REPUBLIC OF RWANDA

NATIONAL INSTITUTE OF STATISTICS OF RWANDA
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Seasonal Agricultural Survey (SAS)–2015 Season A

I. Introduction

In 2015, the National Institute of Statistics of Rwanda (NISR) conducted Seasonal Agricultural Surveys (SAS) covering season Athat starts in September 2014 and ends with February 2015. This is a summary of key results and related tables about land use, crop land, agricultural inputs, agricultural practises and production. An annual comprehensive SAS Survey report will be published after covering all three agricultural seasons.

The sample is composed of two categories of respondents: Agricultural Operators[1] and Large Scale Farmers (LSF)[2].The sampling method used was a dual frame sampling design combining selected area frame sample[3] segments and a list of Large Scale Farmers.Coverage of 540 segments was spread throughout the country with 25,495 agricultural operators in Season A phase 1 from which 5,502 agricultural operators were selected during Second Phases. Furthermore, enumerated Large Scale Farmers in screening phase were 558in 2015 Season A, of which 199 Large Scale Farmers were selected during Second Phases.

II. Agricultural land

Using satellite imagery, the whole country was stratified into homogeneous strata according to crop intensity and other land-use characteristics as follows:

Stratum	Description	Total (Hectares)	Percent
1.1	Intensive agriculture land (Season A and B)	**1,479,081.4**	**81.9**
1.2	Intensive agriculture land (Season A and B, with potential for Season C)	**48,388.2**	**2.7**
2.1	Other marshlands	**95,820.7**	**5.3**
2.2	Marshlands potential for rice	**20,200.9**	**1.1**
3.0	Rangeland	**133,848.5**	**7.4**
10.0	Tea plantation	**28,763.1**	**1.6**
Total agriculture land		**1,806,102.9**	**100.0**

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[1] Agricultural operators: These are Small Scale Farmers within the Segments

[2] Large Scale Farmer: The person, institution or agricultural or livestock cooperatives, that satisfies the unit measurements defined by survey rules e.g. farmer growing crops on ten hectare of land or more or any farmer raising 70 or more cattle, 350 goats and sheep, 140 pigs, 1,500 chicken or managing 50 bee hives.

[3] Area frame sampling: A method in which an area to be sampled is sub-divided into smaller blocks that are then selected at random and then again sub-sampled or fully surveyed. This method is typically used when a complete frame of reference is not available to be used.

III. Farm characteristics (Area and Production)

Crop Land

In 2015 Season A, the main crops were Cassava (21.6% of the total cultivated area), Banana (23.0% of the total cultivated area), Beans (19.8% of the total cultivated area), and Maize (12.4% of the total cultivated area); other crops took 23.2% of the total cultivated area. Fallow land represented 20.4% in season A of the total arable land of Rwanda.

Crop Production

In 2015 Season A, the share of crop production by groups of crops in Rwanda was highest for Tubers and Roots (37.4%) followed by Banana (27.9%) and Cereals (10.5%). Other crop groups contributed as follows: Vegetables and Fruits (4.7%) and Legumes and Pulses (7.8%).

IV. Agricultural Inputs

Use of seeds and fertilizers

In 2015 Season A, 84.5% of agricultural operators used traditional seeds whereas 15.5% used improved seed. For LSF, the use of traditional seeds and improved seeds were 79.8% and 20.2% respectively.

For agricultural operators, the use of organic fertilizers and inorganic fertilizers were 51.3% and 21.1% for 2015 season A, respectively. On the other hand, for LSF, the use of organic fertilizers and inorganic fertilizers were 66.8% and 54.8% for 2015 season A, respectively.

Use of pesticides

In 2015 Season A, the percentage of agriculture operators who used pesticides is 9.1%.Among the Large Scale farmers, the percentage of those who used pesticides was 46.7%.

V. Agricultural practices

Irrigation practices

In 2015 season A, 1.1% of agriculture operators practised irrigation while 24.6% of Large Scale Farmers practised irrigation.

Anti-erosion activities

In 2015 season A, 41.3 % of all agriculture operators practised anti-erosion activities.Likewise, Large Scale Farmers who practised anti-erosion activities was 48.7 %.

Table 1. Share (%) of Area occupied by Strata within Districts by descending order

