REPUBLIC OF RWANDA

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Seasonal Agricultural Survey (SAS)–2016 Season A

I. Introduction

The National Institute of Statistics of Rwanda (NISR) has carried out the Seasonal Agricultural Survey (SAS) 2016 Season A from September 2015 to February 2016. This is the preliminary report highlighting the key results obtained from the survey related to farm characteristics (crop area under cultivation, production and yield), agricultural inputs (seeds, fertilizers and pesticides), agricultural practices (irrigation and anti erosion activities), and the use of production. An annual comprehensive SAS Survey report is to be published after covering all the three agricultural seasons.

The sample was 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 25,346 Agricultural operators in Season A phase 1 from which 5,089 agricultural operators were selected during Phase 2 of the Season A. Furthermore, enumerated Large Scale Farmers in screening phase were 744 in 2016 Season A, of which 195 Large Scale Farmers were selected during Second Phase.

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:

[1] Agricultural operators: These are Agricultural operators 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.

Table 1. Land-Use Strata Codes, Definitions and Area

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	**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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III. Farm characteristics

Crop Land

The main crops grown in 2016 Season A were: Banana (23% of the total cultivated area), Cassava (21% of the total cultivated area), Beans (20% of the total cultivated area), and Maize (12% of the total cultivated area); other crops took 24% of the total cultivated area. Fallow land represented 15 % of the total arable land of Rwanda.

Crop Production

In 2016 Season A, the share of crop production by groups of crops in Rwanda was highest for Tubers and Roots (37%) followed by Banana (28%) and Cereals (11%). Other crop groups contributed as follows: Legumes and Pulses (8%) and Vegetables and Fruits (5%).

IV. Agricultural Inputs

Use of seeds

In 2016 Season A, 74.6% of Agricultural operators used traditional seeds while 25.4% of them used improved seed. For LSF, 30.5% used traditional seeds whereas 69.5% used improved seeds.

Use of fertilizers

For Agricultural operators, 71.3% used organic fertilizers while inorganic fertilizers were used by 32.1% of Agricultural operators. For LSF, the use of organic fertilizers and inorganic fertilizers was 82.3% and 74.5% respectively.

Use of pesticides

The percentage of agricultural operators who used pesticides is 16.1% for Agricultural operators and 62.6% for Large Scale Farmers.

V. Agricultural practices

Irrigation practices

In 2016 season A, 1.6% of Agricultural operators practised irrigation while 8.2% of LSF practised irrigation.

Anti-erosion activities

In 2016 season A, 70.5 % of all Agricultural operators practised anti-erosion activities. On the hand, the LSF who practised anti-erosion activities were 44.0 % of all LSF interviewed.

ANNEX
MAIN TABLES

Table 2. Share (%) of Area occupied by Strata within Districts by descending order

	District	Sratum '1.1	District	Sratum 1.2	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	Rw amagana	4.1%	Kayonza	0.0%	Kamonyi	4.2%	Kayonza	5.9%	Rubavu	0.7%
9	Karongi	4.0%	Ngoma	0.0%	Nyamagabe	3.6%	Rw amagana	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%	Rw amagana	3.1%	Muhanga	2.6%	Huye	0.0%
13	Nyanza	3.6%	Rw amagana	0.0%	Gasabo	3.0%	Ruhango	2.2%	Bugesera	0.0%
14	Ruhango	3.5%	Karongi	0.0%	Gakenke	2.7%	Gasabo	1.7%	Rw amagana	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%	Nyamashek	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 3. Area (Ha) Cultivated by Crop and Group of Crops by Stratum (Hectares)

