3,043	373	-	91	13,948	836	795	609	120,450
Ngororero	4,538	10	-	2,347	-	5,825	37,412	7,206	7,282	40,219	2,972	4,911	32,335	4,256	303	3,952	110	-	545	3,544	831	637	3,919	118,679
Rusizi	1,319	141	7,261	-	1	102,447	19,313	467	6,336	19,886	10,133	2,485	7,268	8,733	5,844	2,888	26	116	512	3,026	2,494	122	7,202	179,401
Nyamasheke	557	26	1,699	22	18	48,206	30,355	214	3,168	19,604	5,291	2,787	11,527	5,172	689	4,483	118	625	630	3,248	1,139	-	10,714	125,515
Rulindo	1,268	5,303	64	116	3	15,499	24,720	5,873	689	30,873	9,335	8,028	13,509	8,635	2,537	6,099	188	-	313	7,029	293	735	7,094	108,694
Gakenke	1,292	642	-	389	-	21,095	56,388	4,856	12,859	67,283	14,850	17,187	35,246	10,655	750	9,905	87	-	351	2,292	1,334	4,285	5,102	188,911
Musanze	4,303	1,299	-	2,185	-	295	18,347	46,524	1,449	7,232	3,891	1,509	1,832	8,846	235	8,611	326	-	4	8,443	1,153	60	8,164	108,629
Burera	2,718	10,118	-	1,056	-	397	28,551	32,704	86	8,727	5,675	617	2,435	13,494	250	13,244	604	-	-	10,415	593	2,659	37	112,158
Gicumbi	2,544	17,714	-	156	8	10,014	42,766	15,354	500	27,325	11,192	5,825	10,309	12,074	2,235	9,839	806	182	89	3,124	222	13,173	473	146,525
Rwamagana	3,967	11,620	2,626	-	198	30,750	10,380	3,294	664	63,935	48,600	6,865	8,470	6,798	6,631	167	171	606	303	8,453	390	3,568	3,726	151,448
Nyagatare	34,073	6,191	8,095	-	157	19,657	6,997	2,422	728	71,852	49,491	3,809	18,552	25,501	24,033	1,467	16	741	424	4,505	459	1,359	6,003	189,179
Gatsibo	12,885	9,506	8,331	-	111	13,525	18,248	7,755	2,605	90,232	56,147	11,118	22,968	12,809	10,825	1,983	46	1,548	1,170	5,555	1,204	247	5,210	190,988
Kayonza	9,456	15,046	7,654	-	206	47,225	9,224	6,906	2,044	58,793	46,722	4,793	7,278	13,639	13,329	310	36	666	275	7,051	1,079	245	5,965	185,510
Kirehe	6,125	14,362	4,477	-	62	30,618	9,448	4,558	3,309	90,902	65,806	4,130	20,966	15,520	9,896	5,625	117	391	559	1,982	192	304	3,841	186,767
Ngoma	1,655	8,255	3,110	-	555	24,611	7,771	3,783	226	98,881	70,149	4,889	23,843	14,660	12,192	2,468	12	432	687	2,768	1,206	8,463	6,882	183,958
Bugesera	5,706	5,464	6,099	-	67	21,172	15,406	756	1,789	63,413	23,885	10,447	29,081	12,934	12,859	75	8	1,378	717	6,283	199	11,831	4,250	157,472
National	117,613	139,425	69,940	13,129	1,646	736,686	620,185	326,677	106,665	1,089,377	493,865	149,266	446,246	244,194	138,870	105,324	4,822	8,509	17,288	171,530	26,084	102,445	122,632	3,918,845

Source: NISR, SAS 2023

Table 24:Season C 2023_Crop production by crop type per district (MT)

District/Crop	Sweet potatoes	Irish potatoes	Beans	Bush bean	Climbing bean	Peas	Soya beans	Vegetables	*Total*
Nyarugenge	221	559	102	102	-	-	38	2,060	2,980
Gasabo	813	535	1	1	-	-	-	2,318	3,667
Kicukiro	78	-	149	149	-	-	16	452	695
Nyanza	345	-	78	50	28	235	-	7,556	8,214
Gisagara	1,658	18	211	211	-	-	40	3,376	5,303
Nyaruguru	1,811	1,661	139	119	20	3	-	730	4,343
Huye	2,025	249	298	245	53	70	-	3,368	6,011
Nyamagabe	578	2,738	2	2	-	5	-	251	3,574
Ruhango	825	0	84	84	-	22	-	1,398	2,329
Muhanga	1,416	227	118	117	2	10	88	1,411	3,271
Kamonyi	1,189	63	364	364	-	-	177	3,999	5,792
Karongi	228	387	1	1	-	5	4	468	1,093
Rutsiro	85	682	-	-	-	2	-	119	889
Rubavu	1,100	6,376	115	2	113	8	-	2,956	10,555
Nyabihu	423	20,476	27	1	26	34	-	1,037	21,996
Ngororero	176	402	1	1	-	-	-	319	898
Rusizi	232	171	25	25	-	-	-	5,131	5,559
Nyamasheke	14	1	-	-	-	-	-	1,142	1,157
Rulindo	420	1,515	8	8	-	20	-	1,330	3,294
Gakenke	662	2,543	8	8	-	-	74	853	4,140
Musanze	1,765	11,636	34	9	25	42	-	7,318	20,795
Burera	5,061	28,924	-	-	-	-	-	990	34,975
Gicumbi	1,556	3,219	110	110	-	1	-	744	5,629
Rwamagana	235	75	114	114	-	-	2	3,370	3,797
Nyagatare	620	809	35	35	-	-	119	6,868	8,452
Gatsibo	96	48	-	-	-	-	-	1,919	2,063
Kayonza	-	232	37	36	1	-	-	3,216	3,485
Kirehe	358	426	46	45	1	1	-	3,024	3,855
Ngoma	388	7	261	261	-	-	-	576	1,232
Bugesera	219	-	1,116	1,116	-	2	5	5,205	6,546
National	24,595	83,981	3,485	3,217	268	461	563	73,504	186,588

Source: NISR, SAS 2023

Table 25:Season A 2023_Use of crop production by farmers (%)

Crops	Sold	Own consumption	Wages for hired labour	Farm rent	Offered as gift	Barter trade/Exchanged with other things	Seeds	Fodder purpose	Stored	Post harvesting losses	Other usage
Maize	32.2	55.0	1.2	1.9	5.6	0.0	1.0	0.5	1.8	0.2	0.5
Sorghum	59.5	26.6	2.1	3.2	4.0	0.0	3.0	0.0	0.6	0.6	0.5
Paddy rice	82.2	15.1	0.4	0.0	0.4	0.0	0.5	0.0	0.0	1.3	0.2
Wheat	36.4	43.9	0.0	0.0	6.7	0.0	12.9	0.0	0.1	0.1	0.0
Other cereals	36.0	42.3	0.5	3.0	5.8	0.0	8.4	0.0	0.9	1.4	1.7
Sweet potato	24.8	67.3	1.0	0.4	4.6	0.0	0.0	1.8	0.0	0.1	0.1
Irish potato	38.3	44.9	0.7	0.4	3.9	0.0	11.1	0.0	0.2	0.2	0.2
Yam & Taro	20.6	66.8	1.0	0.8	5.4	0.0	5.5	0.0	0.0	0.0	0.0
Cassava	40.9	54.8	0.7	0.7	2.4	0.0	0.0	0.1	0.0	0.1	0.2
Bush bean	11.2	68.2	1.1	1.6	2.8	0.0	13.3	0.0	1.1	0.2	0.4
Climbing bean	9.8	66.7	0.7	0.6	5.4	0.1	15.2	0.1	1.1	0.1	0.2
Pea	37.3	50.0	0.4	0.2	3.0	0.0	8.6	0.0	0.2	0.1	0.2
Groundnut	14.6	65.8	0.7	0.7	1.6	0.0	16.3	0.0	0.2	0.0	0.1
Soybean	18.7	51.0	0.4	1.1	3.4	0.0	23.9	0.2	0.8	0.2	0.3
Cooking banana	35.0	61.1	0.5	0.1	2.8	0.0	0.0	0.0	0.0	0.0	0.4
Dessert banana	64.9	31.4	0.1	0.1	2.4	0.0	0.0	0.0	0.0	0.4	0.7
Banana for beer	78.9	15.8	0.0	0.1	4.1	0.0	0.0	0.0	0.0	0.9	0.3
Vegetables	79.0	16.6	0.1	0.0	2.7	0.0	0.9	0.0	0.0	0.5	0.1
Fruits	78.0	15.3	0.0	0.0	5.8	0.0	0.0	0.0	0.0	0.5	0.4
Fodder crops	10.4	0.0	0.0	0.0	0.6	0.0	0.0	88.7	0.1	0.0	0.3
Other crops	86.5	9.0	0.0	0.0	1.5	0.0	0.1	0.0	0.0	0.1	2.7

Source: NISR, SAS 2023

Table 26:Season B 2023_Use of crop production by farmers (%)

Crops	Sold	Own consumption	Wages for hired labour	Farm rent	Offered as gift	Barter trade/Exchanged with other things	Seeds	Fodder purpose	Stored	Post harvesting losses	Other usage
Maize	22.8	68.8	0.5	1.3	4.6	0.0	0.6	0.3	0.5	0.1	0.4
Sorghum	45.2	39.5	0.8	2.0	7.4	0.0	3.9	0.1	0.8	0.2	0.2
Paddy rice	79.6	18.7	0.1	0.0	0.4	0.0	0.5	0.0	0.0	0.6	0.1
Wheat	47.2	37.6	0.1	0.0	5.2	0.0	9.2	0.1	0.2	0.1	0.3
Other cereals	40.8	45.8	0.9	1.6	1.8	0.0	7.9	0.0	0.7	0.4	0.1
Sweet potato	23.5	68.0	1.1	0.8	4.6	0.0	0.0	1.9	0.0	0.0	0.1
Irish potato	40.8	42.6	0.5	0.2	3.6	0.0	12.1	0.0	0.0	0.1	0.1
Yam & Taro	23.2	67.9	0.4	0.6	4.4	0.0	3.3	0.0	0.0	0.0	0.2
Cassava	33.5	62.2	0.5	1.0	2.4	0.0	0.0	0.1	0.2	0.0	0.1
Bush bean	19.4	58.9	1.0	2.0	4.1	0.1	12.8	0.0	1.2	0.2	0.2
Climbing bean	13.8	61.9	0.7	0.5	6.5	0.1	15.2	0.0	1.0	0.1	0.3
Pea	32.1	54.2	0.0	0.2	2.6	0.0	10.7	0.1	0.2	0.0	0.0
Groundnut	27.1	55.1	0.2	0.6	2.7	0.0	13.8	0.0	0.3	0.0	0.1
Soybean	19.7	60.5	0.5	0.7	2.9	0.2	14.7	0.2	0.4	0.0	0.2
Cooking banana	36.7	58.7	0.7	0.2	3.1	0.0	0.0	0.0	0.0	0.0	0.4
Dessert banana	65.9	30.5	0.2	0.0	2.4	0.0	0.0	0.0	0.0	0.2	0.7
Banana for beer	77.4	16.2	0.1	0.1	5.0	0.0	0.0	0.0	0.0	0.9	0.3
Vegetables	82.4	13.3	0.1	0.0	2.9	0.0	0.3	0.0	0.0	0.7	0.2
Fruits	80.8	14.4	0.1	1.1	2.9	0.0	0.0	0.0	0.0	0.0	0.8
Fodder crops	4.2	0.0	0.4	0.0	0.8	0.5	0.0	93.6	0.0	0.0	0.4
Other crops	91.1	5.3	0.1	0.2	0.9	0.0	0.0	0.0	0.2	0.0	2.2

Source: NISR, SAS 2023

Table 27:Season C 2023_ Use of crop production by farmers (%)

Crops	Sold	Auto consumption	Wages for hired labour	Farm rent	Offered as gift	Barter trade / Exchanged with other things	Seeds	Fodder purposes	Stored	Post harvesting losses	Other usage
Sweet potato	29.0	59.8	1.4	1.5	6.2	0.0	0.0	1.9	-	0.1	0.1
Irish potato	44.8	41.7	0.5	0.2	4.9	0.0	7.3	0.1	0.1	0.2	0.2
Legumes and Pulses											
Bush bean	18.7	62.2	0.5	0.5	4.9	0.0	12.4	-	0.3	0.2	0.3
Climbing bean	18.8	69.4	-	-	6.7	-	4.7	-	0.3	0.0	0.1
Pea	75.2	16.1	0.4	0.4	1.5	0.1	6.1	-	0.3	0.0	-
Soybean	32.5	44.8	0.3	0.6	6.1	-	14.8	0.2	0.5	0.1	-
Vegetables and fruits											
Vegetables	77.0	18.1	0.1	0.2	3.6	0.0	0.2	0.0	0.0	0.5	0.3

Source: NISR, SAS 2023

Table 28:Sowing date per Season and District in 2023 (%)

District	Season A							Season B									Season C				
	Before 01/09	Between 01-15/09	Between 16-30/09	Between 01-15/10	Between16-31/10	After 31/10	Other season	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 season	Before 01/05	Between 01-31/05	Between 01-30/06	Between 01-31/07	After 31/07
Nyarugenge	1.87	7.18	15.8	36.18	4.84	2.56	31.57	0.09	3.69	1.82	10.93	24.32	16.51	1.47	0.70	40.47	8.39	9.82	36.71	37.07	8.01
Gasabo	6.9	45.33	13.88	5.11	0.97	1.17	26.64	3.18	8.79	2.86	10.71	20.23	14.82	7.02	3.16	29.21	12.51	49.59	29.31	4.37	4.23
Kicukiro	1.63	11.36	24.21	33.22	2.69	7.76	19.15	1.34	6.73	2.98	5.74	14.94	16.82	17.00	1.77	32.69	0.00	18.41	47.77	20.58	13.24
Nyanza	5.41	5.98	23.77	19.55	8.28	11.15	25.86	0.84	7.80	6.39	16.66	22.56	7.76	3.33	4.53	30.12	4.03	12.33	47.71	34.92	1.01
Gisagara	2.71	17.1	15.41	29.28	5.00	9.67	20.83	1.22	4.86	3.44	11.69	21.07	17.00	3.99	4.72	32.01	1.41	14.10	24.99	50.63	8.87
Nyaruguru	10.28	13.3	18.41	18.49	10.96	12.39	16.17	4.65	8.60	2.44	10.05	16.16	11.63	6.23	11.99	28.26	3.17	28.98	26.00	32.41	9.43
Huye	7.34	18.74	17.64	20.67	3.32	9.93	22.36	1.70	8.60	6.84	17.20	13.21	5.60	1.46	5.61	39.78	23.92	17.37	32.88	20.34	5.49
Nyamagabe	12.51	28.22	19.58	12.34	4.04	8.17	15.15	3.23	6.33	8.79	21.21	10.29	10.40	6.60	10.00	23.15	6.12	44.00	38.10	10.31	1.46
Ruhango	4.71	20.67	21.31	16.87	6.05	6.59	23.79	1.52	6.71	4.61	32.81	12.01	5.83	2.69	5.02	28.79	19.05	18.14	36.08	22.61	4.12
Muhanga	13.93	20.48	12.05	6.10	3.49	13.31	30.63	1.61	2.55	2.58	5.65	13.86	12.13	5.40	11.38	44.84	1.9	28.04	48.92	20.49	0.65
Kamonyi	4.63	19.1	14.41	21.24	2.41	7.81	30.41	1.02	6.74	3.54	17.40	18.77	10.58	2.12	7.10	32.72	0.39	27.83	36.04	31.81	3.92
Karongi	15.16	29.78	11.53	12.56	2.72	5.47	22.78	1.01	6.76	3.91	14.32	17.87	10.98	2.61	5.58	36.97	20.27	22.59	45.85	11.29	0.00
Rutsiro	21.01	24.15	13.04	5.76	2.72	7.84	25.48	3.21	2.79	1.87	13.38	13.61	10.02	2.94	7.53	44.65	4.17	17.57	42.96	35.29	0.00
Rubavu	29.47	34.19	6.28	4.55	3.19	5.03	17.30	1.50	8.24	4.08	14.01	6.98	14.20	14.73	8.08	28.18	4.76	12.68	29.95	51.92	0.70
Nyabihu	27.06	34.85	13.85	5.80	3.41	7.78	7.24	3.29	4.37	2.44	14.02	23.51	17.73	11.77	5.88	16.99	5.96	26.96	51.61	15.47	0.00
Ngororero	19.75	29.24	7.35	4.83	3.54	10.55	24.75	1.93	4.55	3.38	18.66	17.33	7.67	6.10	7.04	33.33	5.73	28.15	63.47	2.19	0.47
Rusizi	4.73	15.06	37.76	21.22	3.68	2.12	15.43	0.51	2.26	1.60	5.56	18.71	11.05	4.62	3.06	52.63	25.36	22.62	22.03	16.14	13.85
Nyamasheke	4.65	39.65	14.75	4.92	1.73	5.91	28.38	0.10	3.48	1.74	13.97	14.19	9.48	5.30	2.85	48.89	17.44	38.62	31.65	12.28	0.00
Rulindo	12.92	36.84	13.96	6.74	1.71	4.95	22.88	1.76	9.96	6.66	7.92	10.30	22.81	9.07	5.53	26	5.82	63.53	17.17	9.60	3.88
Gakenke	15.81	24.32	13.34	7.61	5.76	4.80	28.35	3.59	4.91	3.07	3.92	10.17	14.84	11.92	5.68	41.89	4.44	57.01	25.37	12.74	0.44
Musanze	30.22	35.3	8.38	7.64	1.16	4.32	12.99	2.96	5.20	1.74	9.21	7.43	22.89	13.70	14.24	22.64	1.87	16.23	31.48	45.78	4.65
Burera	18.9	38.58	17.76	5.54	3.37	6.24	9.61	1.46	9.34	5.75	15.11	12.91	16.38	14.37	8.10	16.58	13.62	43.66	34.06	7.93	0.73
Gicumbi	9.3	37.65	19.22	6.23	2.14	6.27	19.19	1.79	6.65	6.87	9.48	17.09	17.75	7.03	10.01	23.33	9.13	54.56	13.11	17.46	5.73
Rwamagana	1.94	21.56	26.29	12.41	1.60	2.77	33.44	1.62	7.34	3.66	13.13	17.95	11.10	2.53	2.91	39.78	1.42	19.79	41.23	36.23	1.34
Nyagatare	13.04	48.57	15.62	4.64	0.89	1.88	15.35	0.45	1.16	1.16	4.45	22.44	44.23	6.07	0.78	19.26	5.6	59.04	21.08	13.58	0.70
Gatsibo	3.85	33.3	22.15	4.67	0.75	1.79	33.49	0.81	2.61	2.52	4.60	13.20	28.67	4.91	1.05	41.62	1.93	47.86	24.09	18.43	7.68
Kayonza	1.05	19.91	16.31	24.60	6.81	5.96	25.36	3.16	6.39	1.73	8.64	17.24	26.91	5.15	1.62	29.17	5.71	25.39	47.29	20.41	1.20
Kirehe	1.33	3.78	16.63	33.98	10.94	4.13	29.22	0.86	5.82	4.85	12.53	20.11	12.54	2.54	0.25	40.52	24.07	14.25	19.6	28.46	13.62
Ngoma	1.11	16.52	30.81	17.18	3.43	3.03	27.91	0.81	5.62	2.21	5.94	22.53	17.91	2.13	1.76	41.1	3.00	10.45	24.05	52.76	9.74
Bugesera	3.08	16.19	19.45	20.84	4.20	10.19	26.04	0.77	3.64	2.00	4.71	11.95	35.81	8.74	3.10	29.28	0.31	12.40	34.21	51.52	1.57
National	10.24	25.38	17.5	13.27	3.85	6.6	23.16	1.74	5.77	3.82	12.08	15.72	15.77	5.94	5.71	33.45	7.96	28.48	33.63	26.02	3.9