	District	Sratum '1.1	District	Sratum1.2	District	Sratum'2.1	District	Sratum 2.2	District	Sratum 3.0
1	Nyagatare	7.9%	Nyabihu	37.7%	Bugesera	23.3%	Gisagara	12.1%	Kayonza	37.0%
2	Bugesera	5.4%	Musanze	31.5%	Gisagara	8.8%	Rusizi	11.5%	Nyagatare	29.9%
3	Kayonza	5.2%	Rubavu	21.8%	Gatsibo	8.7%	Nyanza	11.5%	Gatsibo	22.0%
4	Ngoma	4.7%	Rutsiro	5.9%	Nyagatare	7.9%	Huye	11.2%	Ngororero	3.3%
5	Gatsibo	4.6%	Ngororero	3.1%	Ruhango	4.9%	Bugesera	11.0%	Rutsiro	2.9%
6	Kirehe	4.3%	Nyagatare	0.0%	Nyanza	4.9%	Nyagatare	7.4%	Kirehe	2.1%
7	Gicumbi	4.2%	Bugesera	0.0%	Nyaruguru	4.4%	Gatsibo	6.7%	Nyabihu	2.1%
8	Rwamagana	4.1%	Kayonza	0.0%	Kamonyi	4.2%	Kayonza	5.9%	Rubavu	0.7%
9	Karongi	4.0%	Ngoma	0.0%	Nyamagabe	3.6%	Rwamagana	5.0%	Gisagara	0.0%
10	Nyamagabe	3.8%	Gatsibo	0.0%	Kayonza	3.1%	Ngoma	4.5%	Rusizi	0.0%
11	Gakenke	3.8%	Kirehe	0.0%	Huye	3.1%	Nyamasheke	4.5%	Nyanza	0.0%
12	Kamonyi	3.6%	Gicumbi	0.0%	Rwamagana	3.1%	Muhanga	2.6%	Huye	0.0%
13	Nyanza	3.6%	Rwamagana	0.0%	Gasabo	3.0%	Ruhango	2.2%	Bugesera	0.0%
14	Ruhango	3.5%	Karongi	0.0%	Gakenke	2.7%	Gasabo	1.7%	Rwamagana	0.0%
15	Muhanga	3.4%	Nyamagabe	0.0%	Rulindo	2.0%	Kirehe	0.9%	Ngoma	0.0%
16	Gisagara	3.3%	Gakenke	0.0%	Gicumbi	1.7%	Gakenke	0.4%	Nyamasheke	0.0%
17	Ngororero	3.3%	Kamonyi	0.0%	Ngororero	1.4%	Kamonyi	0.3%	Muhanga	0.0%
18	Rutsiro	3.2%	Nyanza	0.0%	Rusizi	1.2%	Ngororero	0.3%	Ruhango	0.0%
19	Nyamasheke	3.2%	Ruhango	0.0%	Muhanga	1.2%	Nyamagabe	0.2%	Gasabo	0.0%
20	Nyaruguru	3.2%	Muhanga	0.0%	Karongi	1.2%	Karongi	0.1%	Gakenke	0.0%
21	Burera	3.0%	Gisagara	0.0%	Burera	1.1%	Rulindo	0.1%	Kamonyi	0.0%
22	Rulindo	2.8%	Nyamasheke	0.0%	Nyamasheke	1.0%	Nyabihu	0.0%	Nyamagabe	0.0%
23	Rusizi	2.8%	Nyaruguru	0.0%	Nyabihu	0.9%	Musanze	0.0%	Karongi	0.0%
24	Huye	2.7%	Burera	0.0%	Musanze	0.8%	Rubavu	0.0%	Rulindo	0.0%
25	Gasabo	1.8%	Rulindo	0.0%	Rutsiro	0.8%	Rutsiro	0.0%	Musanze	0.0%
26	Nyabihu	1.3%	Rusizi	0.0%	Kirehe	0.5%	Nyaruguru	0.0%	Nyaruguru	0.0%
27	Musanze	1.2%	Huye	0.0%	Kicukiro	0.2%	Gicumbi	0.0%	Gicumbi	0.0%
28	Rubavu	1.1%	Gasabo	0.0%	Nyarugenge	0.2%	Burera	0.0%	Burera	0.0%
29	Kicukiro	0.6%	Kicukiro	0.0%	Ngoma	0.1%	Kicukiro	0.0%	Kicukiro	0.0%
30	Nyarugenge	0.5%	Nyarugenge	0.0%	Rubavu	0.1%	Nyarugenge	0.0%	Nyarugenge	0.0%

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Table 2. Area (Ha) Cultivated by Crop and Group of Crops by Stratum (Hectares)