Crop name	Strata								
	11	12	21	22	30	S/Total	LSF/Total	All Rwanda	Percent
Cereals	**142,069**	**12,768**	**21,329**	**5,727**	**23,808**	**205,701**	**19,519**	**230,806**	**17%**
Maize	132,874	8,566	18,532	2,620	3,813	166,405	4,410	170,815	12%
Sorghum	6,662	931	2,127	1,826	19,906	31,452	311	35,928	3%
Paddy rice	391	8	647	1,279		2,325	14,717	17,042	1%
Wheat	387	3,255				3,642	73	5,137	0%
Other cereals	1,756	8	23	1	89	1,877	8	1,885	0%
Tubers & Roots	**393,744**	**12,647**	**11,929**	**779**	**5,150**	**424,249**	**570**	**424,818**	**31%**
Cassava	277,591	50	5,527	221	4,442	287,832	217	288,049	21%
Sweet Potatoes	60,228	977	3,387	269	71	64,933	112	65,044	5%
Irish Potatoes	40,572	11,604	912	99	624	53,810	241	54,051	4%
Yams & Taro	15,353	16	2,102	191	12	17,674		17,674	1%
Banana	**314,705**	**141**	**3,242**	**181**	**3,316**	**321,584**	**424**	**322,009**	**23%**
Cooking Banana	110,239	29	1,125	71	2,666	114,131	321	114,452	8%
Dessert banana	34,696	27	527	37	304	35,591	56	35,647	3%
Banana for beer	169,770	85	1,590	73	346	171,863	47	171,910	12%
Legumes & Pulses	**294,325**	**7,540**	**9,404**	**833**	**8,557**	**320,661**	**2,656**	**323,316**	**23%**
Beans	**250,088**	**6,059**	**7,547**	**689**	**8,070**	**272,453**	**2,115**	**274,568**	20%
Bush beans	164,037	32	6,869	655	8,005	179,598	2,058	181,656	13%
Climbing beans	86,051	6,027	679	33	65	92,856	56	92,912	7%
Peas	14,284	1,481	71	3	155	15,994	18	16,012	1%
Groundnuts	11,276		157	24	260	11,716	206	11,922	1%
Soya beans	18,678		1,629	118	73	20,498	317	20,815	1%
Vegetables &Fruits	**19,387**	**1,069**	**2,563**	**369**	**133**	**23,521**	**589**	**24,109**	**2%**
Vegetables	11,991	750	2,453	332	127	15,653	159	15,811	1%
Fruits	7,396	318	109	37	6	7,868	430	8,298	1%
Other crops	52,960	3,161	3,820	353	1,357	**61,650**	1,150	**62,801**	**5%**
Total Developped Crop Land	1,217,190	37,326	52,286	8,243	42,320	1,357,366	24,908	**1,387,860**	100%
Total Physical Crop Land	1,100,362	37,145	49,960	6,714	28,966	1,223,147	24,652	**1,247,799**	
Fallow	167,635	2,929	13,059	2,065	4,283	189,971	1,378	**191,349**	15%

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Table 4. Crops Yield by Stratum (Kg/Ha)

	Stratum					
	11	12	21	22	30	All Rwanda
Crops						
Maize	1750.41	818.50	1843.47	1897.26	2584.00	1,758
Sorghum	1144.20	983.42	1154.41	1721.81	1364.28	1,323
Paddy rice	148.57		1716.70	599.02		2,901
Wheat	328.18	901.55				850
Other cereals	593.07		580.13	1344.10	470.29	584
Cassava	1414.61		1029.84		1562.23	1,409
Sweet Potatoes	7636.70	4534.25	10328.22	8286.67	16419.98	7,745
Irish Potatoes	5145.91	13223.35	2676.46	4721.54	3705.02	6,840
Yams & Taro	4517.17		5204.58	2099.24	42355.07	4,653
Cooking Banana	3357.18		1328.79		2727.23	3,313
Dessert banana	2560.96		10980.24	4308.09	7786.29	2,730
Banana for beer	3063.05		3245.31	4025.90	8409.98	3,080
Bush beans	870.66		552.09	1067.57	542.23	835
Climbing beans	1067.83	753.28	1101.49	1483.65		1,046
Peas	753.57	502.33	770.17		692.15	729
Groundnuts	488.87		373.87	499.96	436.47	508
Soya beans	460.22		765.43	405.19	450.36	593
Vegetables	7513.83	5842.49	14457.40	15177.25	17142.59	8,703
Fruits	3170.05	2244.84				4,150
Other crops	6185.28	218.03	5185.27	3457.53		6,837

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Table 5. Production of Main Crops (MT)