Source: NISR, SAS 2023

Table 29: Sowing dates per Season and crop type in 2023 (%)

Crops	Before 01/09	Between 01-15 /09	Between 16- 30/09	Between 01-15/10	Between16- 31/10	After 31/10	Other season	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 season	Before 01/05	Between 01-31/05	Between 01-30/06	Between 01-31/07	After 31/07
Maize	9.5	37.0	26.9	18.1	4.3	4.3	0.0	0.8	3.1	5.3	19.8	31.3	30.8	7.2	1.59	0.0					
Sorghum	34.4	38.4	18.9	7.3	0.7	0.4	0.0	5.9	45.6	25.9	15.9	4.7	1.6	0.5	0.09	0.0					
Paddy rice	67.8	4.5	2.7	5.7	0.5	18.9	0.0	4.8	20.2	46.2	8.6	10.5	3.0	0.5	6.15	0.0					
Wheat	5.0	13.6	3.2	25.2	19.1	33.9	0.0	1.8	0.3	1.3	2.2	4.3	25.1	31.2	33.84	0.0					
Other cereals	2.3	40.6	22.8	24.2	4.8	5.3	0.0	0.0	0.0	2.0	19.6	40.5	29.7	8.3	0	0.0					
Sweet potato	35.8	13.3	7.5	11.0	6.0	26.4	0.0	20.8	9.5	5.3	12.8	9.2	12.9	8.5	21.18	0.0	14.7	31.9	32.3	20.0	1.2
Irish potato	15.4	31.8	19.5	16.8	5.6	10.9	0.0	1.6	4.9	4.0	17.0	20.2	19.5	13.3	19.46	0.0	5.9	41.6	31.9	19.0	1.5
Taro & Yams	23.9	25.6	15.7	13.5	7.3	14.0	0.0	56.7	12.2	2.0	10.5	4.5	4.6	1.9	7.61	0.0					
Cassava	6.8	27.3	16.3	11.2	2.9	7.0	28.5	1.4	4.6	2.2	7.7	6.3	4.9	2.5	5.62	64.9					
Bush bean	2.4	28.9	31.8	28.7	5.9	2.4	0.0	0.0	0.5	1.3	19.6	34.8	35.4	7.4	1.03	0.0	0.4	7.7	36.0	46.3	9.7
Climbing bean	6.5	50.7	27.6	12.3	2.5	0.4	0.0	0.1	1.6	1.4	18.2	30.8	32.9	12.7	2.32	0.0	0.0	1.4	44.6	48.0	5.9
Pea	14.8	38.0	22.6	12.2	5.5	7.0	0.0	0.3	1.1	1.1	15.5	22.2	22.4	19.0	18.47	0.0	1.4	21.5	51.9	22.3	2.9
Groundnut	1.8	39.4	34.1	20.0	3.3	1.4	0.0	0.2	2.1	2.1	25.3	32.9	34.1	3.2	0	0.0					
Soybean	2.6	33.9	27.5	22.3	7.9	5.9	0.0	0.0	1.3	4.1	24.8	34.8	25.7	8.1	1.3	0.0	1.6	5.3	42.7	50.0	0.5
Cooking banana	0.3	2.6	0.4	0.7	0.5	0.7	94.9	0.1	0.4	0.1	0.1	0.2	0.1	0.0	0.12	99.0					
Dessert banana	0.3	1.0	0.1	0.4	0.0	0.3	98.0	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.35	99.1					
Banana for beer	0.1	1.6	0.3	0.6	0.3	0.6	96.5	0.1	0.2	0.1	0.1	0.0	0.3	0.1	0	99.0					
Vegetables	24.0	13.4	8.8	17.8	10.2	25.8	0.0	14.0	6.9	3.6	8.9	15.5	12.8	13.9	24.39	0.0	12.4	33.7	28.6	19.3	6.0
Fruits	3.1	8.2	5.6	3.9	0.6	1.9	76.6	0.0	3.9	1.5	0.0	0.0	2.8	0.0	2.38	89.4					
Fodder crops	2.8	3.1	0.0	0.8	0.0	1.9	91.4	0.5	0.0	0.1	0.8	1.5	0.5	3.9	8.0	84.8					
Other crops	63.0	7.9	2.2	5.4	3.7	9.0	8.8	1.1	0.5	0.9	2.2	0.3	1.3	0.4	1.0	92.2					

Source: NISR, SAS 2023

Table 30: Cultivated area by cropping system, per season and district (%) in 2023

District	Pure			Mixed		
	Season A	Season B	Season C	Season A	Season B	Season C
Nyarugenge	26.02	18.31	57.13	73.98	81.69	42.87
Gasabo	22.87	31.03	73.80	77.13	68.97	26.20
Kicukiro	24.48	23.97	68.11	75.52	76.03	31.89
Nyanza	36.39	31.90	74.69	63.61	68.10	25.31
Gisagara	31.86	31.21	60.83	68.14	68.79	39.17
Nyaruguru	43.17	47.39	82.95	56.83	52.61	17.05
Huye	21.48	21.12	61.10	78.52	78.88	38.90
Nyamagabe	44.57	50.39	78.06	55.43	49.61	21.94
Ruhango	42.60	34.82	71.69	57.40	65.18	28.31
Muhanga	30.00	26.49	56.29	70.00	73.51	43.71
Kamonyi	28.93	23.08	59.73	71.07	76.92	40.27
Karongi	41.76	44.28	69.02	58.24	55.72	30.98
Rutsiro	50.56	53.46	84.56	49.44	46.54	15.44
Rubavu	54.87	47.63	81.80	45.13	52.37	18.20
Nyabihu	49.17	53.26	81.81	50.83	46.74	18.19
Ngororero	36.45	33.57	79.98	63.55	66.43	20.02
Rusizi	22.18	36.93	31.22	77.82	63.07	68.78
Nyamasheke	32.75	39.67	62.19	67.25	60.33	37.81
Rulindo	33.49	35.61	80.89	66.51	64.39	19.11
Gakenke	31.82	32.28	69.85	68.18	67.72	30.15
Musanze	41.32	54.35	87.16	58.68	45.65	12.84
Burera	34.91	48.33	87.35	65.09	51.67	12.65
Gicumbi	37.93	40.00	54.35	62.07	60.00	45.65
Rwamagana	21.39	24.51	34.82	78.61	75.49	65.18
Nyagatare	32.26	23.61	78.33	67.74	76.39	21.67
Gatsibo	27.67	25.21	82.00	72.33	74.79	18.00
Kayonza	23.03	21.42	74.68	76.97	78.58	25.32
Kirehe	24.99	32.73	35.77	75.01	67.27	64.23
Ngoma	26.92	32.62	74.28	73.08	67.38	25.72
Bugesera	27.76	18.04	61.76	72.24	81.96	38.24
National	32.85	33.30	77.81	67.15	66.70	22.19
Small scale farmers	31.21	31.90	30.10	68.79	68.10	69.90
Large scale farmers/Site	96.34	95.48	83.44	3.66	4.52	16.56

Source: NISR, SAS 2023

Table 31:Season A 2023_ Use of improved seeds by farmer type per district (%)

District	Percentage of farmers who used improved seeds			Percentage of sampled plots in which improved seeds was used			Percentage of land size in which improved seeds were used		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	SSF
Nyarugenge	36.17	36.17	-	31.62	31.62	-	31.56	31.56	-
Gasabo	40.58	39.60	70.00	38.35	36.61	52.17	38.61	37.52	80.89
Kicukiro	57.44	57.29	66.67	53.07	53.36	40.00	56.96	57.32	37.55
Nyanza	33.41	32.06	100.00	29.86	28.78	64.71	30.07	28.03	98.75
Gisagara	44.97	42.96	85.71	39.24	37.60	72.00	46.54	38.58	94.10
Nyaruguru	32.83	30.75	100.00	28.23	26.16	91.67	27.87	26.86	99.77
Huye	44.99	42.45	88.00	39.09	36.94	67.57	40.42	37.83	92.93
Nyamagabe	19.43	19.05	100.00	15.79	14.65	87.50	14.87	14.76	97.02
Ruhango	29.54	28.79	66.67	25.83	25.09	58.33	28.28	26.96	68.93
Muhanga	19.07	17.79	100.00	16.24	14.66	100.00	15.81	14.19	100.00
Kamonyi	27.69	25.92	100.00	24.67	23.06	92.86	24.76	23.31	97.83
Karongi	34.28	34.12	100.00	26.68	26.53	100.00	26.79	26.75	100.00
Rutsiro	14.25	14.25	-	11.32	11.32		12.39	12.39	-
Rubavu	17.02	16.67	50.00	15.55	14.52	54.55	13.60	13.56	38.28
Nyabihu	22.68	22.68	-	19.62	19.62		18.99	18.99	-
Ngororero	17.16	17.16	-	13.90	13.90		13.85	13.85	-
Rusizi	41.09	40.67	60.00	33.77	33.01	60.00	36.11	33.25	86.30
Nyamasheke	29.67	28.98	71.43	24.69	23.78	85.71	24.72	23.79	95.26
Rulindo	34.74	34.68	40.00	32.67	32.35	39.13	32.36	32.23	71.98
Gakenke	34.78	34.78	-	30.04	30.04		30.19	30.19	-
Musanze	30.58	30.16	100.00	28.44	27.82	83.33	28.13	28.00	92.45
Burera	40.92	40.92	-	34.26	34.26		35.36	35.36	-
Gicumbi	25.98	25.72	100.00	23.39	23.08	75.00	22.30	22.25	91.60
Rwamagana	55.13	53.31	87.10	49.80	48.31	58.41	49.61	48.79	85.73
Nyagatare	53.45	50.18	100.00	49.33	45.33	73.15	49.90	47.49	98.73
Gatsibo	47.64	45.79	96.00	40.02	37.58	69.84	41.92	39.33	96.95
Kayonza	55.01	52.83	89.29	48.92	45.41	64.57	49.68	47.74	91.85
Kirehe	50.91	50.46	87.50	45.92	45.39	76.92	47.97	45.89	96.14
Ngoma	54.09	53.30	82.35	48.50	46.98	67.24	48.75	48.01	79.34
Bugesera	44.72	43.18	70.59	41.68	39.12	60.00	42.60	40.98	86.20
National	**37.13**	**35.98**	**85.71**	**33.10**	**31.42**	**65.54**	**34.48**	**32.93**	**92.02**

Source: NISR, SAS 2023

Table 32: Season B 2023_Use of improved seeds by farmer type per district (%)

District	Percentage of farmers who used improved seeds			Percentage of sampled plots in which improved seeds was used			Percentage of land size in which improved seeds were used		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	SSF
Nyarugenge	16.49	16.49	-	13.62	13.62	-	12.44	12.44	-
Gasabo	18.13	16.45	70.00	17.75	15.18	45.71	16.64	15.04	79.09
Kicukiro	31.11	31.07	33.33	28.38	28.70	16.67	31.25	31.99	6.62
Nyanza	27.38	26.75	71.43	25.12	24.72	50.00	26.26	25.13	84.49
Gisagara	18.90	17.32	66.67	16.64	15.23	66.67	23.14	14.67	93.62
Nyaruguru	8.28	7.01	50.00	8.50	6.81	44.44	7.90	7.26	62.54
Huye	13.67	11.41	85.71	12.43	10.29	58.33	12.66	10.43	92.33
Nyamagabe	9.32	8.70	100.00	9.23	7.69	81.82	8.26	7.98	98.54
Ruhango	12.55	10.48	85.71	10.66	8.63	73.68	10.50	8.10	95.80
Muhanga	13.44	12.86	75.00	10.78	10.30	60.00	10.45	10.00	94.11
Kamonyi	22.68	21.95	100.00	20.25	19.41	87.50	19.82	19.24	98.74
Karongi	14.79	14.57	100.00	12.90	12.53	100.00	12.74	12.68	100.00
Rutsiro	8.51	8.51	-	7.89	7.89		7.95	7.95	-
Rubavu	23.56	23.29	50.00	22.25	21.89	36.36	22.29	22.29	22.23
Nyabihu	28.38	28.38	-	25.06	25.06		24.46	24.46	-
Ngororero	29.31	29.31	-	26.58	26.58		27.35	27.35	-
Rusizi	6.64	5.91	40.00	5.95	5.32	33.33	10.59	6.26	85.07
Nyamasheke	14.75	13.88	55.56	13.33	12.53	55.56	14.24	13.44	67.56
Rulindo	16.31	15.55	80.00	15.85	14.05	73.33	13.75	13.54	73.53
Gakenke	8.84	8.84	-	7.88	7.88		8.02	8.02	-
Musanze	15.53	14.82	100.00	13.23	11.88	88.89	13.30	12.96	95.42
Burera	13.45	13.45	-	11.98	11.98		12.17	12.17	-
Gicumbi	12.01	11.71	100.00	11.06	10.40	100.00	10.08	10.01	100.00
Rwamagana	22.75	19.70	79.31	22.07	17.24	44.29	20.15	18.89	78.50
Nyagatare	60.24	57.92	94.59	56.04	52.50	76.11	57.71	56.34	94.86
Gatsibo	33.92	31.97	87.50	29.81	27.08	66.10	32.44	29.80	95.88
Kayonza	42.49	39.75	89.29	37.59	33.22	58.06	37.70	35.40	90.57
Kirehe	4.51	3.35	100.00	3.67	2.57	75.00	5.12	2.40	78.20
Ngoma	6.55	4.61	72.22	7.39	3.90	54.72	5.56	3.73	75.95
Bugesera	56.23	55.54	67.65	53.02	50.82	66.36	53.26	51.84	90.06
National	20.87	19.63	78.19	19.58	17.49	60.12	21.40	19.85	87.99

Source: NISR, SAS 2023

Table 33: Season C 2023_Use of improved seed types per district (%)

District	Percentage of farmers who used improved seeds			Percentage of sampled plots in which improved seeds was used			Percentage of land size in which improved seeds were used		
	Overall	SSF	SITE	Overall	SSF	SITE	Overall	SSF	SITE
Nyarugenge	23.33	4.00	37.14	13.62	13.62	-	12.44	12.44	-
Gasabo	43.84	27.27	50.98	17.75	15.18	45.71	16.64	15.04	79.09
Kicukiro	7.69	-	11.11	28.38	28.70	16.67	31.25	31.99	6.62
Nyanza	8.27	18.18	6.31	25.12	24.72	50.00	26.26	25.13	84.49
Gisagara	12.05	4.55	14.75	16.64	15.23	66.67	23.14	14.67	93.62
Nyaruguru	9.16	6.45	10.00	8.50	6.81	44.44	7.90	7.26	62.54
Huye	20.53	22.22	19.81	12.43	10.29	58.33	12.66	10.43	92.33
Nyamagabe	26.04	33.33	24.69	9.23	7.69	81.82	8.26	7.98	98.54
Ruhango	13.41	11.11	14.06	10.66	8.63	73.68	10.50	8.10	95.80
Muhanga	27.73	12.50	33.33	10.78	10.30	60.00	10.45	10.00	94.11
Kamonyi	36.67	25.00	40.91	20.25	19.41	87.50	19.82	19.24	98.74
Karongi	36.36	7.69	48.39	12.90	12.53	100.00	12.74	12.68	100.00
Rutsiro	1.64	-	1.79	7.89	7.89		7.95	7.95	-
Rubavu	38.16	40.00	27.27	22.25	21.89	36.36	22.29	22.29	22.23
Nyabihu	12.82	14.56	9.43	25.06	25.06		24.46	24.46	-
Ngororero	8.00	14.29	7.35	26.58	26.58		27.35	27.35	-
Rusizi	42.71	54.17	38.89	5.95	5.32	33.33	10.59	6.26	85.07
Nyamasheke	37.65	50.00	36.71	13.33	12.53	55.56	14.24	13.44	67.56
Rulindo	27.27	27.78	27.17	15.85	14.05	73.33	13.75	13.54	73.53
Gakenke	4.10	6.67	2.60	7.88	7.88		8.02	8.02	-
Musanze	11.17	21.15	7.09	13.23	11.88	88.89	13.30	12.96	95.42
Burera	8.06	2.75	15.58	11.98	11.98		12.17	12.17	-
Gicumbi	2.65	-	3.80	11.06	10.40	100.00	10.08	10.01	100.00
Rwamagana	18.87	6.25	24.32	22.07	17.24	44.29	20.15	18.89	78.50
Nyagatare	35.71	42.86	28.57	56.04	52.50	76.11	57.71	56.34	94.86
Gatsibo	66.10	85.71	63.46	29.81	27.08	66.10	32.44	29.80	95.88
Kayonza	25.42	9.09	29.17	37.59	33.22	58.06	37.70	35.40	90.57
Kirehe	29.11	28.57	29.23	3.67	2.57	75.00	5.12	2.40	78.20
Ngoma	20.31	18.75	20.83	7.39	3.90	54.72	5.56	3.73	75.95
Bugesera	23.96	24.24	23.81	53.02	50.82	66.36	53.26	51.84	90.06
National	20.72	18.09	21.89	19.58	17.49	60.12	21.40	19.85	87.99

Source: NISR, SAS 2023

Table 34: Seed use by crop type and season in 2023 (%)

Crop	Traditional seeds			Improved seeds		
	Season A	Season B	Season C	Season A	Season B	Season C
Maize	40.3	46.0		59.7	54.0	
Sorghum	100.0	100.0		-	-	
Paddy rice	94.2	95.6		5.8	4.4	
Wheat	97.4	81.1		2.6	18.9	
Other cereals	99.0	99.8		1.0	0.2	
Sweet potato	99.7	99.9	99.74	0.3	0.1	0.26
Irish potato	97.1	97.1	91.72	3.0	2.9	8.28
Taro & Yams	100.0	100.0		-	-	
Cassava	99.8	99.9		0.2	0.1	
Bush bean	99.7	99.5	98.72	0.3	0.5	1.28
Climbing bean	99.8	99.6	100.00	0.2	0.4	
Pea	100.0	100.0	100.00	-	-	
Groundnut	100.0	100.0		-	-	
Soybean	99.2	99.8	99.99	0.8	0.2	0.01
Cooking banana	100.0	100.0		0.1	0.1	
Dessert banana	98.5	99.2		1.6	0.9	
Banana for beer	99.6	99.6		0.5	0.4	
Vegetables	59.8	61.6	47.57	40.2	38.4	52.43
Fruits	95.8	97.9		4.2	2.1	
Fodder crops	99.51	99.8		0.49	0.2	
Other crops	84.78	79.1		15.22	20.9	
National	87.31	92.7	85.78	12.69	7.3	14.22