	Agricultural Operators					LSF		All Rwanda	
Crops / Strata	**1.1**	**1.2**	**2.1**	**2.2**	**3.0**	**S/Total_1**	**S/Total_2**	**Total**	**Percent**
Cereals	**152,285**	**8,206**	**18,156**	**5,736**	**10,453**	**194,836**	**10,324**	**205,160**	**15.0**
Maize	137,154	5,592	14,368	2,019	6,105	165,238	4,323	169,561	12.4
Sorghum	9,992	1,875	742	102	4,267	16,978	138	17,116	1.3
Paddy rice	921	-	2,964	3,612	-	7,497	5,780	13,277	1.0
Wheat	1,972	699	-	-	-	2,671	78	2,749	0.2
Other cereals	2,246	40	82	3	82	2,452	5	2,457	0.2
Tubers and Roots	**395,050**	**12,647**	**13,131**	**904**	**5,469**	**427,200**	**498**	**427,697**	**31.3**
Cassava	283,458	30	6,385	241	4,627	294,740	285	295,025	21.6
Sweet Potatoes	60,071	721	4,303	421	388	65,905	19	65,924	4.8
Irish Potatoes	36,278	11,863	752	51	391	49,336	194	49,529	3.6
Yams & Taro	15,242	33	1,690	190	63	17,219	0	17,219	1.3
Banana	**306,099**	**151**	**3,317**	**179**	**3,954**	**313,700**	**543**	**314,242**	**23.0**
Cooking Banana	107,648	17	1,158	84	2,961	111,867	364	112,231	8.2
Dessert banana	35,877	7	491	19	147	36,542	123	36,664	2.7
Banana for beer	162,573	127	1,668	77	846	165,291	57	165,347	12.1
Legumes & Pulses	**296,691**	**6,302**	**9,268**	**1,039**	**8,059**	**321,358**	**852**	**322,210**	**23.6**
Beans	***250,470***	***4,907***	***7,268***	***926***	***7,109***	***270,681***	***600***	***271,281***	***19.8***
Bush beans	161,897	16	6,857	866	7,044	176,681	543	177,224	13.0
Climbing beans	88,573	4,891	411	60	65	94,000	57	94,057	6.9
Peas	15,131	1,394	90	1	507	17,124	14	17,138	1.3
Groundnuts	11,869	-	351	10	391	12,622	13	12,635	0.9
Soya beans	19,183	-	1,559	101	51	20,894	224	21,118	1.5
Other legumes & Pulses	37	-	0	-	-	37	0	38	0.0
Vegetables and Fruits	**16,390**	**627**	**2,009**	**291**	**457**	**19,774**	**612**	**20,386**	**1.5**
Vegetables	9,110	267	1,955	256	111	11,699	52	11,750	0.9
Fruits	7,280	360	54	35	347	8,075	561	8,636	0.6
Other crops	**67,513**	**3,639**	**3,309**	**379**	**2,472**	**77,312**	**1,152**	**78,464**	**5.7**
Total developped crop land	**1,234,027**	**31,570**	**49,190**	**8,527**	**30,864**	**1,354,179**	**13,981**	**1,368,160**	**100**
Total Physical crop land	**932,474**	**31,228**	**42,811**	**7,888**	**19,471**	**1,033,872**	**13,322**	**1,047,194**	**100**
Fallow land	**187,755**	**4,612**	**14,869**	**2,468**	**2,073**	**211,777**	**2,338**	**214,115**	**20.4**

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Table 3. Crops Yield by Stratum (Kg/Ha)

Crops	Strata					
	1.1	1.2	2.1	2.2	3.0	All Rwanda
Maize	1,615	1,231	2,543	1,879	1,729	1,742
Paddy rice	-	-	2,582	2,843	-	2,914
Sorghum	2,008	2,025	860	3,765	1,404	1,820
Wheat	890	1,299	-	-	-	1,009
Other cereals	832	362	225	-	1,057	809
Cassava	1,351	-	1,604	4,830	1,719	1,364
Sweet Potatoes	7,462	12,483	9,228	9,008	4,975	7,626
Irish Potatoes	5,263	11,631	4,679	1,853	1,467	6,772
Yams & Taro	4,491	-	4,774	8,641	6,380	4,563
Cooking Banana	3,396	-	467	-	3,975	3,373
Dessert banana	2,692	-	-	-	2,352	2,645
Banana for beer	3,056	-	2,040	-	9,659	3,075
Beans	908	933	860	827	804	904
Bush beans	829	-	832	792	796	828
Climbing beans	1,051	936	1,329	1,332	1,619	1,047
Peas	755	617	581	645	249	728
Groundnuts	473	-	397	-	412	468
Soya beans	563	-	483	467	410	565
Vegetables	11,804	2,776	7,923	8,524	6,758	11,028
Fruits	4,622	916	41	-	4,157	4,118

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Table 4. Production of Main Crops (MT)