	Agricultural Operators					LSF			
Crops	**11**	**12**	**21**	**22**	**30**	**S/Total1**	**S/Total2**	**All Rwanda**	**Percent**
Cereals	**262,649**	**12,628**	**37,037**	**6,396**	**23,979**	**342,689**	**60,059**	**402,748**	**11%**
Maize	232,583	7,012	34,164	4,972	9,852	288,582	11747.74	300,330	8%
Sorghum	27,483	2,831	1,749	656	14,085	46,803	718.91	47,522	1%
Paddy rice	58	-	1,111	766	-	1,936	47494.93	49,430	1%
Wheat	1,484	2,786	-	-	-	4,270	95.22	4,365	0%
Other cereals	1,041	-	13	2	42	1,098	2.39	1,100	0%
Tubers & Roots	**1,131,640**	**157,870**	**54,197**	**3,098**	**10,950**	**1,357,754**	**3,903**	**1,361,656**	**37%**
Cassava	392,683	-	5,692	-	6,940	405,315	645.60	405,961	11%
Sweet Potatoes	459,945	4,432	34,985	2,226	1,170	502,757	1002.87	503,760	14%
Irish Potatoes	208,780	153,438	2,442	466	2,311	367,437	2254.30	369,691	10%
Yams & Taro	70,232	-	11,078	406	529	82,244		82,244	2%
Banana	**979,009**	**-**	**12,436**	**454**	**12,533**	**1,004,431**	**1,502**	**1,005,934**	**28%**
Cooking Banana	369,415	-	1,493	-	7,258	378,165	1030.80	379,196	10%
Dessert banana	88,671	-	5,775	159	2,363	96,968	335.88	97,304	3%
Banana for beer	520,924	-	5,168	295	2,911	529,298	135.74	529,434	15%
Legumes & Pulses	**260,715**	**5,281**	**6,138**	**815**	**4,579**	**277,528**	**1,489**	**279,017**	**8%**
Beans	**233,712**	**4,538**	**4,514**	**744**	**4,312**	**247,820**	**1,125**	**248,945**	**7%**
Bush beans	141,880	-	3,767	695	4,312	150,654	1061.21	151,715	4%
Climbing beans	91,832	4,538	747	49	-	97,166	63.35	97,230	3%
Peas	10,764	744	54	-	107	11,669	3.74	11,673	0%
Groundnuts	5,855	-	62	13	120	6,050	3.44	6,054	0%
Soya beans	10,385	-	1,507	58	40	11,988	357.23	12,346	0%
Vegetables & Fruits	**121,782**	**5,326**	**34,960**	**4,961**	**2,139**	**169,168**	**2,879**	**172,047**	**5%**
Vegetables	88,806	4,321	34,960	4,961	2,139	135,186	2422.28	137,608	4%
Fruits	32,976	1,006	-	-	-	33,982	456.63	34,438	1%
Other crops	**393,063**	**827**	**23,766**	**1,466**	**-**	**419,121**	**10276.62**	**429,398**	**12%**
All Rwanda	**3,148,858**	**181,932**	**168,532**	**17,188**	**54,180**	**3,570,691**	**80,109**	**3,650,799**	100%

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Table 6. Selected Segments by Stratum

Stratum	Area (Km2)	Number of Sampled Segments
11	14,791	340
12	484	48
21	958	64
22	202	40
30	1,338	48
		540

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Table 7. Agricultural Operators and LSF by Stratum

	Strata	Number	%
Agricultural Operators	11	3,251	77.1
	12	518	7.3
	21	577	7.5
	22	483	4.0
	30	260	4.1
	All Rwanda	5,089	100.0
LSF		195	100.0

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Table 8. Agricultural Operators and LSF by type (%)

		Individual farmer		Cooperative/ Institution/Company		Total	
	Strata	Number	%	Number	%	Number	%
Agricultural operators	11	3,241	99.7	10	.3	3,251	100.0
	12	517	99.9	1	.1	518	100.0
	21	569	99.1	8	.9	577	100.0
	22	481	99.8	2	.2	483	100.0
	30	257	99.5	3	.5	260	100.0
	All Rwanda	5,065	99.7	24	.3	5,089	100.0
LSF		99	53.4	96	46.6	195	100.0