Source: NISR, SAS 2023

Table 35: 2023 Season A_Percentage of farmers by source of improved seeds per district

District	Government (MINAGRI/ RAB/NAEB)	Recognized seed multipliers	Agro- dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	4.17	-	50.00	12.50	29.17	4.17	-	100
Gasabo	2.04	8.16	85.71			2.04	2.04	100
Kicukiro	15.38	1.92	69.23	1.92	9.62	-	1.92	100
Nyanza	-	7.58	45.45	36.36	7.58	1.52	1.52	100
Gisagara	1.15	2.30	37.93	49.43	2.30	6.90	-	100
Nyaruguru	-	3.28	32.79	62.30	-	1.64	-	100
Huye	2.38	8.33	46.43	27.38	7.14	8.33	-	100
Nyamagabe	3.13	25.00	15.63	43.75	12.50	-	-	100
Ruhango	3.13	6.25	67.19	6.25	12.50	4.69	-	100
Muhanga	5.13	7.69	25.64	33.33	15.38	12.82	-	100
Kamonyi	13.73	1.96	35.29	35.29	3.92	9.80	-	100
Karongi	4.35	2.90	26.09	63.77	-	1.45	1.45	100
Rutsiro	8.00	4.00	44.00	40.00	4.00	-	-	100
Rubavu	6.98	2.33	81.40	6.98	-	-	2.33	100
Nyabihu	-	10.42	47.92	16.67	14.58	10.42	-	100
Ngororero	2.86	8.57	51.43	34.29	2.86	-	-	100
Rusizi	12.07	1.72	18.97	65.52	1.72	-	-	100
Nyamasheke	1.96	5.88	21.57	60.78	1.96	7.84	-	100
Rulindo	3.23	1.61	69.35	14.52	8.06	3.23	-	100
Gakenke	-	1.57	29.92	64.57	2.36	1.57	-	100
Musanze	4.12	6.19	52.58	19.59	14.43	3.09	-	100
Burera	-	-	64.00	33.00	-	3.00	-	100
Gicumbi	3.17	3.17	42.86	49.21	1.59	-	-	100
Rwamagana	2.88	2.88	28.78	35.97	11.51	17.27	0.72	100
Nyagatare	4.62	8.67	61.27	16.76	1.16	5.78	1.73	100
Gatsibo	4.43	12.66	30.38	44.30	4.43	3.16	0.63	100
Kayonza	10.42	10.42	35.42	33.33	3.13	7.29	-	100
Kirehe	3.01	1.20	16.87	68.67	0.60	9.64	-	100
Ngoma	1.85	3.09	19.75	65.43	4.94	4.94	-	100
Bugesera	5.98	7.69	44.44	23.08	6.84	11.11	0.85	100
National	3.92	5.38	40.78	38.74	5.17	5.55	0.46	100

Table 36: 2023 Season B_Percentage of farmers by source of improved seeds per district

District	Government (MINAGRI/ RAB/NAEB)	Recognized seed multipliers	Agro- dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	-	-	44.44	22.22	33.33	-	-	100.00
Gasabo	16.67	10.00	46.67	3.33	16.67	6.67	-	100.00
Kicukiro	26.67	-	73.33	-	-	-	-	100.00
Nyanza	1.61	4.84	48.39	37.10	3.23	4.84	-	100.00
Gisagara	10.00	2.50	45.00	22.50	7.50	12.50	-	100.00
Nyaruguru	-	20.00	40.00	13.33	20.00	6.67	-	100.00
Huye	-	31.25	28.13	18.75	9.38	12.50	-	100.00
Nyamagabe	3.70	14.81	18.52	40.74	3.70	18.52	-	100.00
Ruhango	23.26	18.60	25.58	2.33	9.30	18.60	2.33	100.00
Muhanga	22.73	18.18	18.18	18.18	4.55	18.18	-	100.00
Kamonyi	27.78	9.26	29.63	24.07	9.26	-	-	100.00
Karongi	42.31	-	23.08	30.77	3.85	-	-	100.00
Rutsiro	36.84	-	42.11	15.79	5.26	-	-	100.00
Rubavu	1.69	3.39	88.14	5.08	1.69	-	-	100.00
Nyabihu	4.29	7.14	47.14	27.14	12.86	-	1.43	100.00
Ngororero	-	3.23	64.52	29.03	-	1.61	1.61	100.00
Rusizi	-	25.00	25.00	43.75	6.25	-	-	100.00
Nyamasheke	68.29	14.63	4.88	4.88	2.44	2.44	2.44	100.00
Rulindo	3.23	12.90	58.06	6.45	19.35	-	-	100.00
Gakenke	8.70	13.04	26.09	34.78	17.39	-	-	100.00
Musanze	10.20	8.16	30.61	8.16	34.69	6.12	2.04	100.00
Burera	6.25	6.25	34.38	12.50	15.63	12.50	12.50	100.00
Gicumbi	2.78	2.78	50.00	36.11	5.56	2.78	-	100.00
Rwamagana	5.17	18.97	18.97	27.59	12.07	10.34	6.90	100.00
Nyagatare	5.03	4.52	61.81	24.62	1.51	1.51	1.01	100.00
Gatsibo	2.97	6.93	33.66	48.51	1.98	1.98	3.96	100.00
Kayonza	2.53	16.46	36.71	40.51	1.27	2.53	-	100.00
Kirehe	20.00	6.67	6.67	40.00	-	26.67	-	100.00
Ngoma	34.78	4.35	4.35	17.39	17.39	21.74	-	100.00
Bugesera	0.72	2.16	38.85	41.01	6.47	10.79	-	100.00
National	**9.53**	**8.34**	**41.63**	**26.35**	**7.29**	**5.54**	**1.33**	**100.00**

Table 37: 2023 Season C_Percentage of farmers by source of improved seeds per district

District	Sources of improved seeds							
	Government (MINAGRI/	Recognized multipliers	Agro-dealers	NGOs/	Market	Agriculture cooperative	Other source	Total
Nyarugenge	-	-	30.77	-	46.15	23.08	-	100.00
Gasabo	-	6.25	40.63	-	31.25	21.88	-	100.00
Kicukiro	-	-	100.00	-	-	-	-	100.00
Nyanza	-	-	55.56	-	33.33	11.11	-	100.00
Gisagara	-	-	77.78	-	22.22	-	-	100.00
Nyaruguru	-	50.00	25.00	-	8.33	16.67	-	100.00
Huye	17.39	-	60.87	-	4.35	17.39	-	100.00
Nyamagabe	13.04	26.09	43.48	17.39	-	-	-	100.00
Ruhango	-	-	45.45	-	54.55	-	-	100.00
Muhanga	-	-	32.14	7.14	21.43	39.29	-	100.00
Kamonyi	-	1.96	35.29	-	60.78	1.96	-	100.00
Karongi	-	25.00	66.67	-	8.33	-	-	100.00
Rutsiro	-	-	-	-	-	100.00	-	100.00
Rubavu	-	28.57	25.00	10.71	32.14	-	3.57	100.00
Nyabihu	-	35.00	25.00	-	25.00	15.00	-	100.00
Ngororero	-	50.00	16.67	-	33.33	-	-	100.00
Rusizi	-	-	47.06	-	47.06	-	5.88	100.00
Nyamasheke	-	-	66.67	5.56	27.78	-	-	100.00
Rulindo	3.70	7.41	-	-	25.93	59.26	3.70	100.00
Gakenke	20.00	20.00	20.00	-	-	40.00	-	100.00
Musanze	6.67	13.33	26.67	-	33.33	20.00	-	100.00
Burera	28.57	7.14	28.57	-	35.71	-	-	100.00
Gicumbi	-	-	100.00	-	-	-	-	100.00
Rwamagana	33.33	-	66.67	-	-	-	-	100.00
Nyagatare	-	-	100.00	-	-	-	-	100.00
Gatsibo	5.71	-	42.86	2.86	48.57	-	-	100.00
Kayonza	-	-	100.00	-	-	-	-	100.00
Kirehe	15.00	-	50.00	-	35.00	-	-	100.00
Ngoma	-	-	44.44	-	44.44	-	11.11	100.00
Bugesera	-	11.11	27.78	5.56	50.00	5.56	-	100.00
National	**4.09**	**8.56**	**42.61**	**2.33**	**30.74**	**10.70**	**0.97**	**100.00**

Source: NISR, SAS 2023

Table 38: 2023 Season A, Source of improved seeds by season per crop type in 2023 (%)

Crop	Government (MINAGRI/RAB/	Recognized seed multipliers	Agro dealers	NGOs/	Market	Agriculture cooperative	Other source	Total
Maize	2.51	1.71	41.81	46.32	4.09	3.26	0.30	100
Sorghum	-	-	-	-	-	-	100.00	100
Paddy rice	5.61	41.12	2.80	0.93	-	49.53	-	100
Wheat	50.00	-	12.50	25.00	-	12.50	-	100
Other cereals	-	-	-	33.33	66.67	-	-	100
Sweet potato	62.50	25.00	-	12.50	-	-	-	100
Irish potato	17.95	48.72	1.28	10.26	11.54	8.97	1.28	100
Cassava	47.37	36.84	5.26	5.26	-	5.26	-	100
Bush bean	50.00	11.54	11.54	23.08	-	3.85	-	100
Climbing bean	80.00	-	-	20.00	-	-	-	100
Pea	100.00	-	-	-	-	-	-	100
Soybean	38.71	22.58	19.35	6.45	3.23	6.45	3.23	100
Cooking banana	25.00	50.00	-	25.00	-	-	-	100
Dessert banana	8.11	70.27	-	-	18.92	2.70	-	100
Banana for beer	12.50	68.75	-	-	18.75	-	-	100
Vegetables	0.90	0.60	57.49	3.89	32.04	2.69	2.40	100
Fruits	41.82	36.36	3.64	3.64	12.73	1.82	-	100
Fodder crops	35.90	-	56.41	-	7.69	-	-	100
Other crops	27.40	26.03	4.11	5.48	9.59	20.55	6.85	100

Source: NISR, SAS 2023

Table 39: 2023 Season B, Source of improved seeds by season per crop type in 2023 (%)

Crop	Government (MINAGRI/RAB/	Recognized seed multipliers	Agro dealers	NGOs/	Market	Agriculture cooperative	Other source	Total
Maize	1.74	1.94	50.77	38.25	4.64	2.14	0.52	100.00
Sorghum	-	-	-	100.00	-	-	-	100.00
Paddy rice	2.80	43.93	4.67	0.93	0.93	44.86	1.87	100.00
Wheat	15.63	3.13	54.69	12.50	6.25	7.81	-	100.00
Other cereals	-	-	-	60.00	-	-	40.00	100.00
Sweet potato	75.00	-	-	25.00	-	-	-	100.00
Irish potato	16.87	48.19	8.43	2.41	14.46	9.64	-	100.00
Cassava	33.33	44.44	-	-	-	22.22	-	100.00
Bush bean	48.15	18.52	11.11	18.52	-	3.70	-	100.00
Climbing bean	23.53	11.76	23.53	35.29	-	-	5.88	100.00
Pea	100.00	-	-	-	-	-	-	100.00
Soybean	21.74	17.39	21.74	13.04	17.39	4.35	4.35	100.00
Cooking banana	66.67	33.33		-	-	-	-	100.00
Dessert banana	23.08	64.10	2.56	5.13	2.56	-	2.56	100.00
Banana for beer	26.32	68.42	-	-	5.26	-	-	100.00
Vegetables	1.54	6.48	52.78	5.56	30.86	0.62	2.16	100.00
Fruits	26.09	52.17	8.70	-	4.35	8.70	-	100.00
Fodder crops	54.24	18.64	18.64	-	8.47	-	-	100.00
Other crops	71.43	12.86	1.90	3.81	2.38	5.71	1.90	100.00

Table 40: 2023 Season C, Source of improved seeds by season per crop type in 2023 (%)

Crop	Government (MINAGRI/RAB/	Recognized seed multipliers	Agro dealers	NGOs/	Market	Agriculture cooperative	Other source	Total
Sweet potato	100.0	-	-	-	-	-	-	100.0
Irish potato	8.3	44.4	10.2	3.7	7.4	25.0	0.9	100.0
Bush bean	50.0	-	12.5	12.5	-	25.0	-	100.0
Climbing bean	23.5	11.8	23.5	35.3	-	-	5.9	100.0
Pea	100.0	-	-	-	-	-	-	100.0
Soybean	-	-	100.0	-	-	-	-	100.0
Vegetables	1.3	0.7	52.9	2.2	35.4	6.3	1.1	100.0
Total	3.5	7.9	45.2	2.6	30.2	9.6	1.1	100.0

Table 41: Season A 2023_Use of organic fertilizer by farmer type per district (%)

District	Percentage of farmers who applied organic fertilizer			Percentage of plots in which organic fertilizer was applied			Percentage of land size in which organic fertilizer was applied		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	75.0	75.0		76.0	76.0		81.0	81.0	
Gasabo	78.6	78.2	90.0	85.6	85.6	77.8	85.4	85.3	86.5
Kicukiro	67.2	67.2	66.7	78.1	78.1	66.7	79.6	79.1	99.6
Nyanza	85.9	85.9	88.9	70.8	70.8	100.0	67.4	66.5	100.0
Gisagara	89.1	90.1	66.7	77.4	77.4	100.0	79.2	76.8	100.0
Nyaruguru	90.4	90.1	100.0	90.7	90.7	100.0	91.9	91.8	100.0
Huye	93.6	94.6	76.0	75.9	75.9	90.3	74.0	73.4	91.2
Nyamagabe	96.0	96.0	100.0	83.6	83.6	87.5	81.5	81.5	97.0
Ruhango	88.4	88.6	77.8	72.2	72.2	80.0	71.8	71.0	97.7
Muhanga	97.0	96.9	100.0	67.8	67.8	100.0	70.9	70.3	100.0
Kamonyi	91.8	91.6	100.0	70.3	70.3	92.9	70.4	69.8	97.8
Karongi	95.7	95.7	100.0	70.4	70.4	100.0	71.9	71.9	100.0
Rutsiro	93.3	93.3		72.7	72.7		74.8	74.8	
Rubavu	79.1	79.1	75.0	49.7	49.7	66.7	54.0	54.0	54.5
Nyabihu	92.7	92.7		69.7	69.7		67.9	67.9	
Ngororero	98.8	98.8		78.3	78.3		82.2	82.2	
Rusizi	85.1	86.1	40.0	82.6	82.6	77.8	79.3	79.1	98.9
Nyamasheke	96.7	96.7	100.0	78.8	78.8	100.0	81.8	81.5	100.0
Rulindo	97.2	97.4	80.0	89.0	89.0	100.0	91.6	91.6	100.0
Gakenke	99.2	99.2		84.0	84.0		83.1	83.1	
Musanze	88.9	88.9	100.0	74.8	74.8	50.0	70.0	70.0	48.3
Burera	94.7	94.7		85.2	85.2		81.9	81.9	
Gicumbi	93.2	93.2	100.0	91.3	91.3	50.0	90.6	90.7	19.3
Rwamagana	88.2	88.4	83.9	73.9	73.9	61.7	76.2	76.4	65.1
Nyagatare	66.8	67.7	53.9	66.1	66.1	69.1	64.7	64.0	94.7
Gatsibo	92.9	92.8	96.0	79.5	79.5	88.3	80.5	79.9	94.5
Kayonza	75.1	75.6	67.9	56.4	56.4	60.2	64.9	65.2	43.9
Kirehe	83.1	83.6	37.5	78.7	78.7	85.7	75.7	75.3	96.7
Ngoma	87.6	88.1	70.6	58.8	58.8	76.9	68.8	68.3	95.4
Bugesera	63.9	64.2	58.8	59.7	59.7	83.1	63.7	62.1	98.6
National	87.9	88.2	74.2	76.2	76.2	76.2	75.5	75.2	93.3

Source: NISR, SAS 2023

Table 42: Season B 2023_Use of organic fertilizer by farmer type per district (%)

District	Percentage of farmers who applied organic fertilizer			Percentage of plots in which organic fertilizer was applied			Percentage of land size in which organic fertilizer was applied		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	71.8	71.8	-	67.6	67.6	-	73.0	73.0	-
Gasabo	86.0	86.8	60.0	75.7	75.7	77.8	71.6	71.0	97.6
Kicukiro	60.6	59.9	100.0	76.4	76.4	50.0	70.6	72.9	24.9
Nyanza	85.4	85.2	100.0	61.8	61.8	80.0	64.0	63.3	98.9
Gisagara	80.7	81.6	53.3	65.6	65.6	100.0	66.8	64.2	100.0
Nyaruguru	93.2	93.0	100.0	84.2	84.2	94.4	84.6	84.4	99.4
Huye	93.5	93.3	100.0	65.7	65.7	75.0	67.4	66.6	95.3
Nyamagabe	96.1	96.1	100.0	83.2	83.2	90.9	81.8	81.7	98.7
Ruhango	85.9	85.9	85.7	68.9	68.9	76.5	67.8	66.8	99.3
Muhanga	95.5	95.5	100.0	70.5	70.5	100.0	69.3	69.1	100.0
Kamonyi	83.2	83.0	100.0	67.7	67.7	100.0	68.5	68.2	100.0
Karongi	94.0	94.0	100.0	73.7	73.7	100.0	73.8	73.8	100.0
Rutsiro	89.4	89.4	-	70.9	70.9	-	71.8	71.8	-
Rubavu	83.0	83.0	75.0	49.5	49.5	44.4	50.9	50.9	43.3
Nyabihu	94.6	94.6	-	67.0	67.0	-	73.5	73.5	-
Ngororero	97.0	97.0	-	81.7	81.7	-	85.2	85.2	-
Rusizi	77.5	78.8	20.0	74.8	74.8	100.0	69.9	69.9	100.0
Nyamasheke	97.0	97.2	88.9	75.6	75.6	100.0	74.7	74.4	100.0
Rulindo	95.3	95.7	60.0	90.1	90.1	90.9	89.3	89.3	94.4
Gakenke	98.4	98.4	-	73.7	73.7	-	74.1	74.1	-
Musanze	91.9	91.9	100.0	70.0	70.0	44.4	69.8	69.8	54.5
Burera	93.4	93.4	-	77.6	77.6	-	73.5	73.5	-
Gicumbi	94.4	94.4	100.0	83.9	83.9	100.0	84.1	84.1	100.0
Rwamagana	77.1	76.0	96.6	56.4	56.4	60.1	58.9	58.1	86.6
Nyagatare	63.8	65.6	37.8	60.9	60.9	81.1	59.6	59.4	90.7
Gatsibo	86.5	87.3	66.7	73.1	73.1	92.3	76.4	75.9	98.6
Kayonza	68.4	69.0	57.1	52.1	52.1	64.0	52.4	52.5	48.3
Kirehe	64.2	64.5	37.5	52.9	52.9	71.4	53.9	52.7	92.0
Ngoma	52.2	51.3	83.3	50.3	50.3	66.7	58.1	56.6	95.8
Bugesera	65.8	66.1	61.8	57.3	57.3	91.5	60.5	58.6	99.5
National	83.4	83.7	69.8	71.7	71.7	75.1	69.7	69.3	94.4