	Agricultural Operators						LSF	All Rwanda	
Crops / Strata	1.1	1.2	2.1	2.2	3.0	S/Total_1	S/Total_2	Total	Percent
Cereals	**245,215**	**11,601**	**44,850**	**14,448**	**16,635**	**332,750**	**37,216.0**	**369,966**	**10.5**
Maize	221,529	6,882	36,541	3,794	10,557	279,302	16,062.2	295,365	8.4
Paddy rice	-	-	7,653	10,269	-	17,922	20,772.8	38,695	1.1
Sorghum	20,062	3,798	638	384	5,992	30,875	271.5	31,147	0.9
Wheat	1,755	908	-	-	-	2,663	109.1	2,772	0.1
Other cereals	1,869	14	18	-	86	1,988	0.4	1,988	0.1
Tubers and Roots	**1,090,443**	**146,980**	**61,543**	**6,697**	**10,859**	**1,316,522**	**2,586.6**	**1,319,108**	**37.4**
Cassava	382,835	-	10,244	1,162	7,951	402,192	243.8	402,436	11.4
Sweet Potatoes	448,232	8,997	39,711	3,794	1,933	502,666	43.3	502,709	14.3
Irish Potatoes	190,924	137,983	3,519	95	573	333,094	2,299.5	335,394	9.5
Yams & Taro	68,452	-	8,070	1,646	402	78,570	-	78,570	2.2
Banana	**958,986**	**-**	**3,943**	**-**	**20,286**	**983,215**	**774.1**	**983,989**	**27.9**
Cooking Banana	365,597	-	540	-	11,770	377,908	591.0	378,499	10.7
Dessert banana	96,598	-	-	-	346	96,944	37.8	96,981	2.7
Banana for beer	496,791	-	3,403	-	8,170	508,364	145.3	508,509	14.4
Legumes & Pulses	**255,158**	**5,438**	**7,193**	**814**	**6,022**	**274,624**	**874.2**	**275,498**	**7.8**
Beans	227,313	4,577	6,248	766	5,713	244,618	561.7	245,179	7.0
Bush beans	134,216	-	5,702	686	5,607	146,211	471.2	146,682	4.2
Climbing beans	93,098	4,577	546	80	106	98,407	90.5	98,497	2.8
Peas	11,430	860	52	1	126	12,470	4.9	12,474	0.4
Groundnuts	5,611	-	139	-	161	5,911	7.6	5,919	0.2
Soya beans	10,804	-	753	47	21	11,625	299.9	11,925	0.3
Vegetables and Fruits	**141,188**	**1,071**	**15,488**	**2,180**	**2,188**	**162,116**	**3,027.9**	**165,144**	**4.7**
Vegetables	107,538	742	15,486	2,180	748	126,693	2,882.2	129,576	3.7
Fruits	33,650	329	2	-	1,441	35,422	145.7	35,568	1.0
Other crops	**364,365**	**1,553**	**35,730**	**1,232**	**58**	**402,937**	9,975.1	**412,912**	11.7
All Rwanda	**3,055,354**	**166,644**	**168,747**	**25,371**	**56,048**	**3,472,163**	**54,454**	**3,526,617**	**100**

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Table 5. Selected Segments by Strata for SAS 2014

Stratum	Area (Km2)	Number of Sampled Segments
1.1	14,791	340
1.2	484	48
2.1	958	64
2.2	202	40
3.0	1,338	48
All Rwanda		540

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Table 6 : Agricultural Operators and LSF by Stratum

	Strata	Total	
		Number	%
Agricultural Operators	1.1	3,665	66.6
	1.2	530	9.6
	2.1	646	11.7
	2.2	367	6.7
	3.0	294	5.3
	All Rwanda	5,502	100
LSF		199	100

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Table 7. Agricultural Operators by type (%)

	Strata	Individual		Cooperative		Total	
		Number	%	Number	%	Number	%
Agricultural Operators	**1.1**	3,651	100	14	0.4	3,665	100
	1.2	529	100	1	0.2	530	100
	2.1	637	98.6	9	1.4	646	100
	2.2	367	100.0	0	0.0	367	100
	3.0	293	100	1	0.3	294	100
	All Rwanda	5,477	99.5	25	0.5	5,502	100
LSF						199	100

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Table 8. Cooperative Membership

		Yes	No	Total
	Strata	Percent	Percent	Percent
Agricultural Operators	1.1	16.5	83.5	100
	1.2	11.1	88.9	100
	2.1	35.3	64.7	100
	2.2	61.6	38.4	100
	3.0	14.3	85.7	100
	All Rwanda	16.8	83.2	100
LSF		63.3	36.7	100

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Table 9. Agricultural Operators by Residency (%)

	Agricultural Operators		
Strata	Resident	Non resident	Total
1.1	26.9	73.1	100
1.2	25.1	74.9	100
2.1	4.6	95.4	100
2.2	0.9	99.1	100
3.0	96.8	3.2	100
All Rwanda	23.6	76.4	100

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Table 10. Percentage of Agricultural Operators by Gender and Stratum

	Agricultural Operators		
Strata	Male	Female	Total
1.1	68.9	31.1	100
1.2	65.8	34.2	100
2.1	68.0	32.0	100
2.2	63.5	36.5	100
3.0	78.8	21.2	100
All Rwanda	68.9	31.1	100

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Table 11. Age Distribution of Agricultural Operators

	Agricultural Operators				
Strata	14-24	25-34	35-44	45-54	55 and Above
1.1	5.4	24.3	22.4	21.2	26.8
1.2	6.4	27.6	25.7	17.8	22.5
2.1	2.2	20.1	24.5	22.3	30.9
2.2	5.2	24.0	27.8	20.7	22.3
3.0	4.4	28.3	24.9	19.8	22.5
All Rwanda	5.4	24.2	22.4	21.2	26.8

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Table 12. Age Distribution of Male Agricultural Operators