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Table 9. Cooperative Membership

		Yes	No	Total
	Strata	%	%	%
Agricultural operators	11	14.2	85.8	100.0
	12	14.7	85.3	100.0
	21	29.7	70.3	100.0
	22	63.1	36.9	100.0
	30	16.1	83.9	100.0
	All Rwanda	17.5	82.5	100.0
LSF		66.5	33.5	100.0

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Table 10. Agricultural Operators by Residency (%)

Strata	Resident	Non Resident	Total
	%	%	%
11	47.8	52.2	100.0
12	43.1	56.9	100.0
21	7.8	92.2	100.0
22	5.3	94.7	100.0
30	100.0	.0	100.0
All Rwanda	43.0	57.0	100.0

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Table 11.Distribution of Agricultural Operators by Gender and Stratum

Strata	Male	Female	Total
	%	%	%
11	71.9	28.1	100.0
12	64.6	35.4	100.0
21	70.3	29.7	100.0
22	69.7	30.3	100.0
30	89.1	10.9	100.0
All Rwanda	71.8	28.2	100.0

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Table 12. Age Distribution of Agricultural Operators

Strata	14-24	25-34	35-44	45-54	55 and Above
	%	%	%	%	%
11	3.7	20.4	23.2	21.8	31.0
12	3.8	23.5	25.8	16.6	30.3
21	2.0	19.6	25.3	24.2	28.9
22	3.9	22.3	25.8	25.6	22.4
30	4.7	21.0	24.6	26.4	23.3
All Rwanda	3.6	20.7	23.7	22.0	30.1

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Table 13. Age Distribution of Male Agricultural Operators

Strata	14-24	25-34	35-44	45-54	55 and Above
	%	%	%	%	%
11	4.0	23.7	24.6	20.5	27.2
12	4.3	28.8	30.4	12.7	23.8
21	2.2	21.9	27.1	22.8	26.0
22	4.8	25.1	26.8	24.3	19.0
30	3.6	21.8	25.8	27.8	21.0
All Rwanda	3.9	23.9	25.3	20.7	26.2

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Table14. Age Distribution of Female Agricultural Operators

Strata	14-24	25-34	35-44	45-54	55 and Above
	%	%	%	%	%
11	2.9	11.8	19.4	25.2	40.6
12	2.8	13.8	17.5	23.7	42.2
21	1.4	14.1	21.1	27.6	35.7
22	1.6	16.0	23.5	28.7	30.3
30	14.2	14.2	14.2	15.0	42.5
All Rwanda	2.9	12.4	19.5	25.2	40.0

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Table 15. Education Level of Agricultural Operators by Stratum (%)

Strata	Primary	Secondary	Tertiary	No education	Total
	%	%	%	%	%
11	66.0	5.4	.6	28.0	100.0
12	57.3	8.8	2.1	31.9	100.0
21	68.0	7.6	.9	23.5	100.0
22	76.6	6.4	.4	16.6	100.0
30	71.6	6.1	0.0	22.3	100.0
All Rwanda	66.1	5.9	.7	27.3	100.0

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Table 16. Education level of Male Agricultural Operators (%)

Strata	Primary	Secondary	Tertiary	No education	Total
	%	%	%	%	%
11	72.4	5.8	.7	21.1	100.0
12	65.1	12.0	3.0	19.9	100.0
21	73.9	7.3	1.1	17.7	100.0
22	76.7	7.1	.3	15.9	100.0
30	72.7	6.8	0.0	20.4	100.0
All Rwanda	72.2	6.4	.8	20.6	100.0

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Table 17. Education Level of Female Agricultural Operators (%)

Strata	Primary	Secondary	Tertiary	No education	Total
	%	%	%	%	%
11	49.4	4.5	.5	45.6	100.0
12	43.1	2.8	.3	53.8	100.0
21	54.0	8.3	.5	37.2	100.0
22	76.2	4.9	.7	18.2	100.0
30	61.9	0.0	0.0	38.1	100.0
All Rwanda	50.6	4.6	.5	44.4	100.0