Source: NISR, SAS 2023

Table 43: Season C 2023_Use of organic fertilizer per district (%)

District	Percentage of farmers who applied organic fertilizer			Percentage of plots in which organic fertilizer was applied			Percentage of land size in which organic fertilizer was applied		
	Overall	SSF	SITE	Overall	SSF	SITE	Overall	SSF	SITE
Nyarugenge	55.0	12.0	85.7	94.3	57.6	100.0	83.3	33.3	100.0
Gasabo	94.5	95.5	94.1	92.9	88.8	100.0	98.3	96.6	100.0
Kicukiro	46.2	16.7	59.3	87.9	100.0	86.3	92.0	100.0	81.4
Nyanza	69.9	100.0	64.0	83.9	91.6	80.4	86.7	92.6	82.5
Gisagara	75.9	81.8	73.8	80.9	69.1	85.7	77.4	59.5	87.7
Nyaruguru	94.7	96.8	94.0	96.1	94.3	97.5	95.5	94.9	96.0
Huye	93.4	91.1	94.3	91.3	93.7	89.4	90.5	91.3	89.9
Nyamagabe	95.8	73.3	100.0	98.4	92.2	99.8	96.9	87.0	99.4
Ruhango	78.1	83.3	76.6	93.4	100.0	87.6	94.5	100.0	89.2
Muhanga	88.2	81.3	90.8	97.3	93.6	99.1	94.9	90.3	97.2
Kamonyi	93.3	80.0	98.2	84.4	75.9	91.2	90.9	83.6	93.8
Karongi	84.1	69.2	90.3	93.5	91.7	95.5	95.3	90.7	97.2
Rutsiro	88.5	100.0	87.5	100.0	100.0	100.0	100.0	100.0	100.0
Rubavu	67.1	69.2	54.6	51.0	50.2	100.0	61.1	60.1	100.0
Nyabihu	86.5	83.5	92.5	90.5	90.3	94.2	89.2	88.9	96.0
Ngororero	84.0	85.7	83.8	95.4	100.0	94.3	94.9	100.0	93.4
Rusizi	78.1	87.5	75.0	98.9	100.0	98.5	97.9	100.0	97.4
Nyamasheke	89.4	100.0	88.6	93.8	100.0	92.2	97.6	100.0	96.7
Rulindo	99.1	94.4	100.0	97.5	95.0	98.4	97.3	94.9	99.3
Gakenke	96.7	93.3	98.7	92.5	92.0	93.0	90.2	93.1	86.6
Musanze	89.9	84.6	92.1	87.9	83.2	99.4	90.2	87.2	99.4
Burera	97.3	96.3	98.7	94.5	93.6	98.2	94.4	93.9	97.9
Gicumbi	100.0	100.0	100.0	100.0	100.0	99.9	99.6	100.0	99.1
Rwamagana	50.9	37.5	56.8	69.9	73.0	67.4	63.7	56.8	69.0
Nyagatare	60.7	82.1	39.3	91.7	92.6	54.2	94.3	95.9	63.9
Gatsibo	96.6	100.0	96.2	89.5	100.0	87.0	91.6	100.0	85.1
Kayonza	72.9	81.8	70.8	93.9	100.0	90.4	93.5	100.0	89.3
Kirehe	82.3	78.6	83.1	76.6	46.2	83.5	77.3	69.6	78.8
Ngoma	59.4	56.3	60.4	74.9	59.4	77.9	37.4	55.8	35.3
Bugesera	36.5	24.2	42.9	68.2	69.4	67.6	78.9	93.6	68.0
National	83.7	80.2	85.2	89.6	86.8	92.5	88.5	87.1	90.9

Source: NISR, SAS 2023

Table 44: Season A 2023_Use of inorganic fertilizer by farmer type per district (%)

District	Percentage of farmers who used inorganic fertilizers			Percentage of plots in which inorganic fertilizer was applied			Percentage of land under which inorganic fertilizer was applied		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	17.0	17.0		12.2	12.2		10.5	10.5	
Gasabo	33.8	32.9	60.0	16.3	16.3	19.6	23.6	22.3	75.3
Kicukiro	53.9	53.1	100.0	26.3	26.3	60.0	39.5	38.4	98.2
Nyanza	40.0	38.8	100.0	12.2	12.2	64.7	16.3	13.9	98.7
Gisagara	60.2	58.4	100.0	26.5	26.5	100.0	36.4	25.7	100.0
Nyaruguru	71.7	70.8	100.0	50.5	50.5	91.7	55.0	54.4	99.8
Huye	58.9	56.5	100.0	26.2	26.2	75.7	29.4	26.0	99.0
Nyamagabe	58.3	58.1	100.0	28.6	28.6	87.5	34.1	34.0	97.0
Ruhango	25.8	24.6	88.9	10.5	10.5	66.7	14.3	11.9	90.1
Muhanga	54.2	53.5	100.0	22.2	22.2	100.0	23.8	22.4	100.0
Kamonyi	34.8	33.2	100.0	9.1	9.1	92.9	12.7	11.0	97.8
Karongi	71.4	71.6	0.0	30.4	30.4	0.0	35.2	35.2	0.0
Rutsiro	60.9	60.9		29.4	29.4		36.4	36.4	
Rubavu	63.1	63.2	50.0	31.4	31.4	27.3	41.0	41.1	28.8
Nyabihu	76.6	76.6		42.9	42.9		52.0	52.0	
Ngororero	61.5	61.5		32.6	32.6		36.3	36.3	
Rusizi	74.1	73.7	90.0	48.8	48.8	73.3	55.8	53.9	88.2
Nyamasheke	82.7	82.4	100.0	52.6	52.6	100.0	56.8	56.3	100.0
Rulindo	68.1	67.9	80.0	32.3	32.3	52.2	40.0	39.9	90.1
Gakenke	83.0	83.0		48.6	48.6		52.1	52.1	
Musanze	68.2	68.0	100.0	36.5	36.5	83.3	39.3	39.2	92.4
Burera	77.8	77.8		43.5	43.5		49.6	49.6	
Gicumbi	42.4	42.3	100.0	23.4	23.4	75.0	25.8	25.8	91.6
Rwamagana	56.4	55.0	80.7	30.4	30.4	38.1	38.1	37.2	79.6
Nyagatare	64.3	62.0	97.4	37.0	37.0	62.0	47.4	45.1	93.3
Gatsibo	58.9	57.3	100.0	22.8	22.8	74.6	35.0	31.9	99.3
Kayonza	52.8	50.5	89.3	22.3	22.2	49.6	32.4	29.7	91.7
Kirehe	65.2	64.9	87.5	41.3	41.3	92.3	48.4	46.2	98.4
Ngoma	68.4	68.2	76.5	31.4	31.4	46.6	41.0	39.9	89.8
Bugesera	50.2	49.7	58.8	26.3	26.3	52.6	31.8	29.8	84.6
National	59.6	59.0	87.9	30.9	30.9	57.2	37.5	36.0	94.1

Source: NISR, SAS 2023

Table 45: Season B 2023_Use of inorganic fertilizer by farmer type per district (%)

District	Percentage of farmers who used inorganic fertilizers			Percentage of plots in which inorganic fertilizer was applied			Percentage of land under which inorganic fertilizer was applied		
	Overall	SSF	LSF	Overall	SSF	LSF	Overall	SSF	LSF
Nyarugenge	20.5	20.5	-	5.5	5.5	-	7.4	7.4	-
Gasabo	37.7	37.3	50.0	16.1	16.1	17.1	19.8	18.3	76.2
Kicukiro	45.6	44.6	100.0	26.3	26.3	33.3	40.2	38.7	90.1
Nyanza	40.4	39.7	85.7	12.0	12.0	60.0	17.3	15.8	98.6
Gisagara	39.9	37.9	100.0	16.9	16.9	100.0	25.8	16.9	100.0
Nyaruguru	66.9	65.9	100.0	43.6	43.6	88.9	51.8	51.3	99.1
Huye	49.2	47.7	100.0	18.6	18.6	58.3	23.4	21.3	98.1
Nyamagabe	57.7	57.4	100.0	25.0	25.0	90.9	31.9	31.6	98.7
Ruhango	19.4	17.3	92.9	5.3	5.3	84.2	11.4	9.0	98.4
Muhanga	46.2	45.7	100.0	16.2	16.2	100.0	17.7	17.3	100.0
Kamonyi	22.7	22.1	80.0	9.0	9.0	50.0	10.6	10.0	93.1
Karongi	55.4	55.5	0.0	27.7	27.7	0.0	28.9	28.9	0.0
Rutsiro	56.2	56.2	-	28.5	28.5	-	36.8	36.8	-
Rubavu	66.4	66.6	50.0	37.6	37.6	18.2	48.5	48.6	13.3
Nyabihu	87.3	87.3	-	56.0	56.0	-	66.3	66.3	-
Ngororero	63.2	63.2	-	34.1	34.1	-	38.3	38.3	-
Rusizi	51.0	50.1	90.0	24.9	24.9	91.7	32.5	29.3	88.5
Nyamasheke	76.3	76.0	88.9	42.6	42.6	88.9	46.8	46.0	98.3
Rulindo	61.0	60.5	100.0	32.3	32.3	93.3	36.7	36.5	99.6
Gakenke	85.3	85.3	-	42.6	42.6	-	45.1	45.1	-
Musanze	77.4	77.2	100.0	42.9	42.9	66.7	49.9	49.7	89.9
Burera	67.1	67.1	-	35.7	35.7	-	41.4	41.4	-
Gicumbi	40.1	39.9	100.0	24.3	24.3	60.0	22.7	22.6	87.2
Rwamagana	46.0	44.8	69.0	19.2	19.2	37.1	26.2	25.1	76.6
Nyagatare	68.9	67.4	91.9	41.5	41.5	69.0	55.7	54.2	95.5
Gatsibo	49.1	47.7	87.5	21.2	21.2	67.8	32.5	30.0	92.0
Kayonza	47.6	45.4	85.7	21.1	21.1	40.3	31.3	28.8	88.2
Kirehe	33.5	32.9	87.5	17.2	17.2	83.3	22.6	19.8	98.1
Ngoma	30.0	28.1	94.4	8.4	8.4	37.7	13.0	11.0	88.6
Bugesera	47.8	47.0	61.8	26.3	26.3	49.1	32.9	31.0	81.3
National	51.6	50.9	84.2	26.2	26.2	53.6	32.2	30.8	92.4

Source: NISR, SAS 2023

Table 46: Season C 2023_Use of inorganic fertilizer per district (%)

District	Percentage of farmers who used inorganic fertilizers			Percentage of plots in which inorganic fertilizer was applied			Percentage of land under which inorganic fertilizer was applied		
	Overall	SSF	SITE	Overall	SSF	SITE	Overall	SSF	SITE
Nyarugenge	66.7	40.0	85.7	44.9	24.0	67.5	37.6	26.7	80.4
Gasabo	86.3	72.7	92.2	56.9	37.0	86.1	77.8	67.2	88.3
Kicukiro	51.3	25.0	63.0	47.8	17.1	68.6	41.1	35.7	58.6
Nyanza	68.4	72.7	67.6	42.9	64.5	35.5	63.1	75.3	57.3
Gisagara	53.0	40.9	57.4	32.6	33.9	32.3	30.8	26.5	32.5
Nyaruguru	66.4	77.4	63.0	51.9	44.6	57.2	55.4	54.7	56.1
Huye	68.9	66.7	69.8	41.4	37.5	44.6	51.7	40.8	58.9
Nyamagabe	84.4	40.0	92.6	70.5	32.5	82.1	70.6	32.9	85.0
Ruhango	48.8	27.8	54.7	25.2	11.8	36.7	36.9	27.9	44.6
Muhanga	58.0	31.3	67.8	38.2	24.8	48.3	40.2	27.5	48.4
Kamonyi	82.7	42.5	97.3	55.7	20.0	90.1	70.6	28.2	93.2
Karongi	56.8	23.1	71.0	25.5	8.7	46.3	48.9	12.5	68.8
Rutsiro	72.1	80.0	71.4	71.4	43.6	76.8	82.1	82.7	82.0
Rubavu	89.5	89.2	90.9	52.6	51.4	95.5	79.4	79.0	92.4
Nyabihu	94.2	92.2	98.1	87.3	86.8	96.5	92.9	92.6	98.6
Ngororero	62.7	42.9	64.7	43.4	2.4	53.9	64.9	56.3	67.3
Rusizi	91.7	83.3	94.4	87.0	72.9	91.5	93.3	86.1	94.7
Nyamasheke	70.6	50.0	72.2	59.8	42.2	64.1	63.2	50.0	68.0
Rulindo	97.3	83.3	100.0	86.5	61.9	95.7	88.1	78.3	97.0
Gakenke	82.0	68.9	89.6	74.1	69.2	79.8	68.8	65.8	72.8
Musanze	73.7	73.1	74.0	64.8	69.5	53.9	80.1	81.1	77.1
Burera	83.3	78.9	89.6	68.9	67.8	73.4	76.9	75.9	85.0
Gicumbi	85.8	76.5	89.9	80.3	83.7	75.4	81.2	76.8	85.2
Rwamagana	84.9	68.8	91.9	65.4	74.8	57.7	70.6	76.7	64.0
Nyagatare	78.6	82.1	75.0	62.1	80.8	6.6	72.8	83.7	17.6
Gatsibo	86.4	85.7	86.5	83.2	65.4	87.3	87.2	86.0	88.2
Kayonza	64.4	72.7	62.5	49.4	79.1	37.3	60.0	79.0	50.1
Kirehe	60.8	57.1	61.5	36.6	22.7	39.6	46.6	42.2	47.5
Ngoma	54.7	43.8	58.3	31.8	28.9	32.2	35.2	35.5	35.2
Bugesera	58.3	39.4	68.3	30.6	42.5	27.2	35.9	43.3	33.4
National	74.5	67.9	77.5	56.3	54.9	57.9	68.2	72.3	62.1

Source: NISR, SAS 2023

Table 47: Percentage of farmers by source of inorganic fertilizers per district in Season A 2023

District	Government (MINAGRI/ RAB/NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	-	50.0	28.1	18.8	3.1	-	100
Gasabo	1.0	95.2	1.0	1.0	-	1.9	100
Kicukiro	15.2	78.1	3.8	1.0	1.0	1.0	100
Nyanza	5.5	36.3	54.4	1.1	2.8	-	100
Gisagara	-	26.9	58.4	4.6	9.4	0.7	100
Nyaruguru	2.1	29.4	65.6	0.8	1.3	0.8	100
Huye	3.4	42.3	40.4	2.6	5.7	5.7	100
Nyamagabe	0.8	49.2	42.7	2.9	3.7	0.8	100
Ruhango	7.6	65.3	12.7	1.7	8.5	4.2	100
Muhanga	2.0	10.4	64.0	8.8	13.2	1.6	100
Kamonyi	7.9	18.6	55.4	6.8	9.6	1.7	100
Karongi	4.6	33.8	60.9	0.3	0.3	-	100
Rutsiro	6.9	60.6	32.1	0.5	-	-	100
Rubavu	1.2	82.6	4.2	12.0	-	-	100
Nyabihu	-	87.3	11.5	1.3	-	-	100
Ngororero	0.6	53.5	41.0	2.9	-	1.9	100
Rusizi	0.6	19.0	71.7	7.0	1.8	-	100
Nyamasheke	5.1	17.2	75.7	1.1	0.9	-	100
Rulindo	1.0	65.9	29.7	2.4	0.3	0.7	100
Gakenke	2.8	27.5	59.3	3.8	0.4	6.2	100
Musanze	0.6	52.8	20.9	19.8	0.3	5.6	100
Burera	3.9	58.0	23.3	0.3	1.7	12.8	100
Gicumbi	3.6	46.8	43.6	3.2	0.8	2.0	100
Rwamagana	3.1	36.7	37.0	7.4	14.2	1.5	100
Nyagatare	2.9	66.2	22.9	2.3	4.4	1.3	100
Gatsibo	7.8	26.5	54.3	8.0	3.3	0.3	100
Kayonza	4.4	31.1	52.8	2.4	4.4	4.8	100
Kirehe	6.5	16.5	66.1	0.9	6.5	3.5	100
Ngoma	3.5	23.0	64.8	3.8	4.0	0.9	100
Bugesera	3.3	47.0	40.5	4.0	4.6	0.7	100
National	3.4	41.8	44.8	4.2	3.5	2.3	100

Source: NISR, SAS 2023

Table 48: Percentage of farmers by source of inorganic fertilizers per district in Season B 2023

District	Government (MINAGRI/ RAB/NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	-	65.0	15.0	15.0	-	5.0	100
Gasabo	3.3	90.9	0.8	0.8	1.7	-	100
Kicukiro	22.0	70.7	1.2	-	4.9	1.2	100
Nyanza	14.6	37.2	39.2		8.0	0.5	100
Gisagara	-	43.1	36.7	8.0	11.2	0.5	100
Nyaruguru	1.8	39.4	56.2	0.4	0.9	0.9	100
Huye	4.9	40.5	35.2	7.5	10.6	-	100
Nyamagabe	4.3	37.4	50.4	4.7	3.2	-	100
Ruhango	6.1	57.6	13.1	3.0	17.2	1.0	100
Muhanga	5.6	8.2	66.3	11.7	2.0	2.0	100
Kamonyi	6.7	28.3	50.0	6.7	7.5	0.8	100
Karongi	3.2	37.1	54.3	1.8	1.4	0.5	100
Rutsiro	0.5	64.9	33.0	0.5	1.1	-	100
Rubavu	0.4	88.7	10.9	-	-	-	100
Nyabihu	-	77.7	21.4	0.9	-	-	100
Ngororero	0.7	53.9	36.5	6.1	1.4	-	100
Rusizi	0.4	23.5	68.1	5.5	2.5	-	100
Nyamasheke	6.0	18.7	74.0	0.3	0.3	-	100
Rulindo	0.4	74.4	14.3	10.5	0.4	-	100
Gakenke	1.6	19.7	49.4	7.3	0.4	0.4	100
Musanze	0.5	53.2	20.6	13.4	-	-	100
Burera	-	74.0	19.2	0.3	4.8	-	100
Gicumbi	0.4	57.4	36.3	0.8	1.3	1.3	100
Rwamagana	0.8	32.2	44.1	8.8	13.4	0.8	100
Nyagatare	0.5	70.8	25.5	1.2	1.7	0.3	100
Gatsibo	7.8	31.9	47.5	5.7	3.6	-	100
Kayonza	2.5	43.2	45.6	2.9	3.7	0.4	100
Kirehe	4.9	27.4	52.5	10.3	4.0	-	100
Ngoma	6.9	27.1	43.6	3.7	18.6	-	100
Bugesera	0.7	49.7	38.4	5.3	5.6	0.4	100
National	**2.9**	**47.0**	**38.5**	**4.7**	**3.7**	**0.3**	**100**

Source: NISR, SAS 2023

Table 49: Percentage of farmers by source of inorganic fertilizers per district in Season C 2023