	Agricultural Operators				
Strata	14-24	25-34	35-44	45-54	55 and Above
1.1	5.0	27.7	24.3	20.8	22.3
1.2	6.6	34.5	26.7	15.2	17.0
2.1	2.1	23.1	26.3	22.9	25.6
2.2	4.3	26.2	27.0	21.0	21.5
3.0	4.8	28.1	26.4	17.7	22.9
All Rwanda	5.0	27.7	24.3	20.8	22.3

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Table 13. Age Distribution of Female Agricultural Operators

	Agricultural Operators				
Strata	14-24	25-34	35-44	45-54	55 and Above
1.1	6.3	16.6	18.1	22.2	36.7
1.2	6.1	14.4	23.8	22.7	33.1
2.1	2.5	13.7	20.6	21.1	42.2
2.2	6.7	20.1	29.1	20.1	23.9
3.0	3.2	29.0	19.4	27.4	21.0
All Rwanda	6.3	16.6	18.2	22.2	36.7

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Table 14. Education Level of Agricultural Operators by Stratum (%)

	Agricultural Operators				
Strata	**Primary**	**Secondary**	**Tertiary**	**No education**	**Total**
1.1	67.1	5.1	0.8	27.0	100
1.2	56.1	11.5	1.9	30.4	100
2.1	66.9	6.3	1.4	25.4	100
2.2	73.3	5.7	0.0	21.0	100
3.0	71.0	3.4	0.3	25.3	100
All Rwanda	67.1	5.2	0.8	27.0	100

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Table 15. Education level of Male Agricultural Operators (%)

	Agricultural Operators				
Strata	**Primary**	**Secondary**	**Tertiary**	**No education**	**Total**
1.1	73.0	5.7	1.0	20.3	100
1.2	66.1	12.4	2.9	18.7	100
2.1	71.4	6.5	0.9	21.2	100
2.2	76.8	5.6	0.0	17.6	100
3.0	75.3	3.5	0.4	20.8	100
All Rwanda	72.9	5.7	0.0	20.3	100

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Table 16. Education Level of Female Agricultural Operators (%)

	Agricultural Operators				
Strata	**Primary**	**Secondary**	**Tertiary**	**No education**	**Total**
1.1	54.0	3.8	0.2	42.0	100
1.2	37.0	9.9	0.0	53.0	100
2.1	57.4	5.9	2.5	34.3	100
2.2	67.2	6.0	0.0	26.9	100
3.0	54.8	3.2	0.0	41.9	100
All Rwanda	54.0	3.9	0.2	41.9	100

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Table 17. Average Size of Tract by Stratum

Strata	Average (Ha)
1.1	0.22
1.2	0.17
2.1	0.16
2.2	0.13
3.0	2.34
Total	0.23

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Table 18. Share of Pure and Mixed Crop Agricultural Land (%)

	Strata	Pure Crop Land	Mixed Crop Land	Total
Agricultural Operators	**1.1**	19.1	80.9	100
	1.2	42.1	57.9	100
	2.1	43.7	56.3	100
	2.2	74.2	25.8	100
	3.0	24.0	76.0	100
	All Rwanda	21.0	79.0	100
LSF		84.5	15.5	100

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Table 19. Users of Organic Fertilizers (%)

	Strata	Used organic fertilizers
Agricultural Operators	**1.1**	51.3
	1.2	46.2
	2.1	60.8
	2.2	25.1
	3.0	13.9
	All Rwanda	51.3
LSF		66.8

2015 Seasonal Agriculture Survey - Season A

Table 20. Use of Inorganic Fertilizer (%)

	Strata	Used inorganic fertilizers
Agricultural Operators	1.1	20.6
	1.2	43.4
	2.1	43.2
	2.2	62.9
	3.0	4.8
	All Rwanda	21.1
LSF		54.8

2015 Seasonal Agriculture Survey - Season A

Table 21. Users of Inorganic Fertilizers by Type and by Stratum (%)

	Strata	NPK	UREA	UREA (LIQUID)	DAP	OTHER Fertilizers	Total
Agricultural Operators	1.1	19.4	38.0	0.5	42.0	0.1	100
	1.2	79.5	4.5	7.6	8.3	-	100
	2.1	10.1	49.6	1.0	39.3	-	100
	2.2	41.2	45.1	0.5	13.2	-	100
	3.0	11.8	35.3	5.9	47.1	-	100
	All Rwanda	19.8	38.1	0.6	41.4	0.1	100
LSF		27.4	38.8	0.3	28.6	4.9	100

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Table 22. Agricultural Operators by Type of Seeds Used (%)

	Strata	Traditional seeds	Improved seeds
Agricultural Operators	1.1	84.7	15.3
	1.2	94.6	5.4
	2.1	67.6	32.4
	2.2	75.3	24.7
	3.0	93.2	6.8
	All Rwanda	84.5	15.5
LSF		79.8	20.2

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Table 23. Agricultural Operators and Large Scale Farmers Practising Irrigation (%)