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Table 18. Average Size of Tract by Stratum

Strata	Average
11	.25
12	.19
21	.17
22	.12
30	2.56
All Rwanda	0.25

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Table 19. Share of Pure and Mixed Crop Agricultural Land (%)

	Strata	Pure crop	Mixed crop	Total
		%	%	%
Agricultural operators	11	37.8	62.2	100.0
	12	48.1	51.9	100.0
	21	54.2	45.8	100.0
	22	62.4	37.6	100.0
	30	32.6	67.4	100.0
	All Rwanda	38.7	61.3	100.0
LSF		83.7	16.3	100.0

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Table 20. Users of Organic Fertilizers (%)

	Strata	Used organic fertilizers
		%
Agricultural Operators	11	72.4
	12	74.0
	21	62.8
	22	37.0
	30	26.9
	All Rwanda	71.3
LSF		82.3

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Table 21. Use of Inorganic Fertilizer (%)

	Strata	Used Inorganic fetilizers
Agricultural operators	11	29.4
	12	66.0
	21	50.9
	22	79.0
	30	7.4
	All Rwanda	32.1
LSF		74.5

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Table 22. Users of Inorganic Fertilizers by Type and by Stratum (%)

	Strata	NPK	UREA	UREA (LIQUID)	DAP	OTHER Fertilizers	Total
		%	%	%	%	%	%
Agricultural Operators	11	23.1	35.3	.9	40.5	.2	100.0
	12	87.1	4.1	1.6	7.1	0.0	100.0
	21	16.8	48.8	.2	32.6	1.7	100.0
	22	45.3	43.9	3.6	6.9	.3	100.0
	30	9.1	63.6	0.0	27.3	0.0	100.0
	All Rwanda	26.9	35.5	1.0	36.3	.3	100.0
LSF		22.9	39.8	.9	31.9	4.2	100.0

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Table 23. Agricultural Operators by Type of Seeds Used (%)

	Strata	Traditional seeds	Improved seeds	Total
		%	%	%
Agricultural operators	11	74.5	25.5	100.0
	12	86.8	13.2	100.0
	21	66.9	33.1	100.0
	22	59.9	40.1	100.0
	30	96.0	4.0	100.0
	All Rwanda	74.6	25.4	100.0
LSF		30.5	69.5	100.0

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Table 24. Agricultural Operators and Large Scale Farmers Practicing Irrigation (%)

	Strata	Practiced irrigation
Agricultural operators	11	.7
	12	0.0
	21	11.1
	22	47.4
	30	2.9
	All Rwanda	1.6
LSF		8.2

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Table 25. Agricultural Operators and LSF by Type of Irrigation Practised (%)

	Strata	Pumps/tube wells/irrigation machines	Watering can	Water channels	Others	Total
		%	%	%	%	%
Agricultural operators	11	6.2	55.4	26.2	12.3	100.0
	12	0.0	0.0	0.0	0.0	100.0
	21	1.5	30.3	58.3	9.8	100.0
	22	.5	7.9	89.8	1.8	100.0
	30	38.5	61.5	0.0	0.0	100.0
	All Rwanda	3.6	35.2	52.6	8.6	100.0
LSF		19.0	21.9	50.5	8.6	100.0

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Table 26. Anti-erosive Activities by Agricultural Operators and Large Scale Farmers (%)

	Strata	Practiced anti erosion activities
		%
Agricultural operators	11	70.8
	12	80.3
	21	63.8
	22	80.6
	30	13.8
	All Rwanda	70.5
LSF		44.0

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Table 27. Practice of Anti-erosion activities by type (%)