District	Government (MINAGRI/RAB/NAEB)	Agro dealers	NGOs /Companies	Market	Agriculture cooperative	Other source	Total
Nyarugenge	-	52.50	2.50	20.00	25.00	-	100
Gasabo	-	90.48	1.59	-	7.94	-	100
Kicukiro	-	75.00	25.00	-	-	-	100
Nyanza	2.17	50.00	22.83	14.13	10.87	-	100
Gisagara	-	68.18	18.18	4.55	6.82	2.27	100
Nyaruguru	1.15	54.02	29.89	6.90	8.05	-	100
Huye	4.81	54.81	29.81	5.77	4.81	-	100
Nyamagabe	-	61.73	35.80	2.47	-	-	100
Ruhango	5.00	45.00	10.00	32.50	5.00	2.50	100
Muhanga	-	42.03	20.29	20.29	17.39	-	100
Kamonyi	-	47.20	8.80	31.20	12.80	-	100
Karongi	-	44.00	44.00	-	12.00	-	100
Rutsiro	-	90.91	6.82	-	2.27	-	100
Rubavu	-	70.59	5.88	23.53	-	-	100
Nyabihu	-	92.52	6.80	0.68	-	-	100
Ngororero	-	70.21	21.28	8.51	-	-	100
Rusizi	-	55.68	30.68	13.64	-	-	100
Nyamasheke	-	41.67	51.67	1.67	5.00	-	100
Rulindo	-	34.58	3.74	7.48	54.21	-	100
Gakenke	-	64.00	20.00	-	16.00	-	100
Musanze	-	83.33	10.61	6.06	-	-	100
Burera	-	69.03	16.13	5.16	9.03	0.65	100
Gicumbi	-	65.98	16.49	12.37	5.15	-	100
Rwamagana	-	84.44	-	15.56	-	-	100
Nyagatare	2.22	88.89	-	6.67	2.22	-	100
Gatsibo	-	70.59	9.80	19.61	-	-	100
Kayonza	-	94.74	-	2.63	2.63	-	100
Kirehe	-	41.67	41.67	14.58	2.08	-	100
Ngoma	-	51.43	34.29	2.86	5.71	5.71	100
Bugesera	-	42.11	17.54	26.32	10.53	3.51	100
National	0.51	63.37	17.32	10.07	8.40	0.32	100

Source: NISR, SAS 2023

Table 50: Source of inorganic fertilizer by type of fertilizer in Season A 2023(%)

Fertilizer name	Government (MINAGRI/ RAB/ NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
NPK 17-17-17	2.1	65.9	22.7	5.1	3.8	0.4	100
NPK 20-10-10	68.6	2.9	8.6	5.7	11.4	2.9	100
NPK 25-5-5	71.4	-	14.3	4.8	-	9.5	100
NPK 22-6-12	54.6	4.6	22.7	4.6	13.6	-	100
Other NPK	-	80.0	12.5	2.5	5.0	-	100
Urea	2.9	39.8	48.0	4.0	3.0	2.4	100
liquid urea (Mbonea M)	-	87.2	10.3	2.6	-	-	100
DAP	2.7	36.9	52.4	3.2	2.8	2.1	100
TSP	-	-	100.0	-	-	-	100
KCL/MOP	-	80.0	-	-	20.0	-	100
Omax	-	75.0	20.8	-	4.2	-	100
Winner	-	80.0	20.0	-	-	-	100
Yara Viva	-	71.4	14.3	7.1	7.1	-	100
Amidas	6.9	58.6	17.2	-	17.2	-	100
Cereal	2.6	66.7	23.1	-	7.7	-	100
Boaster	-	100.0	-	-	-	-	100
DI Grow	6.3	87.5	-	6.3	-	-	100
Lime	6.4	51.1	38.3	2.1	2.1	-	100
Other type of fertilizer	4.1	69.9	20.6	2.7	2.7	-	100

Source: NISR, SAS 2023

Table 51: Source of inorganic fertilizer by type of fertilizer in Season B 2023

Fertilizer name	Government (MINAGRI/ RAB/ NAEB)	Agro dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
NPK 17-17-17	1.44	67.60	20.81	5.26	3.10	0.29	100
NPK 20-10-10	62.03	10.13	7.59	-	16.46	-	100
NPK 25-5-5	42.31	23.08	7.69	-	15.38	-	100
NPK 22-6-12	66.67	4.76	-	4.76	9.52	-	100
Other NPK	3.57	89.29	3.57	1.79	1.79	-	100
Urea	1.27	49.92	39.21	5.08	2.93	0.54	100
liquid urea (Mbonea M)	-	77.36	16.98	5.66	-	-	100
DAP	1.34	45.01	44.08	4.03	1.88	0.47	100
KCL/MOP	-	66.67	16.67	-	16.67	-	100
Omax	-	75.00	17.86	7.14	-	-	100
Winner	-	83.33	-	16.67	-	-	100
Yara Viva	-	50.00	-	16.67	25.00	-	100
Amidas	4.17	66.67	8.33	-	20.83	-	100
Cereal	2.33	74.42	2.33	2.33	18.60	-	100
Boaster	-	50.00	50.00	-	-	-	100
DI Grow	-	66.67	7.41	3.70	18.52	-	100
Other type of fertilizer	-	71.74	18.48	6.52	2.17	-	100
Total	2.29	51.50	36.22	4.57	2.90	0.42	100
NPK 17-17-17	1.44	67.60	20.81	5.26	3.10	0.29	100

Source: NISR, SAS 2023

Table 52: Source of inorganic fertilizer by type of fertilizer in Season C 2023 (%)

Fertilizer name	Government (MINAGRI/ RAB/NAEB)	Agro-dealers	NGOs/ Companies	Market	Agriculture cooperative	Other source	Total
NPK 17-17-17;	-	67.0	15.9	8.0	9.0	0.2	100.0
NPK 20-10-10;	-	57.1	28.6	-	-	14.3	100.0
NPK 25-5-5;	-	100.0	-	-	-	-	100.0
NPK 22-6-12;	-	100.0	-	-	-	-	100.0
Other NPK;	-	96.7	-	3.3	-	-	100.0
Urea;	0.9	58.8	17.1	14.8	8.0	0.3	100.0
liquid urea (Mbonea M	-	60.7	21.3	8.2	9.8	-	100.0
DAP	0.9	61.1	18.9	10.9	7.8	0.4	100.0
KCL/MOP,	-	-	-	100.0	-	-	100.0
Omax;	-	81.3	18.8	-	-	-	100.0
Winner;	-	85.7	14.3	-	-	-	100.0
Yara Viva;	-	100.0	-	-	-	-	100.0
Amidas;	-	100.0	-	-	-	-	100.0
Cereal;	-	85.7	-	14.3	-	-	100.0
Boaster;	-	100.0	-	-	-	-	100.0
DI Grow;	-	69.4	5.6	16.7	8.3	-	100.0
Dyna gro;	-	100.0	-	-	-	-	100.0
Lime/Ishwagara	-	76.9	-	-	23.1	-	100.0
Other fertilizers	0.9	64.2	8.5	13.2	13.2	-	100.0
National	**0.5**	**63.7**	**16.4**	**10.8**	**8.4**	**0.3**	**100.0**

Source: NISR, SAS 2023

Table 53: 2023 Season A Percentage of plots by type of inorganic fertilizer per district

District	NPK	Urea	DAP	KCL/MOP	Lime	Others	Total
Nyarugenge	9.1	45.5	42.4	-	-	3.0	100
Gasabo	15.3	54.2	29.0	-	-	1.5	100
Kicukiro	7.0	40.4	52.6	-	-	-	100
Nyanza	7.6	43.3	47.1	-	-	1.9	100
Gisagara	12.6	41.5	43.3	-	-	2.5	100
Nyaruguru	8.5	36.7	50.3	-	3.7	0.9	100
Huye	14.0	43.0	40.0	-	-	3.0	100
Nyamagabe	16.6	38.8	42.4	-	-	2.2	100
Ruhango	17.7	48.0	30.4	1.0	-	2.9	100
Muhanga	7.4	37.7	54.1	-	-	0.9	100
Kamonyi	14.7	45.6	39.0	-	-	0.7	100
Karongi	7.9	41.6	50.2	-	0.3	-	100
Rutsiro	36.0	24.8	35.1	-	2.3	1.9	100
Rubavu	49.8	25.4	23.5	-	-	1.4	100
Nyabihu	42.0	28.4	23.5	-	-	6.2	100
Ngororero	15.3	29.6	51.8	-	2.0	1.3	100
Rusizi	10.2	41.9	46.6	-	0.2	1.1	100
Nyamasheke	10.4	36.1	49.8	-	2.9	0.9	100
Rulindo	18.8	40.9	39.1	-	-	1.2	100
Gakenke	5.6	43.3	51.0	-	-	0.2	100
Musanze	19.9	39.4	38.7	-	-	2.0	100
Burera	13.3	38.7	44.3	-	-	3.7	100
Gicumbi	17.0	39.6	43.0	-	-	0.4	100
Rwamagana	12.2	38.8	45.8	0.2	-	3.0	100
Nyagatare	3.5	49.0	44.6	0.3	-	2.7	100
Gatsibo	9.9	44.9	43.3	-	0.2	1.8	100
Kayonza	10.1	43.8	40.5	0.3	1.4	4.1	100
Kirehe	2.1	39.1	57.9	-	-	1.0	100
Ngoma	4.6	45.1	49.5	-	0.4	0.4	100
Bugesera	12.0	30.6	55.7	-	-	1.6	100
National	12.7	39.9	45.2	0.1	0.5	1.8	100

Source: NISR, SAS 2023

Table 54: 2023 Season B Percentage of plots by type of inorganic fertilizer per district

District	NPK	Urea	DAP	KCL/MOP	Lime	Others	Total
Nyarugenge	9.1	45.5	42.4	-	-	3.0	100
Gasabo	15.3	54.2	29.0	-	-	1.5	100
Kicukiro	7.0	40.4	52.6	-	-	-	100
Nyanza	7.6	43.3	47.1	-	-	1.9	100
Gisagara	12.6	41.5	43.3	-	-	2.5	100
Nyaruguru	8.5	36.7	50.3	-	3.7	0.9	100
Huye	14.0	43.0	40.0	-	-	3.0	100
Nyamagabe	16.6	38.8	42.4	-	-	2.2	100
Ruhango	17.7	48.0	30.4	1.0	-	2.9	100
Muhanga	7.4	37.7	54.1	-	-	0.9	100
Kamonyi	14.7	45.6	39.0	-	-	0.7	100
Karongi	7.9	41.6	50.2	-	0.3	-	100
Rutsiro	36.0	24.8	35.1	-	2.3	1.9	100
Rubavu	49.8	25.4	23.5	-	-	1.4	100
Nyabihu	42.0	28.4	23.5	-	-	6.2	100
Ngororero	15.3	29.6	51.8	-	2.0	1.3	100
Rusizi	10.2	41.9	46.6	-	0.2	1.1	100
Nyamasheke	10.4	36.1	49.8	-	2.9	0.9	100
Rulindo	18.8	40.9	39.1	-	-	1.2	100
Gakenke	5.6	43.3	51.0	-	-	0.2	100
Musanze	19.9	39.4	38.7	-	-	2.0	100
Burera	13.3	38.7	44.3	-	-	3.7	100
Gicumbi	17.0	39.6	43.0	-	-	0.4	100
Rwamagana	12.2	38.8	45.8	0.2	-	3.0	100
Nyagatare	3.5	49.0	44.6	0.3	-	2.7	100
Gatsibo	9.9	44.9	43.3	-	0.2	1.8	100
Kayonza	10.1	43.8	40.5	0.3	1.4	4.1	100
Kirehe	2.1	39.1	57.9	-	-	1.0	100
Ngoma	4.6	45.1	49.5	-	0.4	0.4	100
Bugesera	12.0	30.6	55.7	-	-	1.6	100
National	12.7	39.9	45.2	0.1	0.5	1.8	100

Table 55: 2023 Season C Percentage of plots by type of inorganic fertilizer per district

District	Season C					
	NPK	Urea	DAP	KCL/MOP	Lime	Others
Nyarugenge	7.3	60.0	25.5	-	-	7.3
Gasabo	27.6	42.9	25.7	-	-	3.8
Kicukiro	12.5	54.2	33.3	-	-	-
Nyanza	23.7	45.3	16.2	-	-	14.9
Gisagara	27.6	34.5	34.5	-	-	3.5
Nyaruguru	41.4	10.3	37.9	-	8.1	2.3
Huye	20.6	47.5	30.5	-	-	1.4
Nyamagabe	72.6	18.6	5.9	-	2.0	1.0
Ruhango	22.2	42.6	29.6	-	-	5.6
Muhanga	18.6	40.7	27.9	-	-	12.8
Kamonyi	19.1	48.8	30.2	-	-	1.9
Karongi	40.5	21.6	35.1	-	-	2.7
Rutsiro	81.1	13.2	3.8	-	1.9	-
Rubavu	50.5	21.7	23.7	-	-	4.1
Nyabihu	67.6	17.1	6.2	-	-	9.1
Ngororero	36.8	19.3	40.4	-	-	3.5
Rusizi	34.9	31.4	26.7	0.6	-	6.4
Nyamasheke	20.8	46.5	29.7	-	-	3.0
Rulindo	55.5	29.5	9.6	-	0.7	4.8
Gakenke	74.8	13.6	10.7	-	-	1.0
Musanze	62.7	11.0	18.4	-	0.5	7.5
Burera	85.4	2.3	6.4	-	-	5.9
Gicumbi	70.6	17.7	10.9	-	-	0.8
Rwamagana	12.7	32.4	43.7	-	1.4	9.9
Nyagatare	12.9	45.9	27.1	-	-	14.1
Gatsibo	30.4	40.2	18.6	-	-	10.8
Kayonza	37.3	37.3	18.6	-	-	6.8
Kirehe	21.1	47.4	28.1	-	-	3.5
Ngoma	12.0	40.0	34.0	-	-	14.0
Bugesera	11.8	38.2	48.0	-	-	2.0
National	**41.17**	**30.48**	**22.23**	**0.03**	**0.42**	**5.67**

Table 56: Season A 2023_Use of pesticides by farmer type 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	17.6	17.6		43.2	43.2		40.2	40.2	
Gasabo	22.4	20.5	80.0	68.9	69.0	39.5	74.2	73.2	82.4
Kicukiro	32.3	31.3	100.0	60.5	60.5	75.0	75.9	74.7	99.6
Nyanza	33.4	32.1	100.0	37.9	37.9	68.8	40.4	34.9	99.4
Gisagara	36.4	33.5	100.0	42.5	42.5	96.0	60.6	39.8	99.0
Nyaruguru	38.6	36.7	100.0	51.1	51.1	83.3	57.6	56.9	76.0
Huye	47.1	44.2	96.0	22.9	22.9	100.0	34.6	27.6	100.0
Nyamagabe	28.2	27.9	100.0	42.0	42.0	87.5	52.0	51.8	97.0
Ruhango	27.8	26.3	100.0	43.3	43.3	83.3	52.5	46.9	98.2
Muhanga	37.5	36.6	100.0	37.3	37.3	100.0	40.0	36.8	100.0
Kamonyi	29.1	27.8	83.3	27.4	27.4	100.0	39.6	35.2	100.0
Karongi	35.5	35.3	100.0	34.8	34.8	100.0	33.1	33.0	100.0
Rutsiro	31.0	31.0		34.4	34.4		43.8	43.8	
Rubavu	60.5	60.6	50.0	52.1	52.1	60.0	66.1	66.1	50.3
Nyabihu	74.9	74.9		64.5	64.5		67.9	67.9	
Ngororero	27.0	27.0		44.9	44.9		57.2	57.2	
Rusizi	22.0	20.8	80.0	41.2	41.2	100.0	59.3	48.8	100.0
Nyamasheke	16.1	14.7	100.0	32.5	32.5	100.0	40.8	35.6	100.0
Rulindo	39.2	39.0	60.0	45.7	45.7	88.2	51.6	51.5	74.6
Gakenke	37.8	37.8		35.6	35.6		43.3	43.3	
Musanze	68.4	68.2	100.0	59.3	59.3	83.3	61.7	61.7	92.4
Burera	65.2	65.2		62.1	62.1		62.2	62.2	
Gicumbi	25.8	25.6	100.0	67.7	67.6	100.0	65.8	65.7	100.0
Rwamagana	36.2	33.3	87.1	52.0	52.0	53.3	56.8	55.0	90.3
Nyagatare	19.1	14.0	92.3	62.8	62.8	85.2	80.2	74.6	95.3
Gatsibo	32.0	29.7	92.0	38.0	38.0	77.8	50.1	42.8	99.5
Kayonza	25.3	21.7	82.1	44.4	44.4	58.6	52.9	44.4	93.0
Kirehe	28.3	27.4	100.0	49.9	49.9	84.6	60.5	54.8	97.7
Ngoma	25.7	23.9	88.2	27.8	27.8	60.0	45.1	40.5	94.5
Bugesera	18.3	16.4	50.0	56.0	56.0	85.4	59.8	52.4	99.8
National	34.5	33.2	86.3	46.1	46.1	72.5	54.7	51.4	97.0

Source: NISR, SAS 2023

Table 57: Season B 2023_ Use of pesticides by farmer type 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	21.0	21.0	-	31.8	31.8	-	40.1	40.1	-
Gasabo	29.6	28.0	80.0	48.8	48.8	43.8	51.6	48.2	87.3
Kicukiro	20.6	19.2	100.0	66.8	66.8	20.0	80.0	79.4	87.2
Nyanza	36.5	35.6	100.0	32.4	32.4	80.0	34.9	31.3	98.9
Gisagara	20.4	17.8	100.0	46.5	46.5	100.0	66.4	41.5	100.0
Nyaruguru	26.9	26.2	50.0	44.0	44.0	66.7	45.2	44.5	71.0
Huye	31.0	29.1	92.9	26.4	26.4	100.0	35.4	29.6	100.0
Nyamagabe	30.9	30.4	100.0	41.3	41.3	100.0	49.3	48.9	100.0
Ruhango	14.3	12.5	78.6	48.0	48.0	90.9	61.2	52.9	97.8
Muhanga	27.4	26.7	100.0	33.1	33.1	80.0	36.2	35.0	97.7
Kamonyi	21.0	20.2	100.0	42.3	42.3	100.0	42.0	39.8	100.0
Karongi	26.6	26.4	100.0	41.0	41.0	100.0	43.6	43.5	100.0
Rutsiro	26.8	26.8	-	53.3	53.3	-	62.0	62.0	-
Rubavu	63.7	63.5	75.0	62.4	62.4	44.4	75.0	75.1	43.8
Nyabihu	76.2	76.2	-	65.1	65.1	-	73.8	73.8	-
Ngororero	25.0	25.0	-	45.0	45.0	-	58.2	58.2	-
Rusizi	13.5	12.0	80.0	62.7	62.7	100.0	76.7	66.1	100.0
Nyamasheke	12.7	11.1	88.9	44.1	44.1	100.0	59.3	54.1	100.0
Rulindo	30.5	29.7	100.0	57.4	57.3	100.0	63.6	63.3	100.0
Gakenke	39.9	39.9	-	28.8	28.8	-	38.3	38.3	-
Musanze	81.4	81.2	100.0	56.5	56.5	55.6	60.9	60.8	75.6
Burera	55.4	55.4	-	49.9	49.9	-	53.1	53.1	-
Gicumbi	27.1	26.8	100.0	48.2	48.2	100.0	47.8	47.7	100.0
Rwamagana	33.0	30.5	79.3	38.8	38.8	50.4	47.2	44.9	84.6
Nyagatare	20.3	16.0	83.8	53.6	53.6	80.3	72.5	66.6	98.1
Gatsibo	20.8	19.4	58.3	39.6	39.6	74.1	53.5	45.3	98.7
Kayonza	25.7	22.0	89.3	42.1	42.1	43.7	56.6	50.5	90.8
Kirehe	11.7	10.8	87.5	50.9	50.9	90.0	62.6	50.7	99.9
Ngoma	18.5	16.8	77.8	23.3	23.3	52.6	35.3	27.2	95.3
Bugesera	19.5	17.3	55.9	40.3	40.3	86.4	58.4	50.5	99.8
National	29.7	28.6	79.9	45.7	45.7	66.1	54.7	51.3	97.0