	Strata	Practised Irrigation
Agricultural Operators	**1.1**	0.8
	1.2	-
	2.1	15.5
	2.2	60.2
	3.0	1.4
	All Rwanda	1.1
LSF		24.6

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Table 24. Agricultural Operators and LSF by Type of Irrigation Practised (%)

	Strata	Pumps/tube wells/irrigation machines	Watering can	Water channels	Others	Total
	1.1	-	83.3	6.7	10.0	100
	1.2	0.9	26.9	55.6	16.7	100
	2.1	-	10.4	88.7	0.9	100
	2.2	-	100.0	-	-	100
	3.0	-	8.6	-	91.4	100
	All Rwanda	0.1	51.4	40.9	7.6	100
LSF		24.0	12.0	64.0		100

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Table 25. Anti-erosive Activities by Agricultural Operators and Large Scale Farmers (%)

	Strata	Practised Anti-erosion
Agricultural Operators	1.1	40.7
	1.2	57.6
	2.1	60.7
	2.2	66.6
	3.0	8.4
	All Rwanda	41.3
LSF		59.2

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Table 26. Anti-erosive Activities by Agricultural Operators and LSF (%)

	Strata	Ditches	Trees	Radical Terracing	Progressive terracing	Grasses	Water drainage	Mulching	Beds	Other	Total
Agricultural Operators	**1.1**	5.3	3.0	4.9	12.9	69.1	1.3	1.0	1.9	0.6	100
	1.2	6.9	1.6	1.3	5.6	21.5	0.0	0.0	62.8	0.3	100
	2.1	2.0	1.2	0.1	0.8	23.1	56.8	0.5	15.3	0.1	100
	2.2	0.2	0.0	4.3	0.3	8.9	77.3	0.1	4.8	4.1	100
	3.0	12.4	15.7	-	-	45.0	9.9	10.7	5.8	0.4	100
	All Rwanda	5.2	2.9	4.8	12.6	68.0	2.4	1.0	2.4	0.6	100
LSF		23.0	5.4	7.9	5.2	30.7	15.0	8.1	4.6		100

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Table 27. Agricultural Operators and LSF using Pesticide (%)

	Strata	Used Pesticides
Agricultural Operators	1.1	8.9
	1.2	44.7
	2.1	16.3
	2.2	49.6
	3.0	1.7
	Rwanda	9.1
LSF		46.7

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Table 28.Type of Pesticide used by Agricultural operators and LSF

	Strate	DITHANE	RIDOMIL	DIMETHOATE	CYPERMETRINE	DURSIBAN	TILT	OTHER PESTICIDE	Total
Agricultural Operators	11	35.8	7.4	14.6	34.4	1.4		5.5	100
	12	43.8	30.5	12.0	13.5	-		0.2	100
	21	7.9	1.4	5.0	64.3	1.4		19.3	100
	22	0.9	-	23.6	53.6	-		21.9	100
	30	25.0	-	37.5	12.5	12.5		12.5	100
	All Rwanda	35.4	8.3	14.4	34.7	1.4		5.8	100
LSF		14.4	7.7	8.8	33.7	1.1	0.6	33.7	100

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Table 29. Use of Production by Agricultural Operators (%)