Agricultural operators	Strata	Ditches	Trees	Bench terraces	Progressive terraces	Cover plants/ grasses	Water drainage	Mulching	Beds	Others	Total
		%	%	%	%	%	%	%	%	%	%
	11	2.9	2.7	4.7	21.1	65.4	.5	.7	2.0	.1	100.0
	12	.4	.2	3.5	4.6	31.0	.0	0.0	60.3	.0	100.0
	21	.2	1.0	.1	4.5	26.9	32.0	1.1	33.0	1.2	100.0
	22	.9	.1	3.4	.3	9.1	66.3	.9	18.9	.0	100.0
	30	29.0	2.1	0.0	1.3	49.1	0.0	9.2	9.2	0.0	100.0
	All Rwanda	2.5	2.2	4.1	17.3	56.8	6.1	.7	10.0	.2	100.0
LSF		11.9	6.4	9.0	7.9	27.6	24.8	8.6	3.2	.6	100.0

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Table 28. Agricultural Operators and LSF using Pesticide (%)

	Strata	Uses pesticides
		%
Agricultural operators	11	12.8
	12	71.1
	21	26.2
	22	67.4
	30	9.4
	All Rwanda	16.1
LSF		62.6

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Table 29.Type of Pesticide used by Agricultural operators and LSF

Agricultural operators	Strata	DITHANE	RIDOMIL	DIMETHOATE	CYPERMETRINE	DURSIBAN	OTHER PESTICIDE	Total
		%	%	%	%	%	%	%
	11	31.7	7.2	11.1	40.2	.7	9.1	100.0
	12	46.1	27.7	15.8	10.3	0.0	.1	100.0
	21	16.1	.9	7.1	53.6	0.0	22.3	100.0
	22	2.8	.6	6.4	61.7	0.0	28.5	100.0
	30	36.0	4.0	4.0	28.0	0.0	28.0	100.0
	All Rwanda	31.6	10.9	11.5	36.0	.4	9.7	100.0
LSF		13.2	8.6	4.3	38.3	.6	35.0	100.0

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Table 30. Use of Production by Agricultural Operators (%)

Crops	Sold	Own consumption	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	Stored	Damaged	Used in any other way	Total
Maize	15.9	76.1	0.3	0.6	2.9	0.1	3.6	0.1	0.4	0.0	0.1	100
Paddy rice	71.7	23.2	1.2	0.1	1.5	0.0	2.0	0.0	0.3	0.1	-	100
Sorghum	51.1	39.4	0.5	1.6	1.9	0.1	4.8	0.0	0.6	-	-	100
Wheat	18.8	62.5	-	-	0.5	-	18.2	-	-	-	-	100
Bush beans	14.1	70.5	0.4	0.8	1.4	0.3	11.6	0.0	0.9	0.0	0.0	100
Climbing beans	7.9	76.9	0.1	0.1	2.5	0.3	11.8	-	0.3	-	0.0	100
Peas	10.0	77.4	-	-	1.3	-	11.2	-	0.1	-	-	100
Cassava	22.0	74.2	0.9	0.2	2.5	0.0	-	0.0	0.1	0.1	-	100
Irish potatoes	16.8	72.5	0.3	0.1	1.8	0.2	8.2	0.0	0.0	0.1	-	100
Sweet potatoes	12.2	83.6	1.0	0.1	2.4	0.0	0.0	0.6	-	0.1	-	100
Tomotoes	74.8	21.6	0.1	-	2.5	0.0	0.2	-	-	0.7	0.0	100
White cabbage	46.0	46.6	-	-	6.4	-	-	-	-	-	1.1	100
Onions	69.7	26.5	-	2.0	1.3	-	0.6	-	-	-	-	100
Carrots	66.1	32.0	-	-	1.9	-	-	-	-	-	-	100
Eggplant	46.3	49.3	-	-	4.2	0.0	0.0	-	-	0.1	-	100
Cooking Bananas	15.4	82.5	0.2	0.1	1.4	0.0	-	-	0.1	0.0	0.2	100
Dessert banana	57.1	41.6	0.1	0.2	0.9	-	-	-	-	-	0.1	100
Banana for beer	58.3	39.4	0.1	-	1.2	0.0	-	-	-	-	0.9	100
Pineapple	29.5	62.7	-	-	7.6	-	-	-	-	-	0.1	100
Avocado	67.0	32.0	-	-	1.0	-	-	-	-	-	-	100
Passion fruits	53.1	40.6	-	-	3.8	-	2.5	-	-	-	-	100
Soya beans	12.1	70.8	0.1	0.1	0.9	0.1	15.2	0.2	0.6	-	-	100
Ground nuts	17.2	62.1	0.4	0.6	1.3	0.2	17.6	-	0.5	0.0	0.0	100
sun flower	0.9	90.2	-	-	1.5	0.1	7.3	-	-	-	-	100
coffee	100.0	-	-	-	-	-	-	-	-	-	-	100
Pyrethrum	100.0	-	-	-	-	-	-	-	-	-	-	100
Black eggplants	42.5	57.5	-	-	-	-	-	-	-	-	-	100
Sweet pepper	68.7	30.5	-	-	0.7	-	0.1	-	-	-	-	100