Source: NISR, SAS 2023

Table 58: Season C 2023_Use of pesticides 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	SITE	Overall	SSF	SITE	Overall	SSF	SITE
Nyarugenge	80.0	72.0	85.7	96.8	95.2	98.2	96.5	96.4	96.9
Gasabo	83.6	72.7	88.2	84.3	74.3	96.2	93.0	89.2	96.6
Kicukiro	46.2	33.3	51.9	88.7	100.0	84.9	95.5	100.0	84.2
Nyanza	83.5	77.3	84.7	91.3	100.0	88.7	93.5	100.0	90.5
Gisagara	57.8	54.6	59.0	84.5	92.5	82.5	81.9	94.9	77.4
Nyaruguru	33.6	41.9	31.0	66.7	47.3	88.7	75.6	67.3	88.2
Huye	57.0	51.1	59.4	71.5	65.4	75.8	76.5	69.3	80.2
Nyamagabe	49.0	40.0	50.6	89.7	100.0	84.4	93.1	100.0	91.2
Ruhango	57.3	44.4	60.9	85.8	94.4	78.4	84.0	91.0	79.4
Muhanga	68.1	34.4	80.5	86.7	97.4	81.7	87.4	94.0	84.9
Kamonyi	89.3	67.5	97.3	80.7	71.7	87.5	92.0	83.4	94.9
Karongi	52.3	15.4	67.7	92.9	100.0	89.8	89.6	100.0	88.7
Rutsiro	60.7	60.0	60.7	96.5	100.0	96.2	93.5	100.0	92.6
Rubavu	82.9	80.0	100.0	87.9	87.4	100.0	93.6	93.3	100.0
Nyabihu	90.4	88.4	94.3	93.9	93.7	98.4	94.7	94.5	99.2
Ngororero	33.3	28.6	33.8	12.5	38.8	12.0	69.8	77.8	66.6
Rusizi	88.5	79.2	91.7	94.3	100.0	92.9	95.8	100.0	95.1
Nyamasheke	58.8	0.0	63.3	78.5		78.5	81.6		81.6
Rulindo	81.8	88.9	80.4	81.2	83.4	80.3	93.2	95.1	91.3
Gakenke	59.8	57.8	61.0	94.2	97.5	87.7	92.8	95.5	88.8
Musanze	73.7	73.1	74.0	94.2	92.6	99.7	97.5	96.9	99.8
Burera	82.8	77.1	90.9	85.8	88.1	78.8	93.4	93.8	91.5
Gicumbi	63.7	35.3	76.0	95.3	100.0	88.1	97.0	100.0	95.8
Rwamagana	83.0	87.5	81.1	79.9	90.8	70.5	87.5	93.1	80.5
Nyagatare	66.1	71.4	60.7	97.0	98.0	78.5	96.0	96.7	82.6
Gatsibo	83.1	85.7	82.7	95.1	100.0	94.2	93.6	100.0	88.8
Kayonza	66.1	81.8	62.5	80.7	100.0	68.4	91.2	100.0	84.4
Kirehe	67.1	85.7	63.1	79.0	79.5	78.8	77.6	79.5	77.0
Ngoma	60.9	50.0	64.6	72.2	56.5	73.8	81.0	52.4	82.0
Bugesera	71.9	72.7	71.4	94.3	86.3	98.5	99.0	97.6	99.6
National	69.3	66.6	70.5	86.2	87.9	84.4	91.9	93.7	89.1

Source: NISR, SAS 2023

Table 59: 2023 Season A Percentage of plots by type of pesticides per district

District	Type of pesticides								
	Dithane	Ridomil	Dimethoate	Cypermetrin	Dursiban	Rocket	Beam	Other	Total
Nyarugenge	25.0	-	14.3	3.6	-	50.0	-	7.1	100
Gasabo	18.0	2.0	9.0	8.0	-	50.0	3.0	10.0	100
Kicukiro	4.9	-	3.3	11.5	-	63.9	1.6	14.8	100
Nyanza	8.0	-	2.3	8.0	-	70.5	4.6	6.8	100
Gisagara	3.6	-	1.8	20.7	-	60.4	9.0	4.5	100
Nyaruguru	25.5	-	-	9.6	-	61.7	-	3.2	100
Huye	10.7	-	0.9	19.6	-	50.9	13.4	4.5	100
Nyamagabe	34.9	4.7	0.9	24.5	-	32.1	-	2.8	100
Ruhango	4.7	1.2	1.2	9.4	-	74.1	8.2	1.2	100
Muhanga	10.4	2.8	0.9	19.8	-	59.4	2.8	3.8	100
Kamonyi	16.2	2.6	6.0	6.0	-	53.9	1.7	13.7	100
Karongi	18.8	1.5	2.9	23.2	1.5	49.3	-	2.9	100
Rutsiro	67.5	1.3	10.0	11.3	-	7.5	-	2.5	100
Rubavu	35.1	19.7	13.5	21.8	-	8.8	-	1.2	100
Nyabihu	32.8	11.2	13.0	19.3	-	13.9	-	9.9	100
Ngororero	41.1	4.7	2.8	20.6	-	27.1	-	3.7	100
Rusizi	12.1	-	7.1	26.3	-	36.4	3.0	15.2	100
Nyamasheke	4.6	4.6	4.6	31.8	-	31.8	6.8	15.9	100
Rulindo	32.9	-	3.7	5.1	-	46.7	-	11.7	100
Gakenke	13.6	10.7	0.7	22.1	-	44.3	-	8.6	100
Musanze	28.8	4.5	3.1	17.8	0.3	37.3	-	8.2	100
Burera	24.2	6.1	8.0	18.5	-	36.6	-	6.7	100
Gicumbi	39.7	2.0	1.3	2.0	-	47.7	-	7.3	100
Rwamagana	16.2	1.5	15.4	8.1	-	37.1	3.5	18.2	100
Nyagatare	11.0	1.0	7.5	15.9	-	36.3	4.5	23.9	100
Gatsibo	10.8	0.6	4.0	7.4	-	56.3	2.3	18.8	100
Kayonza	11.2	-	7.1	11.2	-	42.0	7.7	20.7	100
Kirehe	5.8	0.7	5.8	12.3	-	65.9	1.5	8.0	100
Ngoma	15.3	-	10.2	7.3	-	51.8	4.4	11.0	100
Bugesera	18.5	1.9	9.3	15.4	-	38.9	8.0	8.0	100
National	22.2	4.8	7.0	15.2	0.0	38.9	2.4	9.4	100

Source: NISR, SAS 2023

Table 60: 2023 Season B Percentage of plots by type of pesticides per district

District	Type of pesticides								
	Dithane	Ridomil	Dimethoate	Cypermetrin	Dursiban	Rocket	Beam	Other	Total
Nyarugenge	24.2	-	12.1	6.1	-	39.4	-	18.2	100.0
Gasabo	23.2	3.2	6.3	9.5	-	44.2	3.2	10.5	100.0
Kicukiro	13.6	-	6.8	13.6	-	50.0	2.3	13.6	100.0
Nyanza	10.6	1.1	-	14.9	-	61.7	5.3	6.4	100.0
Gisagara	9.9	-	5.5	19.8	-	44.0	12.1	8.8	100.0
Nyaruguru	38.7	-	3.2	9.7	-	25.8	-	22.6	100.0
Huye	11.1	-	1.4	25.0	-	45.8	12.5	4.2	100.0
Nyamagabe	32.8	1.6	0.8	26.2	-	35.3	-	3.3	100.0
Ruhango	12.3	4.6	3.1	7.7	-	56.9	9.2	6.2	100.0
Muhanga	8.6	1.7	5.2	15.5	1.7	63.8	3.5	-	100.0
Kamonyi	23.3	1.2	5.8	7.0	-	50.0	1.2	11.6	100.0
Karongi	19.1	4.4	5.9	27.9	-	38.2	-	4.4	100.0
Rutsiro	65.9	9.1	2.3	6.8	-	10.2	-	5.7	100.0
Rubavu	33.2	21.9	13.7	22.4	-	7.5	-	1.2	100.0
Nyabihu	33.4	18.5	15.5	16.3	-	6.6	-	9.8	100.0
Ngororero	36.1	4.8	2.4	4.8	-	47.0	-	4.8	100.0
Rusizi	12.3	-	12.3	35.4	-	16.9	4.6	16.9	100.0
Nyamasheke	9.8	5.9	5.9	47.1	-	11.8	5.9	13.7	100.0
Rulindo	33.1	3.7	4.4	3.7	-	44.1	0.7	10.3	100.0
Gakenke	10.2	6.8	0.9	37.3	-	36.4	-	8.5	100.0
Musanze	37.7	7.1	13.6	17.3	-	16.9	-	7.4	100.0
Burera	38.1	4.9	4.5	27.2	0.4	17.0	-	7.9	100.0
Gicumbi	44.7	1.8	-	5.3	-	40.4	-	7.9	100.0
Rwamagana	18.3	1.7	12.6	6.1	-	41.3	3.9	16.1	100.0
Nyagatare	9.4	0.6	10.5	12.2	-	39.2	4.4	23.8	100.0
Gatsibo	12.1	0.9	2.6	15.5	0.9	49.1	3.5	15.5	100.0
Kayonza	16.3	0.6	8.1	13.8	-	40.0	6.9	14.4	100.0
Kirehe	24.3	2.9	5.7	18.6	-	32.9	5.7	10.0	100.0
Ngoma	22.1	1.0	10.6	15.4	-	22.1	5.8	23.1	100.0
Bugesera	11.8	-	8.2	14.7	-	43.5	8.2	13.5	100.0
National	**26.9**	**7.4**	**8.8**	**17.1**	**0.1**	**27.8**	**2.3**	**9.6**	**100.0**

Table 61: 2023 Season C Percentage of plots by type of pesticides per district

	Dithane	Ridomil	Dimethoate	Cypermethrin	Dursiban	Pilkare	Rocket	Others	Total
Nyarugenge	23.16	-	13.68	5.26	-	-	29.47	28.42	100
Gasabo	25.74	0.99	12.87	6.93	-	0.99	31.68	20.79	100
Kicukiro	18.52	-	18.52	11.11	-	-	40.74	11.11	100
Nyanza	18.29	1.22	3.05	4.27	-	-	59.76	13.41	100
Gisagara	21.31	-	6.56	-	-	-	63.93	8.20	100
Nyaruguru	35.14	-	-	5.41	-	-	24.32	35.14	100
Huye	18.87	-	5.66	14.15	-	-	56.60	4.72	100
Nyamagabe	52.46	8.20	-	3.28	-	-	36.07	-	100
Ruhango	27.59	-	3.45	1.72	-	-	65.52	1.72	100
Muhanga	21.88	1.04	5.21	18.75	-	-	46.88	6.25	100
Kamonyi	33.64	3.23	6.91	4.15	-	0.46	43.78	7.83	100
Karongi	46.43	-	14.29	14.29	-	-	21.43	3.57	100
Rutsiro	53.03	9.09	1.52	30.30	-	-	4.55	1.52	100
Rubavu	37.65	7.65	17.65	22.94	-	-	7.06	7.06	100
Nyabihu	45.57	3.28	16.72	9.84	-	-	11.80	12.79	100
Ngororero	59.09	-	-	13.64	-	-	27.27	-	100
Rusizi	23.78	1.22	14.63	7.32	-	-	29.88	23.17	100
Nyamasheke	29.07	-	1.16	24.42	-	-	27.91	17.44	100
Rulindo	42.34	-	4.50	6.31	-	-	30.63	16.22	100
Gakenke	19.32	10.23	2.27	25.00	1.14	-	19.32	22.73	100
Musanze	43.69	5.12	12.97	17.41	-	-	11.60	9.22	100
Burera	45.79	6.23	9.89	18.32	-	-	10.26	9.52	100
Gicumbi	60.44	-	2.20	3.30	-	-	26.37	7.69	100
Rwamagana	21.54	-	16.92	9.23	-	-	27.69	24.62	100
Nyagatare	27.14	-	17.14	11.43	-	-	15.71	28.57	100
Gatsibo	27.71	-	2.41	4.82	-	-	48.19	16.87	100
Kayonza	35.06	-	19.48	5.19	-	-	19.48	20.78	100
Kirehe	26.97	2.25	16.85	4.49	-	-	35.96	13.48	100
Ngoma	25.93	-	16.67	16.67	-	-	29.63	11.11	100
Bugesera	18.85	0.82	12.30	13.93	-	-	42.62	11.48	100
National	**33.99**	**2.77**	**10.12**	**11.68**	**0.03**	**0.06**	**28.48**	**12.87**	100

Table 62: Percentage of farmers by agricultural practices in Season A 2023

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	87.8	87.8		-	-		7.5	7.5		38.2	38.2	
Gasabo	92.9	92.6	100.0	1.0	0.3	20.0	11.4	10.1	50.0	54.2	53.6	72.7
Kicukiro	62.1	61.5	100.0	1.5	1.0	33.3	9.2	8.9	33.3	57.1	56.6	80.0
Nyanza	93.9	93.7	100.0	0.7	0.7	-	12.3	10.8	88.9	36.6	36.5	44.4
Gisagara	93.3	93.6	85.7	0.2	0.2	-	21.9	19.6	71.4	43.4	45.0	9.1
Nyaruguru	95.8	95.7	100.0	0.3	-	10.0	4.5	4.0	20.0	36.5	36.0	60.0
Huye	96.4	96.2	100.0	0.7	0.7	-	28.9	24.7	100.0	43.6	44.2	32.0
Nyamagabe	96.7	96.7	100.0	1.2	1.2	-	5.2	5.2	-	36.9	36.7	100.0
Ruhango	92.1	92.2	88.9	-	-	-	14.0	12.5	88.9	31.0	31.1	27.3
Muhanga	88.5	88.3	100.0	-	-	-	19.7	18.9	71.4	36.8	36.3	71.4
Kamonyi	94.7	94.6	100.0	0.2	0.2	-	15.9	14.1	91.7	31.9	32.6	-
Karongi	96.7	96.7	100.0	-	-	-	9.9	10.0	-	48.1	48.0	100.0
Rutsiro	94.7	94.7		-	-		0.6	0.6		47.5	47.5	
Rubavu	96.3	96.3	100.0	0.5	0.5	-	0.5	0.3	25.0	34.0	33.7	75.0
Nyabihu	95.6	95.6		-	-		0.2	0.2		58.4	58.4	
Ngororero	96.5	96.5		0.6	0.6		4.1	4.1		43.8	43.8	
Rusizi	85.5	85.2	100.0	0.2	0.2	-	8.4	7.5	50.0	63.2	63.9	30.0
Nyamasheke	93.9	93.8	100.0	0.2	0.2	-	5.8	4.5	85.7	52.4	52.7	33.3
Rulindo	96.0	96.0	100.0	0.5	0.2	20.0	14.3	14.0	40.0	51.8	51.9	40.0
Gakenke	99.7	99.7		-	-		3.8	3.8		48.7	48.7	
Musanze	88.5	88.5	100.0	0.6	0.4	33.3	1.2	1.2	-	41.7	41.4	100.0
Burera	97.1	97.1		0.4	0.4		1.9	1.9		39.6	39.6	
Gicumbi	98.0	98.0	100.0	-	-	-	2.4	2.2	50.0	24.9	24.6	100.0
Rwamagana	91.7	91.4	96.8	0.7	0.7	-	16.7	14.2	61.3	62.5	61.9	74.2
Nyagatare	90.3	90.3	89.7	10.9	6.8	69.2	7.2	3.8	56.4	44.8	45.0	41.5
Gatsibo	95.4	95.3	100.0	5.6	3.1	72.0	13.8	11.9	64.0	59.6	59.2	72.0
Kayonza	88.5	87.8	100.0	2.8	0.2	42.9	19.2	15.2	82.1	57.4	57.9	48.4
Kirehe	84.0	83.8	100.0	0.2	0.2	-	9.1	8.3	75.0	50.3	50.5	33.3
Ngoma	91.0	90.8	100.0	1.4	0.7	29.4	10.3	8.3	82.4	50.9	51.4	31.6
Bugesera	77.6	78.0	70.6	0.8	0.5	5.9	21.0	18.9	55.9	53.7	52.9	67.5
National	92.1	92.1	94.1	1.2	0.7	21.7	10.3	9.0	66.5	46.0	46.0	48.8