	Sold	Stored	Autoconsumption	Used as wage for hired labour	Used as Farm rent	Offered as Gift to Other	Exchanged with other things	Used as seeds	Used as fodder	Damaged	Used in any other way	Total
Maize	16.8	.2	74.4	.4	.1	3.7	.1	3.7	.2	.1	.2	100
Paddy rice	63.6	.4	26.8	1.3	1.4	2.6	.2	3.3	.0	.4	.0	100
Sorghum	46.9	1.0	42.9	.5	.0	3.3	.6	4.8	.1	.0	.0	100
Wheat	20.9	.0	60.4	.0	.0	3.2	.0	15.5	.0	.0	.0	100
Other cereals	50.0	.0	30.0	.0	.0	10.0	.0	10.0	.0	.0	.0	100
Bush beans	10.7	.3	73.8	.5	.1	1.9	.3	12.2	.0	.0	.1	100
Climbing beans	9.1	.3	73.6	.3	.2	3.2	.2	13.1	.0	.0	.0	100
Peas	9.3	.0	76.6	.0	.0	1.2	.0	12.6	.0	.3	.0	100
Cassava	19.3	.2	76.3	.6	.1	2.9	.1	.0	.1	.1	.2	100
Irish potatoes	19.1	.0	67.2	.4	.0	2.9	.1	9.8	.0	.3	.2	100
Sweet potatoes	13.1	.0	81.7	1.2	.1	3.5	.1	.0	.4	.0	.0	100
Tomotoes	65.1	.0	29.1	.1	.0	3.6	.0	.0	.0	2.0	.0	100
White cabbage	42.7	.0	48.5	.0	.0	8.2	.0	.0	.0	.6	.0	100
Onions	60.6	.0	38.3	.0	.0	1.2	.0	.0	.0	.0	.0	100
Carrots	17.5	.0	80.6	.0	.0	1.9	.0	.0	.0	.0	.0	100
Eggplant	46.7	.0	45.6	.1	.0	6.9	.0	.1	.0	.5	.1	100
Cooking Bananas	17.0	.0	79.6	.3	.0	2.4	.0	.0	.0	.1	.7	100
Dessert banana	56.2	.0	41.3	.0	.0	1.2	.0	.0	.0	.0	1.3	100
Banana for beer	63.1	.0	32.6	.0	.0	3.4	.0	.0	.0	.2	.7	100
Pineapple	33.9	.0	57.5	.1	.0	6.7	.0	.0	.0	.8	1.0	100
Avocado	58.9	.0	34.1	2.7	.0	4.4	.0	.0	.0	.0	.0	100
Passion fruits	72.2	.0	1.2	.0	.0	1.0	.0	.0	.0	25.6	.0	100
Soya beans	9.9	.2	71.3	.3	.0	1.3	.3	16.8	.0	.0	.0	100
Ground nuts	16.6	.3	56.7	.3	.0	1.9	.1	24.0	.0	.0	.0	100
sun flower	5.7	.0	85.9	.4	.0	1.8	.6	5.8	.0	.0	.0	100
coffee	99.8	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	100
Pyrethrum	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Black eggplants	70.0	.0	30.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Sweet pepper	77.6	.0	18.9	.0	.0	2.3	.0	1.3	.0	.0	.0	100
Pepper	98.0	.0	1.5	.0	.0	.5	.0	.0	.0	.0	.0	100
Amaranths	24.3	.0	67.5	.0	.0	8.3	.0	.0	.0	.0	.0	100
Celery	90.0	.0	5.0	.0	.0	5.0	.0	.0	.0	.0	.0	100
Spinach	.0	.0	100.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Small red beans	13.3	.0	73.3	.0	.0	.0	.0	13.3	.0	.0	.0	100
Sugar beet	53.1	.0	36.1	.0	.0	10.8	.0	.0	.0	.0	.0	100
Garlic	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Leeks	30.4	3.6	63.0	.0	.0	3.0	.0	.0	.0	.0	.0	100
French beans	78.7	.0	18.3	.0	.0	3.0	.0	.0	.0	.0	.0	100
Lettuce	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Napia grass	.0	.0	.0	.0	.0	.0	.0	.0	5.0	.0	95.0	100
Sugar cane	34.1	.0	58.6	.0	.0	7.2	.0	.0	.0	.0	.0	100
Fodder crop	10.4	.0	.0	.5	.0	1.4	.8	1.8	84.9	.0	.1	100
Macadamia	.0	.0	.0	.0	.0	70.0	.0	.0	.0	.0	30.0	100
Mango	25.9	.0	57.4	.0	.0	12.8	.2	.0	.0	.0	3.7	100
Papaya	70.0	.0	20.0	.0	.0	10.0	.0	.0	.0	.0	.0	100
Tree tomato	68.0	.0	20.7	.0	.0	2.2	.0	.0	.0	5.5	3.6	100
Orange	.0	.0	50.0	.0	.0	50.0	.0	.0	.0	.0	.0	100
Lemon	37.0	.0	26.1	.0	.0	37.0	.0	.0	.0	.0	.0	100
Guava	59.0	.0	41.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Millet	16.5	1.4	59.9	2.5	.0	2.5	5.8	11.3	.0	.0	.0	100
Pumpkins	10.5	.0	77.1	.0	.0	9.8	.0	.5	.0	1.1	1.0	100
Cucumber	99.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Taro	13.9	.0	81.3	.9	.0	3.1	.0	.3	.0	.0	.5	100
Yams	33.4	.0	61.1	.0	.0	2.4	.0	3.2	.0	.0	.0	100
Other annual vegetables	25.0	.0	65.0	.0	.0	10.0	.0	.0	.0	.0	.0	100
Other perennial vegetables	.0	.0	100.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Other seasonal crops	.0	.0	100.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Other annual crops	76.7	.0	1.1	.0	.0	.0	.0	.0	.0	.0	22.2	100
Other perennial crops	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100

Table 30. Use of Production by Large Scale Farmer (%)