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Table 30. Use of Production by Agricultural Operators (%) Cnt'd.

Crops	Sold	Own consumption	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	Sored	Damaged	Used in any other way	Total
Pepper	81.4	8.6	-	-	3.6	-	6.4	-	-	-	-	100
Amaranths	41.8	51.1	-	-	7.1	-	-	-	-	-	-	100
Celery	100.0	-	-	-	-	-	-	-	-	-	-	100
Small red beans	-	78.0	-	-	-	-	22.0	-	-	-	-	100
Sugar beet	89.3	5.6	-	-	5.1	-	-	-	-	-	-	100
Garlic	57.3	8.8	-	-	-	-	32.3	-	1.7	-	-	100
Leeks	82.5	13.3	-	-	4.2	-	-	-	-	-	-	100
French beans	48.6	44.2	-	-	7.2	-	-	-	-	-	-	100
Napia grass	20.0	-	-	-	-	-	-	2.0	-	-	78.0	100
Sugar cane	60.1	32.6	-	-	7.3	-	-	-	-	-	-	100
Fodder crop	8.9	-	-	-	0.9	1.2	4.1	84.6	-	-	0.2	100
Macadamia	100.0	-	-	-	-	-	-	-	-	-	-	100
Mango	31.0	40.0	-	3.3	25.7	-	-	-	-	-	-	100
Papaya	-	75.0	-	-	25.0	-	-	-	-	-	-	100
Tree tomato	56.8	40.5	-	-	2.7	-	-	-	-	-	-	100
Lemon	-	100.0	-	-	-	-	-	-	-	-	-	100
Millet	21.6	67.9	-	-	2.9	-	7.6	-	-	-	-	100
Pumpkins	6.6	80.4	-	-	10.9	-	1.4	-	-	0.7	-	100
Cucumber	96.4	3.6	-	-	-	-	-	-	-	-	-	100
Taro	12.1	81.1	0.5	-	1.8	-	4.5	-	-	-	-	100
Yams	24.1	69.1	-	-	3.3	-	3.5	-	-	-	-	100
Other seasonal vegetables	-	50.0	-	-	50.0	-	-	-	-	-	-	100
Other annual vegetables	-	80.0	-	-	20.0	-	-	-	-	-	-	100
Other seasonal crops	97.8	0.0	-	-	1.5	-	-	-	-	0.7	-	100
Other annual crops	74.2	5.8	-	-	7.5	-	-	-	-	-	12.5	100

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Table 31. Use of Production by Large Scale Farmer (%)