Source: NISR, SAS 2023

Table 63: Percentage of farmers by agricultural practices in Season B 2023

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	77.4	77.4	-	-	-	-	6.2	6.2	-	42.4	42.4	-
Gasabo	94.4	94.2	100.0	1.9	0.6	40.0	8.1	6.8	50.0	46.6	46.1	63.6
Kicukiro	42.8	42.4	66.7	0.6	-	33.3	8.9	7.9	66.7	44.9	44.6	66.7
Nyanza	95.1	95.1	100.0	-	-	-	15.4	14.2	100.0	32.1	32.0	37.5
Gisagara	92.6	93.0	80.0	0.2	0.2	-	22.1	20.6	66.7	42.0	43.5	-
Nyaruguru	97.9	97.9	100.0	0.3	-	10.0	10.4	8.5	70.0	33.5	32.3	80.0
Huye	96.5	96.4	100.0	0.2	0.2	-	28.6	26.4	100.0	41.4	41.5	40.0
Nyamagabe	97.1	97.0	100.0	0.2	0.2	-	10.2	10.3	-	33.5	33.1	100.0
Ruhango	86.3	85.9	100.0	-	-	-	8.2	6.5	71.4	17.8	17.8	20.0
Muhanga	88.9	88.8	100.0	-	-	-	11.1	10.5	75.0	37.7	36.9	87.5
Kamonyi	94.3	94.3	100.0	0.2	0.2	-	7.9	7.4	60.0	29.8	30.2	-
Karongi	97.0	97.0	100.0	-	-	-	10.8	10.6	100.0	37.2	37.1	100.0
Rutsiro	91.5	91.5	-	-	-	-	0.3	0.3	-	42.0	42.0	-
Rubavu	96.0	96.2	75.0	-	-	-	0.3	0.3	-	42.9	42.3	100.0
Nyabihu	96.8	96.8	-	-	-	-	1.1	1.1	-	51.5	51.5	-
Ngororero	98.3	98.3	-	0.4	0.4	-	6.5	6.5	-	45.5	45.5	-
Rusizi	79.2	79.0	90.0	-	-	-	1.7	0.9	40.0	50.6	51.0	30.0
Nyamasheke	97.7	97.7	100.0	-	-	-	4.4	3.1	66.7	46.6	46.8	33.3
Rulindo	97.2	97.1	100.0	1.0	0.7	20.0	15.8	15.6	40.0	46.9	46.7	60.0
Gakenke	99.3	99.3	-	0.2	0.2	-	2.8	2.8	-	35.0	35.0	-
Musanze	91.1	91.0	100.0	0.2	-	25.0	2.9	2.9	-	30.7	30.2	100.0
Burera	94.6	94.6	-	-	-	-	2.0	2.0	-	35.2	35.2	-
Gicumbi	97.1	97.1	100.0	0.2	0.2	-	5.3	5.3	-	22.1	21.8	100.0
Rwamagana	93.7	93.5	96.6	0.4	0.4	-	15.7	13.0	65.5	52.4	51.5	72.4
Nyagatare	84.0	83.4	91.9	6.8	3.6	54.1	9.2	4.9	73.0	42.2	43.1	28.6
Gatsibo	97.4	97.3	100.0	2.8	1.2	45.8	11.6	10.0	54.2	52.5	51.6	76.0
Kayonza	85.8	85.4	92.9	2.2	-	39.3	18.4	14.2	89.3	43.8	44.2	36.7
Kirehe	87.8	87.7	100.0	0.3	-	25.0	4.5	3.7	75.0	42.0	42.2	25.0
Ngoma	90.4	90.1	100.0	0.8	0.3	16.7	11.3	9.5	72.2	45.3	45.7	33.3
Bugesera	78.6	78.6	79.4	0.7	0.2	8.8	17.7	15.9	47.1	49.3	48.9	56.4
National	91.6	91.5	93.6	0.7	0.3	19.5	9.6	8.4	64.8	40.3	40.2	46.8

Source: NISR, SAS 2023

Table 64: Percentage of farmers by agricultural practices in Season C 2023

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**	**SITE**	**Overall**	**SSF**	**SITE**	**Overall**	**SSF**	**SITE**	**Overall**	**SSF**	**SITE**
Nyarugenge	80.0	56.0	97.1	-	-	-	76.7	56.0	91.4	-	-	-
Gasabo	93.2	90.9	94.1	-	-	-	90.4	81.8	94.1	18.0	18.0	-
Kicukiro	41.0	25.0	48.2	-	-	-	84.6	66.7	92.6	3.6	3.6	-
Nyanza	100.0	100.0	100.0	-	-	-	97.7	100.0	97.3	6.8	6.8	-
Gisagara	98.8	95.5	100.0	-	-	-	67.5	54.6	72.1	6.4	6.4	-
Nyaruguru	99.2	96.8	100.0	-	-	-	87.8	80.7	90.0	5.2	5.2	-
Huye	96.7	97.8	96.2	0.7	-	0.9	90.1	84.4	92.5	6.3	6.3	-
Nyamagabe	97.9	100.0	97.5	-	-	-	15.6	26.7	13.6	9.3	9.3	-
Ruhango	98.8	100.0	98.4	-	-	-	80.5	66.7	84.4	13.5	13.5	-
Muhanga	100.0	100.0	100.0	-	-	-	84.0	56.3	94.3	10.3	10.3	-
Kamonyi	100.0	100.0	100.0	-	-	-	93.3	77.5	99.1	7.7	7.7	-
Karongi	97.7	92.3	100.0	-	-	-	63.6	38.5	74.2	21.3	21.3	-
Rutsiro	95.1	100.0	94.6	-	-	-	29.5	40.0	28.6	43.6	43.6	-
Rubavu	98.7	98.5	100.0	2.6	3.1	-	4.0	4.6	-	25.1	25.1	-
Nyabihu	98.7	99.0	98.1	-	-	-	3.9	1.9	7.6	33.3	33.3	-
Ngororero	98.7	100.0	98.5	-	-	-	33.3	57.1	30.9	27.6	27.6	-
Rusizi	74.0	66.7	76.4	-	-	-	84.4	79.2	86.1	8.5	8.5	-
Nyamasheke	100.0	100.0	100.0	-	-	-	88.2	100.0	87.3	50.9	50.9	-
Rulindo	99.1	100.0	98.9	-	-	-	98.2	88.9	100.0	24.6	24.6	-
Gakenke	95.9	88.9	100.0	-	-	-	59.0	60.0	58.4	13.2	13.2	-
Musanze	98.9	100.0	98.4	-	-	-	11.2	15.4	9.5	28.4	28.4	-
Burera	98.4	97.3	100.0	-	-	-	23.7	18.4	31.2	21.5	21.5	-
Gicumbi	99.1	97.1	100.0	-	-	-	90.3	76.5	96.2	14.8	14.8	-
Rwamagana	75.5	75.0	75.7	-	-	-	79.3	62.5	86.5	5.9	5.9	-
Nyagatare	83.9	78.6	89.3	1.8	-	3.6	85.7	92.9	78.6	29.0	29.0	-
Gatsibo	98.3	85.7	100.0	-	-	-	94.9	100.0	94.2	21.6	21.6	-
Kayonza	94.9	100.0	93.8	1.7	-	2.1	88.1	81.8	89.6	16.2	16.2	-
Kirehe	96.2	92.9	96.9	-	-	-	94.9	85.7	96.9	32.4	32.4	-
Ngoma	82.8	87.5	81.3	-	-	-	76.6	87.5	72.9	23.3	23.3	-
Bugesera	85.4	81.8	87.3	-	-	-	59.4	39.4	69.8	8.7	8.7	-
National	**94.8**	**92.7**	**95.8**	**0.2**	**0.2**	**0.2**	**64.6**	**48.4**	**71.8**	**21.9**	**21.9**	

Source: NISR, SAS 2023

Table 65: 2023 Season A Percentage of plots by types of irrigation used

District	Modern irrigation					Traditional techniques
	Surface irrigation	Flood irrigation	Drip irrigation	Sprinkler irrigation	Pivot irrigation	
Nyarugenge	33.3	-	-	-	-	66.7
Gasabo	-	6.1	-	-	-	93.9
Kicukiro	33.3	8.3	-	-	-	58.3
Nyanza	39.1	21.7	-	-	-	39.1
Gisagara	7.3	58.5	-	-	-	34.2
Nyaruguru	33.3	-	-	22.2	-	44.4
Huye	35.9	3.8	-	-	-	60.4
Nyamagabe	62.5	-	-	-	-	37.5
Ruhango	13.0	34.8	-	-	-	52.2
Muhanga	32.4	8.8	-	-	-	58.8
Kamonyi	6.3	6.3	-	9.4	-	78.1
Karongi	18.2	-	9.1	-	-	72.7
Rutsiro						
Rubavu						
Nyabihu						
Ngororero	33.3	-	-	-	-	66.7
Rusizi	12.5	50.0	-	-	-	37.5
Nyamasheke	-	66.7	-	-	-	33.3
Rulindo	7.4	3.7	18.5	-	-	70.4
Gakenke	22.2	-	-	-	-	77.8
Musanze						
Burera	100.0	-	-	-	-	-
Gicumbi	-	-	-	-	-	100.0
Rwamagana	8.8	10.3	26.5	1.5	-	52.9
Nyagatare	41.2	20.6	-	-	29.4	8.8
Gatsibo	7.7	18.0	-	-	15.4	59.0
Kayonza	42.4	14.1	3.3	2.2	1.1	37.0
Kirehe	13.0	17.4	-	21.7	26.1	21.7
Ngoma	-	22.9	-	-	40.0	37.1
Bugesera	30.0	17.8	1.1	26.7	5.6	18.9
National	22.2	16.9	3.8	5.0	5.7	46.4

Source: NISR, SAS 2023

Table 66: 2023 Season B Percentage of plots by types of irrigation used

District	Modern irrigation					Traditional techniques
	Surface irrigation	Flood irrigation	Drip irrigation	Sprinkler irrigation	Pivot irrigation	
Nyarugenge	16.7	-	-	-	-	83.3
Gasabo	-	17.7	-	-	-	82.4
Kicukiro	41.7	-	-	-	-	58.3
Nyanza	44.0	20.0	-	-	-	36.0
Gisagara	12.9	41.9	-	3.2	-	41.9
Nyaruguru	5.3	-	-	5.3	-	89.5
Huye	-	60.9	-	-	-	39.1
Nyamagabe	55.6	-	-	-	-	44.4
Ruhango	24.0	28.0	-	-	-	48.0
Muhanga	-	27.3	-	-	-	72.7
Kamonyi	22.7	9.1	-	-	-	68.2
Karongi	33.3	-	16.7	-	-	50.0
Nyabihu	-	-	-	-	-	100.0
Ngororero	50.0	-	-	-	-	50.0
Rusizi	-	80.0	-	-	-	20.0
Nyamasheke	14.3	85.7	-	-	-	-
Rulindo	9.1	-	9.1	4.6	-	77.3
Gakenke	-	-	-	-	-	100.0
Musanze	-	-	-	-	-	100.0
Burera	50.0	-	-	-	-	50.0
Gicumbi	-	-	-	-	-	100.0
Rwamagana	1.5	12.3	21.5	9.2	-	55.4
Nyagatare	57.9	12.3	-	-	14.0	15.8
Gatsibo	-	18.2	-	-	3.0	78.8
Kayonza	51.4	16.2	-	5.4	2.7	24.3
Kirehe	21.1	26.3	-	-	31.6	21.1
Ngoma	20.0	32.0	4.0	-	-	44.0
Bugesera	39.7	36.2	3.5	3.5	3.5	13.8
National	**24.8**	**20.5**	**3.3**	**2.5**	**3.2**	**45.7**

Source: NISR, SAS 2023

Table 67: 2023 Season C Percentage of plots by types of irrigation used

District	Surface irrigation	Flood irrigation	Drip irrigation	Sprinkler irrigation	Pivot irrigation	Traditional techniques
	Modern irrigation					
Nyarugenge	19.2	-	-	-	-	80.9
Gasabo	48.5	-	-	-	-	51.5
Kicukiro	-	-	-	33.3	-	66.7
Nyanza	0.8	-	-	-	-	99.2
Gisagara	40.4	-	-	-	-	59.6
Nyaruguru	-	-	-	-	-	100.0
Huye	8.0	-	-	-	0.8	91.2
Nyamagabe	23.1	-	-	-	-	76.9
Ruhango	18.8	-	-	-	-	81.3
Muhanga	18.2	-	-	-	-	81.8
Kamonyi	-	-	-	-	-	100.0
Karongi	23.3	-	6.7	6.7	-	63.3
Rutsiro	-	-	-	-	-	100.0
Rubavu	-	-	-	-	-	100.0
Nyabihu	-	-	-	-	-	100.0
Ngororero	57.1	-	-	-	-	42.9
Rusizi	55.6	-	-	8.6	4.9	30.9
Nyamasheke	21.4	-	-	-	-	78.6
Rulindo	3.7	-	2.8	3.7	1.9	87.9
Gakenke	-	-	1.6	-	-	98.4
Musanze	-	-	5.9	-	5.9	88.2
Burera	23.1	-	-	-	-	76.9
Gicumbi	44.7	-	-	-	-	55.3
Rwamagana	92.7	-	-	4.9	2.4	-
Nyagatare	84.9	-	-	3.8	-	11.3
Gatsibo	-	-	-	-	8.3	91.7
Kayonza	10.0	-	-	-	-	90.0
Kirehe	61.8	-	-	-	-	38.2
Ngoma	-	-	-	-	-	100.0
Bugesera	19.6	-	-	-	-	80.4
National	**21.4**	**-**	**0.4**	**1.6**	**0.8**	**75.9**

Source: NISR, SAS 2023

Table 68: Season A Source of water used for irrigation and district in 2023 (%)

District	Source of water used				
	Rainwater	Water treatment	Underground	Lake / streams	Water catchment
Nyarugenge	-	-	33.3	66.7	-
Gasabo	-	15.2	27.3	57.6	-
Kicukiro	-	7.7	15.4	61.5	15.4
Nyanza	-	-	41.9	51.6	6.5
Gisagara	2.0	2.0	51.0	44.9	-
Nyaruguru	-	-	-	100.0	-
Huye	-	5.1	32.2	50.9	11.9
Nyamagabe	-	-	25.0	75.0	-
Ruhango	6.7	-	36.7	53.3	3.3
Muhanga	2.9	-	37.1	51.4	8.6
Kamonyi	-	3.1	46.9	40.6	9.4
Karongi	-	-	27.3	72.7	-
Rutsiro	-	-	-	-	-
Rubavu	-	-	-	-	-
Nyabihu	-	-	-	-	-
Ngororero	-	-	33.3	66.7	-
Rusizi	-	6.3	6.3	87.5	-
Nyamasheke	-	11.1	33.3	44.4	11.1
Rulindo	-	3.6	32.1	46.4	17.9
Gakenke	-	-	44.4	55.6	-
Musanze	-	-	-	-	-
Ngororero	-	-	100.0	-	-
Gicumbi	-	-	-	100.0	-
Rwamagana	-	29.0	13.0	24.6	33.3
Nyagatare	-	2.3	9.1	54.6	34.1
Gatsibo	-	-	34.1	52.3	13.6
Kayonza	-	1.8	23.9	33.9	40.4
Kirehe	-	4.0	24.0	64.0	8.0
Ngoma	12.5	15.0	17.5	50.0	5.0
Bugesera	5.4	1.1	27.2	60.9	5.4
National	1.7	5.6	27.8	49.9	15.0

Source: NISR, SAS 2023

Table 69: Season B Source of water used for irrigation and district in 2023 (%)

District	Source of water used				
	Rainwater	Water treatment	Underground	Lake / streams	Water catchment
Nyarugenge	-	16.7	50.0	16.7	16.7
Gasabo	-	-	35.3	58.8	5.9
Kicukiro	-	7.7	30.8	53.9	7.7
Nyanza	-	-	56.0	28.0	16.0
Gisagara	6.3	6.3	43.8	43.8	-
Nyaruguru	-	-	5.3	94.7	-
Huye	-	4.2	33.3	54.2	8.3
Nyamagabe	-	-	-	100.0	-
Ruhango	-	3.3	40.0	53.3	3.3
Muhanga	-	-	63.6	18.2	18.2
Kamonyi	4.4	-	26.1	56.5	13.0
Karongi	-	14.3	14.3	71.4	-
Nyabihu	50.0	-	50.0	-	-
Rusizi	-	-	25.0	75.0	-
Nyamasheke	-	-	20.0	80.0	-
Rulindo	-	11.1	22.2	33.3	33.3
Gakenke	-	13.6	27.3	54.6	4.6
Musanze	-	-	40.0	60.0	-
Burera	-	-	16.7	66.7	16.7
Ngororero	-	-	50.0	50.0	-
Gicumbi	-	14.3	35.7	42.9	-
Rwamagana	-	17.1	26.3	42.1	14.5
Nyagatare	4.5	-	14.9	43.3	37.3
Gatsibo	2.9	2.9	35.3	41.2	17.7
Kayonza	1.3	1.3	27.6	35.5	34.2
Kirehe	-	-	20.0	65.0	15.0
Ngoma	-	12.0	32.0	48.0	8.0
Bugesera	1.5	4.4	19.1	58.8	16.2
National	**1.5**	**5.2**	**28.3**	**48.9**	**16.0**

Source: NISR, SAS 2023

Table 70: Season C, Source of water used for irrigation and district in 2023 (%)

District	Rainwater	Water treatment	Underground	Lake / streams	Water catchment	Other sources
Nyarugenge	-	-	18.9	73.6	7.6	-
Gasabo	1.5	1.5	50.0	44.1	2.9	-
Kicukiro	-	-	51.5	48.5	-	-
Nyanza	-	-	49.0	49.7	1.3	-
Gisagara	1.6	-	80.7	17.7	-	-
Nyaruguru	-	-	44.5	55.5	-	-
Huye	-	-	46.9	53.1	-	-
Nyamagabe	-	-	7.7	92.3	-	-
Ruhango	-	-	52.6	47.4	-	-
Muhanga	-	-	35.6	61.4	3.0	-
Kamonyi	-	-	38.9	58.3	2.8	-
Karongi	-	-	30.0	30.0	26.7	13.33
Rutsiro	-	-	11.8	88.2	-	-
Rubavu	-	-	50.0	25.0	-	25.00
Nyabihu	-	40.0	40.0	20.0	-	-
Ngororero	-	-	7.1	92.9	-	-
Rusizi	1.2	-	19.1	79.8	-	-
Nyamasheke	-	-	6.9	91.7	1.4	-
Rulindo	-	4.6	40.0	50.0	5.5	-
Gakenke	-	-	27.0	73.0	-	-
Musanze	11.1	5.6	5.6	77.8	-	-
Burera	-	-	15.4	80.8	3.9	-
Gicumbi	-	-	35.3	64.7	-	-
Rwamagana	2.4	-	12.2	78.1	7.3	-
Nyagatare	1.9	-	11.3	84.9	1.9	-
Gatsibo	-	-	70.0	25.0	5.0	-
Kayonza	-	-	75.4	12.3	12.3	-
Kirehe	-	-	9.2	81.6	9.2	-
Ngoma	-	-	48.9	48.9	2.1	-
Bugesera	-	-	52.9	45.1	-	1.96
National	**0.4**	**0.5**	**38.5**	**57.6**	**2.8**	**0.3**

Source: NISR, SAS 2023

Table 71: Type of anti-erosion activities, per season and district in 2023 Season A (%)