	Sold	Stored	Autoconsumption	Used as wage for hired labour	Used as Farm rent	Offered as Gift to Other	Exchanged with other things	Used as seeds	Used as fodder	Damaged	Used in any other way	Total
Maize	64.4	.0	22.7	1.3	.0	1.6	.0	5.1	4.5	.1	.3	100
Paddy rice	84.5	.0	14.1	.9	.0	.0	.0	.4	.0	.1	.0	100
Sorghum	88.6	.0	8.1	.0	.0	.0	.0	3.3	.0	.0	.0	100
Wheat	79.0	.0	15.9	.0	.0	.8	.0	4.3	.0	.0	.0	100
Bush beans	49.3	.3	37.1	1.0	.3	1.0	.0	10.7	.0	.1	.1	100
Climbing beans	58.6	.8	22.8	.0	.0	.5	.0	17.4	.0	.0	.0	100
Peas	55.8	.0	27.9	.0	.0	2.5	1.4	12.3	.0	.0	.0	100
Cassava	37.8	.0	47.6	9.1	.0	.2	.0	.0	5.3	.0	.0	100
Irish potatoes	54.0	.3	37.8	.7	.0	1.0	.0	4.9	.0	.4	.9	100
Sweet potatoes	34.2	.0	52.0	5.4	.0	1.5	.0	.0	6.9	.0	.0	100
Tomotoes	71.7	.0	28.3	.0	.0	.0	.0	.0	.0	.0	.0	100
White cabbage	55.9	.0	40.9	.0	.0	.9	.0	.0	.0	2.3	.0	100
Flower cabage	.0	.0	.0	.0	.0	.0	.0	.0	.0	100.0	.0	100
Onions	82.9	.0	17.1	.0	.0	.0	.0	.0	.0	.0	.0	100
Carrots	95.0	.0	.0	.0	.0	5.0	.0	.0	.0	.0	.0	100
Eggplant	82.1	.0	15.7	.0	.0	2.1	.0	.0	.0	.0	.0	100
Cooking Bananas	44.2	.0	53.3	.5	.0	1.4	.0	.0	.0	.7	.0	100
Dessert banana	80.9	.0	16.2	.0	.0	.2	.0	.0	.0	2.7	.0	100
Banana for beer	82.1	.0	9.7	.0	.0	2.9	.0	.0	.0	5.3	.0	100
Pineapple	87.9	.0	6.4	.0	.0	5.7	.0	.0	.0	.0	.0	100
Avocado	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Other fruits	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Soya beans	55.2	5.9	13.1	.0	.0	.0	.0	14.3	11.6	.0	.0	100
Ground nuts	29.5	.0	48.0	.9	.0	5.1	.6	15.8	.0	.0	.0	100
sun flower	.0	.0	.0	.0	.0	.0	.0	100.0	.0	.0	.0	100
coffee	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Pyrethrum	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Black eggplants	70.0	.0	30.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Sweet pepper	77.6	.0	18.9	.0	.0	2.3	.0	1.3	.0	.0	.0	100
Pepper	98.0	.0	1.5	.0	.0	.5	.0	.0	.0	.0	.0	100
Amaranths	24.3	.0	67.5	.0	.0	8.3	.0	.0	.0	.0	.0	100
Celery	90.0	.0	5.0	.0	.0	5.0	.0	.0	.0	.0	.0	100
Spinach	.0	.0	100.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Small red beans	13.3	.0	73.3	.0	.0	.0	.0	13.3	.0	.0	.0	100
Sugar beet	53.1	.0	36.1	.0	.0	10.8	.0	.0	.0	.0	.0	100
Garlic	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Leeks	30.4	3.6	63.0	.0	.0	3.0	.0	.0	.0	.0	.0	100
French beans	78.7	.0	18.3	.0	.0	3.0	.0	.0	.0	.0	.0	100
Lettuce	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Napia grass	.0	.0	.0	.0	.0	.0	.0	.0	5.0	.0	95.0	100
Sugar cane	34.1	.0	58.6	.0	.0	7.2	.0	.0	.0	.0	.0	100
Fodder crop	10.4	.0	.0	.5	.0	1.4	.8	1.8	84.9	.0	.1	100
Macadamia	.0	.0	.0	.0	.0	70.0	.0	.0	.0	.0	30.0	100
Mango	25.9	.0	57.4	.0	.0	12.8	.2	.0	.0	.0	3.7	100
Papaya	70.0	.0	20.0	.0	.0	10.0	.0	.0	.0	.0	.0	100
Tree tomato	68.0	.0	20.7	.0	.0	2.2	.0	.0	.0	5.5	3.6	100
Orange	.0	.0	50.0	.0	.0	50.0	.0	.0	.0	.0	.0	100
Lemon	37.0	.0	26.1	.0	.0	37.0	.0	.0	.0	.0	.0	100
Guava	59.0	.0	41.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Millet	16.5	1.4	59.9	2.5	.0	2.5	5.8	11.3	.0	.0	.0	100
Pumpkins	10.5	.0	77.1	.0	.0	9.8	.0	.5	.0	1.1	1.0	100
Cucumber	99.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Taro	13.9	.0	81.3	.9	.0	3.1	.0	.3	.0	.0	.5	100
Yams	33.4	.0	61.1	.0	.0	2.4	.0	3.2	.0	.0	.0	100
Other annual vegetables	25.0	.0	65.0	.0	.0	10.0	.0	.0	.0	.0	.0	100
Other perennial vegetables	.0	.0	100.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Other seasonal crops	.0	.0	100.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Other annual crops	76.7	.0	1.1	.0	.0	.0	.0	.0	.0	.0	22.2	100
Other perennial crops	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100