Crops	Sold	Used by the household	used as wage for hired labour	used as farm rent	offered as a gift	exchanged with other things	used as seeds	used as fodder	Stored	damaged	used in any other way	Total
Maize	59.4	28.6	0.7	-	0.6	-	5.6	3.1	1.1	0.9	0.1	100.0
Paddy rice	84.5	14.1	0.2	-	0.0	-	0.9	-	-	0.1	-	100.0
Sorghum	85.8	6.7	0.1	-	-	-	7.3	-	-	0.1	-	100.0
Wheat	94.0	5.0	-	-	-	-	1.0	-	-	-	-	100.0
Bush beans	50.1	36.5	1.2	-	0.4	-	10.2	-	1.2	0.0	0.0	100.0
Climbing beans	54.9	31.0	-	-	2.1	-	11.9	-	-	-	0.2	100.0
Peas	37.3	39.5	-	-	1.0	2.5	19.8	-	-	-	-	100.0
Other legumes & pulses	-	-	-	-	-	-	-	100.0	-	-	-	100.0
Cassava	37.3	50.9	-	-	-	-	-	11.6	-	-	0.2	100.0
Irish potatoes	39.0	53.9	-	-	0.1	0.2	6.7	-	-	0.1	-	100.0
Sweet potatoes	-	87.1	-	-	5.7	-	-	7.1	-	-	-	100.0
Tomotoes	61.3	36.2	-	-	-	1.7	-	-	-	0.8	-	100.0
White cabbage	32.3	64.4	-	-	1.0	-	-	-	-	-	-	98.0
Flower cabage	100.0	-	-	-	-	-	-	-	-	-	-	100.0
Onions	82.7	17.3	-	-	-	-	-	-	-	-	-	100.0
Carrots	25.0	75.0	-	-	-	-	-	-	-	-	-	100.0
Eggplant	69.8	30.3	-	-	-	-	-	-	-	-	-	100.0
Cooking Bananas	49.3	47.0	0.2	-	3.5	-	-	-	-	-	-	100.0
Dessert banana	75.9	24.1	-	-	-	-	-	-	-	-	-	100.0
Banana for beer	85.7	14.3	-	-	-	-	-	-	-	-	-	100.0
Pineapple	72.3	27.6	-	-	0.1	-	-	-	-	-	-	100.0
Avocado	100.0	-	-	-	-	-	-	-	-	-	-	100.0
Passion fruits	98.0	2.0	-	-	-	-	-	-	-	-	-	100.0
Other fruits	100.0	-	-	-	-	-	-	-	-	-	-	100.0
Soya beans	46.2	31.4	-	-	-	-	5.4	11.1	5.6	0.1	0.3	100.0
Ground nuts	46.2	38.2	-	-	1.1	-	13.9	-	-	-	-	99.0
coffee	100.0	-	-	-	-	-	-	-	-	-	-	100.0

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Table 31.Use of Production by Agricultural Operators (%) Cnt'd.

Crops	Sold	Used by the household	used as wage for hired labour	used as farm rent	offered as a gift	exchanged with other things	used as seeds	used as fodder	Stored	damaged	used in any other way	Total
Celery	100.0	-	-	-	-	-	-	-	-	-	-	100
Sugar beet	-	100.0	-	-	-	-	-	-	-	-	-	100
French beans	50.0	50.0	-	-	-	-	-	-	-	-	-	100
Napia grass	-	-	-	-	-	-	-	-	-	-	100.0	100
Sugar cane	70.0	10.0	-	-	20.0	-	-	-	-	-	-	100
Fodder crop	0.3	-	-	-	-	-	10.3	89.5	-	-	-	100
Macadamia	100.0	-	-	-	-	-	-	-	-	-	-	100
Mango	65.9	33.9	-	-	-	-	-	-	-	0.2	-	100
Apple	100.0	-	-	-	-	-	-	-	-	-	-	100
Papaya	70.0	10.0	-	-	20.0	-	-	-	-	-	-	100
Tree tomato	59.4	40.6	-	-	-	-	-	-	-	-	-	100
Orange	35.0	65.0	-	-	-	-	-	-	-	-	-	100
White Mulberry	-	-	-	-	-	-	-	100.0	-	-	-	100
Millet	95.0	5.0	-	-	-	-	-	-	-	-	-	100
Jatropha	-	-	-	-	-	-	100.0	-	-	-	-	100
Palm tree	100.0	-	-	-	-	-	-	-	-	-	-	100
Other seasonal crops	100.0	-	-	-	-	-	-	-	-	-	-	100
Other annual crops	75.0	-	-	-	-	-	-	-	-	-	25.0	100
Other perennial crops	66.7	-	-	-	-	-	-	-	-	-	33.3	100
Sweet pepper	100.0	-	-	-	-	-	-	-	-	-	-	100
Pepper	100.0	-	-	-	-	-	-	-	-	-	-	100
Amaranths	11.1	88.9	-	-	-	-	-	-	-	-	-	100.0

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