District	Ditches	Trees/Windbreak/ shelterbelt	Bench terraces	Progressive terraces	Cover plants	Water drainage	Mulching	Beds/ridges	Water channels	Others
Nyarugenge	38.6	1.5	-	4.2	50.2	-	4.2	0.8	0.5	-
Gasabo	2.8	15.6	0.5	12.0	58.8	2.6	0.3	0.4	7.0	-
Kicukiro	0.9	12.1	0.4	8.5	12.0	2.0	11.1	32.7	20.3	-
Nyanza	8.5	5.2	2.4	2.5	55.1	0.0	1.3	11.1	14.0	-
Gisagara	19.3	4.4	2.0	7.7	47.1	0.3	1.4	2.6	14.4	0.9
Nyaruguru	2.7	9.2	3.2	10.0	62.4	0.5	0.4	0.8	10.5	0.4
Huye	8.2	9.4	1.5	19.1	46.4	0.1	2.0	1.0	12.3	0.1
Nyamagabe	3.7	8.2	11.8	6.7	61.1	0.0	1.4	0.9	6.0	-
Ruhango	6.6	8.1	0.9	8.8	51.1	0.6	2.4	6.8	14.5	-
Muhanga	1.4	3.1	3.1	19.0	61.8	0.0	3.4	1.9	6.0	0.3
Kamonyi	7.9	2.1	0.1	4.7	67.1	0.0	6.2	0.6	11.3	-
Karongi	2.7	11.2	4.2	3.1	69.2	-	0.9	0.9	7.3	0.6
Rutsiro	5.9	3.4	7.8	6.0	60.4	0.1	7.9	0.4	8.1	-
Rubavu	1.3	15.0	7.5	-	29.9	-	0.6	39.8	0.1	5.9
Nyabihu	5.5	4.9	12.4	10.8	53.6	-	0.1	11.8	0.8	0.1
Ngororero	2.1	5.9	6.7	12.2	64.8	-	2.1	0.2	5.8	0.3
Rusizi	2.4	20.6	1.3	10.1	54.9	0.1	5.2	1.0	3.8	0.6
Nyamasheke	2.1	9.9	4.4	10.0	61.4	0.1	4.5	1.1	6.3	0.4
Rulindo	8.0	0.8	7.1	22.0	52.7	0.0	0.1	2.8	6.5	0.1
Gakenke	4.4	6.0	3.4	6.5	62.5	0.6	2.0	0.9	13.4	0.3
Musanze	4.7	8.9	4.8	4.2	30.7	-	1.0	41.7	3.9	0.2
Burera	0.5	3.6	2.5	12.2	60.4	-	0.3	18.7	1.8	-
Gicumbi	0.7	2.0	15.6	19.0	56.7	-	0.7	0.8	4.5	-
Rwamagana	0.6	6.8	2.1	14.0	66.6	0.0	5.0	3.8	1.1	0.0
Nyagatare	2.6	15.4	-	22.3	46.1	1.3	3.9	3.3	5.1	-
Gatsibo	3.3	12.2	0.8	14.2	55.0	0.4	6.9	0.1	7.1	0.1
Kayonza	4.1	17.9	9.6	3.0	41.9	0.4	6.4	7.5	9.2	-
Kirehe	5.2	4.3	0.7	8.6	71.2	0.1	6.7	-	2.6	0.7
Ngoma	3.0	11.3	5.0	0.6	67.6	0.1	9.5	2.2	0.1	0.7
Bugesera	12.0	22.9	1.0	17.3	33.5	0.7	1.6	1.5	9.6	-
National	4.6	7.6	5.1	10.5	56.7	0.2	2.6	5.2	7.3	0.3

Source: NISR, SAS 2023

Table 72: Type of anti-erosion activities, per season and district in 2023 Season B (%)

District	Ditches	Trees/Windbreak/ shelterbelt	Bench terraces	Progressive terraces	Cover plants	Water drainage	Mulching	Beds/ridges	Water channels	Others
Nyarugenge	9.8	6.4	-	19.8	60.0	-	3.3	-	-	9.8
Gasabo	0.4	5.4	0.6	3.4	74.9	1.0	-	0.4	-	0.4
Kicukiro	-	20.2	0.8	13.6	20.5	5.1	9.8	21.3	-	-
Nyanza	8.4	3.1	3.0	1.9	63.3	0.0	1.1	7.8	-	8.4
Gisagara	20.0	1.2	1.7	3.6	45.6	0.2	0.7	2.8	-	20.0
Nyaruguru	6.1	6.7	3.5	14.3	56.0	-	0.6	2.1	0.2	6.1
Huye	8.8	8.1	1.6	20.4	47.1	0.0	1.8	0.5	0.0	8.8
Nyamagabe	2.0	9.8	9.5	6.2	60.2	0.4	1.0	2.5	-	2.0
Ruhango	12.0	12.1	1.0	2.3	60.5	0.0	0.3	1.3	-	12.0
Muhanga	3.2	1.7	3.3	13.8	64.9	0.0	3.1	2.4	0.4	3.2
Kamonyi	4.9	1.3	0.1	5.4	68.7	0.2	6.2	2.4	-	4.9
Karongi	1.4	8.4	4.7	2.1	72.3	-	0.8	0.1	0.2	1.4
Rutsiro	4.8	2.6	5.9	5.8	62.9	-	5.4	0.1	-	4.8
Rubavu	0.2	15.6	7.4	0.9	29.7	-	0.7	44.5	0.4	0.2
Nyabihu	3.6	5.7	12.2	6.3	58.6	-	-	13.2	0.4	3.6
Ngororero	4.4	2.5	7.1	5.9	73.9	-	1.9	0.4	0.3	4.4
Rusizi	2.1	18.8	0.1	9.9	55.9	0.1	6.1	3.1	0.6	2.1
Nyamasheke	3.6	14.6	4.0	7.2	60.3	0.1	5.6	0.6	-	3.6
Rulindo	5.5	1.3	6.2	25.8	50.6	0.6	0.7	2.4	-	5.5
Gakenke	6.3	6.4	4.1	6.0	61.2	-	2.9	0.7	0.1	6.3
Musanze	2.6	11.3	5.4	2.1	28.2	-	2.1	43.3	-	2.6
Burera	1.0	1.8	2.5	12.5	61.7	0.0	0.1	18.7	-	1.0
Gicumbi	1.6	1.5	8.1	17.9	64.5	0.1	0.9	0.6	-	1.6
Rwamagana	1.8	8.6	0.8	8.7	73.4	0.0	2.7	2.9	0.0	1.8
Nyagatare	1.5	16.5	1.3	24.1	42.9	1.2	4.4	1.7	-	1.5
Gatsibo	5.7	13.9	1.8	3.0	61.9	0.0	5.9	0.9	0.2	5.7
Kayonza	4.2	13.3	9.5	1.7	45.5	0.0	5.1	4.2	3.3	4.2
Kirehe	4.8	6.2	0.6	5.7	71.9	0.4	5.9	-	0.5	4.8
Ngoma	2.0	5.9	5.5	0.9	76.5	0.2	6.5	2.5	0.1	2.0
Bugesera	4.7	22.7	2.0	28.9	26.2	3.6	4.8	1.6	-	4.7
National	**4.6**	**7.2**	**4.5**	**9.2**	**58.9**	**0.2**	**2.4**	**5.0**	**0.2**	**4.6**

Source: NISR, SAS 2023

Table 73: Type of anti-erosion activities, per season and district in 2023 Season C (%)

Disrtict	Ditches	Trees/Windbreak / shelterbelt	Bench/Radical terraces	Progressive terraces	Cover plants	Water drainage	Mulching	Beds/ridges	Water channels
Nyarugenge	-	-	-	-	-	10.4	4.7	-	84.9
Gasabo	2.9	2.3	-	10.0	10.8	17.5	2.4	-	54.2
Kicukiro	-	-	-	-	0.3	22.3	-	19.1	58.4
Nyanza	-	-	1.5	0.5	13.6	5.5	4.9	25.8	48.3
Gisagara	0.5	0.1	-	0.5	1.2	16.5	2.0	8.1	71.3
Nyaruguru	2.4	-	0.2	0.2	20.6	4.8	-	36.6	35.2
Huye	-	0.7	-	-	5.9	4.1	2.3	32.9	54.2
Nyamagabe	-	-	3.1	4.7	15.7	2.1	0.4	21.6	52.3
Ruhango	1.7	13.2	-	0.5	28.2	1.2	4.3	3.3	47.6
Muhanga	-	2.7	-	-	18.0	1.6	-	21.3	56.4
Kamonyi	0.3	1.5	-	-	11.8	-	-	31.1	55.3
Karongi	15.6	30.1	-	-	11.7	13.0	7.2	13.3	9.1
Rutsiro	-	2.2	1.7	-	41.2	-	-	-	54.8
Rubavu	3.7	3.1	6.0	2.1	27.7	-	3.4	53.5	0.7
Nyabihu	2.0	7.8	13.3	8.9	55.9	-	0.4	11.5	0.2
Ngororero	0.6	6.4	3.7	-	29.5	3.4	-	2.3	54.1
Rusizi	1.3	1.4	-	-	6.1	-	1.6	11.1	78.6
Nyamasheke	0.3	18.0	2.7	2.2	27.5	-	1.3	13.2	34.8
Rulindo	0.7	-	0.3	1.3	32.6	0.1	-	5.6	59.4
Gakenke	-	5.6	0.2	0.8	41.8	-	-	12.1	39.5
Musanze	0.6	9.0	6.4	2.8	36.4	0.0	0.4	41.0	3.3
Burera	5.4	5.0	2.7	6.7	55.4	0.2	0.5	20.9	3.2
Gicumbi	-	3.1	-	2.2	30.3	-	-	3.5	61.0
Rwamagana	14.3	-	-	2.7	8.1	-	18.9	10.6	45.4
Nyagatare	-	-	-	-	7.2	12.5	8.2	4.7	67.4
Gatsibo	1.4	5.5	-	1.7	36.3	16.1	2.0	0.2	36.9
Kayonza	0.3	2.0	-	-	3.8	17.6	6.5	45.3	24.6
Kirehe	0.8	5.3	-	1.4	17.7	8.7	8.3	33.8	24.1
Ngoma	-	1.8	-	-	10.1	-	-	59.2	29.0
Bugesera	0.3	-	-	2.0	2.0	2.8	6.6	2.3	84.2
National	**2.5**	**5.8**	**4.2**	**4.0**	**38.4**	**1.7**	**1.2**	**25.1**	**17.1**

Source: NISR, SAS 2023

Table 74: 2023 Season A_Percentage of plots by degree of erosion per district

District	Degree of erosion			
	Severe (Rill erosion, Gully erosion, Mass movement/Landslides)	Moderate (Diffuse overland flow erosion, overland flow erosion)	Low (Wind erosion)	Very Low (Splash erosion)
Nyarugenge	0.0	1.7	12.8	85.6
Gasabo	0.0	24.3	32.9	42.8
Kicukiro	0.4	0.0	4.3	95.4
Nyanza	1.0	45.5	17.8	35.7
Gisagara	0.2	5.1	35.9	58.9
Nyaruguru	1.1	22.1	43.0	33.9
Huye	2.3	12.7	62.5	22.5
Nyamagabe	2.3	12.3	53.5	31.9
Ruhango	2.7	14.9	43.2	39.1
Muhanga	2.2	8.4	16.5	72.8
Kamonyi	0.4	26.5	30.7	42.5
Karongi	1.2	33.1	43.0	22.7
Rutsiro	4.8	18.7	16.4	60.2
Rubavu	3.4	18.5	9.1	69.0
Nyabihu	2.9	20.3	55.1	21.7
Ngororero	3.5	32.6	42.1	21.9
Rusizi	2.7	13.6	43.5	40.2
Nyamasheke	1.5	14.5	14.6	69.4
Rulindo	0.3	12.6	33.0	54.1
Gakenke	2.1	11.9	50.9	35.1
Musanze	0.9	6.4	19.2	73.6
Burera	3.3	9.0	29.6	58.2
Gicumbi	1.4	43.4	35.8	19.4
Rwamagana	0.2	24.8	50.2	24.8
Nyagatare	0.5	9.5	16.8	73.2
Gatsibo	4.0	11.9	44.7	39.4
Kayonza	0.3	7.9	7.4	84.4
Kirehe	0.1	3.5	17.5	79.0
Ngoma	0.0	5.1	46.7	48.2
Bugesera	0.0	12.5	47.5	40.0
National	1.7	17.7	35.3	45.4

Source: NISR, SAS 2023

Table 75: 2023 Season B_Percentage of plots by degree of erosion per district

District	Degree of erosion			
	Severe (Rill erosion, Gully erosion, Mass movement/Landslides)	Moderate (Diffuse overland flow erosion, overland flow erosion)	Low (Wind erosion)	Very Low (Splash erosion)
Nyarugenge	0.3	12.4	21.9	65.4
Gasabo	0.5	19.0	28.5	52.0
Kicukiro	-	0.2	7.4	92.4
Nyanza	0.3	39.0	29.2	31.5
Gisagara	-	7.2	49.4	43.5
Nyaruguru	2.5	25.3	59.2	12.9
Huye	1.8	8.0	52.9	37.3
Nyamagabe	3.3	15.8	49.3	31.6
Ruhango	3.1	6.9	16.7	73.3
Muhanga	3.3	5.2	15.8	75.7
Kamonyi	0.5	8.8	54.8	35.9
Karongi	11.2	26.2	44.2	18.5
Rutsiro	11.4	21.4	32.5	34.7
Rubavu	11.7	23.6	13.7	51.0
Nyabihu	8.0	22.9	50.5	18.6
Ngororero	16.3	16.7	42.8	24.2
Rusizi	5.0	22.4	43.6	29.1
Nyamasheke	4.2	13.9	8.2	73.6
Rulindo	1.8	7.1	51.6	39.5
Gakenke	3.3	16.7	48.8	31.3
Musanze	6.5	6.8	16.2	70.5
Burera	12.6	8.0	52.4	27.0
Gicumbi	3.6	56.0	27.9	12.5
Rwamagana	-	2.4	58.2	39.5
Nyagatare	0.2	9.0	18.2	72.5
Gatsibo	0.7	4.1	67.5	27.7
Kayonza	0.6	5.5	4.4	89.5
Kirehe	0.1	1.5	15.4	83.1
Ngoma	0.1	2.6	48.4	48.9
Bugesera	-	8.9	40.8	50.3
National	4.1	15.3	38.5	42.1

Source: NISR, SAS 2023

Table 76: 2023 Season C_Percentage of plots by degree of erosion per district

District	Severe (Rill erosion, Gully erosion, Mass movement/Landslides)	Moderate (Diffuse overland flow erosion, overland flow erosion)	Low (wind erosion)	Very Low (splash erosion)
Nyarugenge	-	13.6	40.0	46.4
Gasabo	3.9	8.3	33.2	54.6
Kicukiro	-	53.7	-	46.3
Nyanza	-	27.1	31.3	41.6
Gisagara	-	11.9	40.3	47.9
Nyaruguru	-	14.6	57.3	28.2
Huye	-	6.5	34.8	58.7
Nyamagabe	1.1	9.2	16.5	73.3
Ruhango	6.1	4.6	31.6	57.8
Muhanga	2.8	58.3	27.6	11.3
Kamonyi	0.2	0.4	49.6	49.9
Karongi	0.9	13.7	1.8	83.5
Rutsiro	34.2	9.6	24.9	31.4
Rubavu	8.4	12.3	45.0	34.3
Nyabihu	2.6	16.5	61.8	19.1
Ngororero	1.2	20.5	14.8	63.4
Rusizi	0.5	0.4	52.6	46.5
Nyamasheke	0.7	4.5	35.4	59.4
Rulindo	0.4	10.4	24.2	65.0
Gakenke	0.4	15.3	12.6	71.8
Musanze	-	5.1	28.6	66.3
Burera	1.2	20.2	44.2	34.4
Gicumbi	-	1.6	51.2	47.2
Rwamagana	-	-	-	100.0
Nyagatare	8.6	-	25.2	66.3
Gatsibo	-	4.0	48.3	47.7
Kayonza	-	-	18.8	81.3
Kirehe	0.7	14.9	79.0	5.4
Ngoma	-	2.3	9.2	88.5
Bugesera	-	59.2	4.7	36.1
National	**1.8**	**14.9**	**36.4**	**47.0**

ANNEX

Annex 1: SAMPLING ERRORS

Table 77: Sampling Errors for major crops at the national level from SAS 2022/23 Season A data

Crop Name	Estimate	SE	CV	95% Confidence Interval		Design Effect	No. observations (plots)
				Lower	Upper		
Maize	226,982	5,594.7	0.025	216,007	237,957	0.088	8,387
Sorghum	38,979	3,394.1	0.087	32,321	45,637	1.058	720
Bean	312,279	7,033.3	0.023	298,482	326,076	1.680	7,776
Irish potato	55,613	3,464.1	0.062	48,818	62,408	2.262	1,775
Sweet potato	106,670	3,448.5	0.032	99,905	113,434	1.982	2,473
Taro	21,066	1,139.3	0.054	18,831	23,301	1.847	993
Soybean	29,778	1,557.7	0.052	26,723	32,834	0.167	1,322
Vegetables	16,758	1,119.4	0.067	14,562	18,954	0.590	755
Cooking banana	96,262	4,233.9	0.044	87,956	104,567	1.601	3,709
Dessert banana	37,009	1,635.7	0.044	33,801	40,218	1.374	3,664
Banana for beer	122,019	4,409.1	0.036	113,370	130,668	1.455	4,027
Cassava	239,221	5,942.4	0.025	227,564	250,878	1.370	5,641
Fruits	10,131	1,404.9	0.139	7,375	12,887	0.320	469

Table 78 : : Sampling Errors for major crops at the national level from SAS 2022/23 Season B data

Crop name	Estimate	SE	CV	95% Confidence Interval		DEFF	No. observations (plots)
				Lower	Upper		
Maize	93,927	3555.8	0.038	86,950	100,904	0.029	4,004
Sorghum	121,079	5134.8	0.042	111,003	131,154	1.489	2,649
Bean	309,489	7013.7	0.023	295,727	323,251	0.866	7,749
Irish potato	48,210	3315.7	0.069	41,704	54,716	0.778	1,429
Sweet potato	96,231	3020.8	0.031	90,304	102,159	2.197	3,111
Taro	16,015	862.6	0.054	14,322	17,707	1.355	840
Soybean	40,235	1939.7	0.048	36,429	44,041	0.028	1,571
Vegetables	19,164	1436.5	0.075	16,345	21,983	0.319	742
Cooking banana	87,735	3866.7	0.044	80,148	95,322	1.339	3,734
Dessert banana	54,000	2018.3	0.037	50,040	57,960	1.107	3,724
Banana for beer	116,359	4115.2	0.035	108,284	124,434	1.347	4,025
Cassava	159,089	4298.8	0.027	150,654	167,524	1.413	5,261
Fruits	10,507	1784.9	0.170	7,005	14,010	0.344	405

Table 79 : : Sampling Errors for major crops at the national level from SAS 2022/23 Season C data

3.1 Crop name	Estimate	SE	CV	95% Confidence Interval		DEFF	No. observations (plots)
				Lower	Upper		
Bush bean	3,476	238.9	0.069	3,005	3,946	0.004	744
Irish potato	10,540	1,081.6	0.103	8,410	12,670	1.288	947
Sweet potato	4,235	270.2	0.064	3,703	4,767	0.194	1,176
Soybean	759	171.5	0.226	422	1,097	0.067	133
Vegetables	5,131	413.2	0.081	4,318	5,945	0.234	2,797

Annex 2: STAFF WHO CONTRIBUTED TO THE SEASONAL AGRICULTURAL SURVEY 2023

National Coordinators

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

Technical coordination

- MWIZERWA Jean Claude, Director of Economic Statistics Department
- ABAYISENGA Aimable, Agriculture and Environmental Statistician Team Leader
- NIYITEGEKA Beata, GIS Team leader

Field work coordination

- KAMANZI SHINGIRO Jean Philbert, SAS Specialist
- MUKAMAZIMPAKA Francine, Perennial crops and horticulture statistician

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- MUVUNYI Issa, Livestock and fisheries production statistician
- RWAYITARE Jean Bosco, SAS Specialist
- MUREBWAYIRE Divine, SAS Specialist

GIS

- BIZIMUNGU Clément, Field operations Cartographer Officer
- KARERA Albert, Geometrician in charge of map design & production
- IRAMBONA Eddy Marcus, GIS Specialist
- MUNDERERE Theophile, GIS Specialist
- NDAZIGARUYE Alfred, GIS Support Staff
- NGABO MUHIRE Olympe, GIS Support Staff

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- RWAYITARE Jean Bosco, SAS Specialist