REPUBLIC OF RWANDA

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Seasonal Agricultural Survey (SAS)–2015 Season B

I. Introduction

In 2015, the National Institute of Statistics of Rwanda (NISR) conducted Seasonal Agricultural Surveys (SAS) covering season B that starts in March 2015 and ends with June 2015. This is a summary of key results and related tables about land use, crop land, agricultural inputs, agricultural practices 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 24,911 agricultural operators in Season B phase 1 from which 5,337 agricultural operators were selected during Second Phase. Furthermore, enumerated Large Scale Farmers in screening phase were 558 in 2015 Season B, of which 194 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 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.

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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III. Farm characteristics (Area and Production)

Crop Land

In 2015 Season B, the main crops were Cassava (22.8% of the total cultivated area), Banana (23.1% of the total cultivated area), Beans (16.6% of the total cultivated area), and Sorghum (8.8% of the total cultivated area); other crops took 28.7% of the total cultivated area. Fallow land represented 20.98% in season B of the total arable land of Rwanda.

Crop Production

In 2015 Season B, the share of crop production by groups of crops in Rwanda was highest for Tubers and Roots (41.1%) followed by Banana (27.0%) and Cereals (7.4%). Other crop groups contributed as follows: Legumes and Pulses (6.3%) and Vegetables and Fruits (4.4%).

IV. Agricultural Inputs

Use of seeds and fertilizers

In 2015 Season B, 88.4% of agricultural operators used traditional seeds whereas 11.6% used improved seed. For LSF, the use of traditional seeds and improved seeds were 60.2% and 39.8% respectively.

For agricultural operators, the use of organic fertilizers and inorganic fertilizers were 43.1% and 14.6% for 2015 season B, respectively. On the other hand, for LSF, the use of organic fertilizers and inorganic fertilizers were 42.3% and 51.5% for 2015 season B, respectively.

Use of pesticides

In 2015 Season B, the percentage of agriculture operators who used pesticides is 7.9%.Among the Large Scale farmers, the percentage of those who used pesticides was 32.9%.

V. Agricultural practices

Irrigation practices

In 2015 season B, 1.5% of agriculture operators practised irrigation while 28.4% of Large Scale Farmers practised irrigation.

Anti-erosion activities

In 2015 season B, 65.2 % of all agriculture operators practised anti-erosion activities.Likewise, Large Scale Farmers who practised anti-erosion activities was 53.1 %.

Table 1. 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%	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%

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	**176,177**	**5,248**	**12,455**	**9,235**	**9,007**	**212,121**	**2,925**	**215,046**	**15.6**
Maize	59,854	3,948	3,967	711	2,677	71,156	996	72,152	**5.2**
Sorghum	106,905	56	6,378	603	6,310	120,252	327	120,580	**8.8**
Paddy rice	1,698	-	2,060	7,916	-	11,674	1,450	13,125	**1.0**
Wheat	6,020	1,244	-	4	-	7,267	99	7,366	**0.5**
Other cereals	1,701	-	49	0	20	1,771	52	1,823	**0.1**
Tubers and Roots	**414,991**	**21,950**	**13,922**	**802**	**7,306**	**458,971**	**711**	**459,682**	**33.4**
Cassava	300,262	46	6,041	292	6,702	313,342	434	313,777	**22.8**
Sweet Potatoes	63,739	695	4,242	325	194	69,195	74	69,269	**5.0**
Irish Potatoes	33,963	21,115	1,924	42	307	57,350	202	57,552	**4.2**
Yams & Taro	17,027	94	1,716	143	104	19,084	1	19,084	**1.4**
Banana	**309,344**	**210**	**2,662**	**165**	**4,538**	**316,920**	**544**	**317,464**	**23.1**
Cooking Banana	111,367	47	841	70	3,528	115,854	347	116,201	**8.5**
Dessert banana	38,878	3	387	13	275	39,555	135	39,690	**2.9**
Banana for beer	159,099	160	1,433	83	736	161,511	62	161,573	**11.8**
Legumes & Pulses	**255,044**	**2,838**	**9,663**	**1,138**	**9,374**	**278,056**	**2,346**	**280,402**	**20.4**
Beans	***209,429***	***1,570***	***6,339***	***514***	***8,638***	***226,490***	***1,984***	***228,474***	**16.6**
Bush beans	131,331	-	4,875	472	8,600	145,278	1,948	147,226	**10.7**
Climbing beans	78,097	1,570	1,464	42	38	81,211	37	81,248	**5.9**
Peas	12,259	1,266	54	3	111	13,693	51	13,744	**1.0**
Groundnuts	13,086	-	424	20	525	14,054	22	14,077	**1.0**
Soya beans	20,241	3	2,846	601	99	23,790	288	24,078	**1.8**
Other legumes & Pulses	30	-	-	-	-	30	-	30	**0.0**
Vegetables and Fruits	**20,629**	**1,584**	**2,737**	**386**	**877**	**26,213**	**550**	**26,763**	**1.9**
Vegetables	10,608	978	2,674	372	211	14,843	126	14,969	**1.1**
Fruits	10,021	606	64	14	665	11,370	424	11,794	**0.9**
Other crops	**66,729**	**3,554**	**2,857**	**306**	**1,537**	**74,982**	**706**	**75,687**	**5.5**
Total developped crop lar	**1,242,913**	**35,384**	**44,295**	**12,033**	**32,638**	**1,367,263**	**7,780**	**1,375,043**	**100.0**
Total Physical crop land	**925,043**	**33,089**	**39,418**	**7,515**	**30,876**	**1,035,941**	**13,899**	**1,049,840**	**100.0**
Fallow land	**187,527**	**4,384**	**20,665**	**3,094**	**1,841**	**217,512**	**2,733**	**220,245**	**21.0**

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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	1,082	757	639	970	881	1,036
Paddy rice	3,380		3,963	5,152		4,476
Sorghum	850	-	1,136	525	546	847
Wheat	765	414		-		709
Other cereals	323		57	-	-	303
Cassava	1,691	-	1,474	907	752	1,664
Sweet Potatoes	5,971	3,291	7,191	5,948	5,942	6,016
Irish Potatoes	4,083	8,509	2,616	2,094	3,774	5,675
Yams & Taro	3,592	9,066	4,841	2,757	2,360	3,718
Cooking Banana	3,361	9,172	1,950	1,382	2,750	3,331
Dessert banana	2,269	-	2,408	1,728	1,441	2,259
Banana for beer	2,481	803	3,200	2,033	3,211	2,489
Beans	821	1,076	720	646	744	817
Bush beans	750		635	638	742	747
Climbing beans	940	1,076	1,004	733	1,092	943
Peas	298	281	358	-	81	296
Ground nuts	379		80	-	439	371
Soya beans	376	-	459	474	220	387
Vegetables	9,625	2,860	7,599	12,314	446	8,725
Fruits	1,215	476	-	-	34	1,070

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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	**166,593**	**3,504**	**17,943**	**41,793**	**5,806**	**235,639**	**5,799.4**	**241,439**	**7.4**
Maize	64,785	2,989	2,533	690	2,359	73,356	1,418.7	74,775	2.3
Paddy rice	5,738	-	8,164	40,787	-	54,688	4,052.0	58,740	1.8
Sorghum	90,914	-	7,243	317	3,447	101,921	227.1	102,148	3.1
Wheat	4,607	515	-	-	-	5,122	101.0	5,223	0.2
Other cereals	549	-	3	-	-	552	0.6	552	0.0
Tubers and Roots	**1,088,214**	**182,808**	**52,746**	**2,681**	**7,592**	**1,334,041**	**2,450.0**	**1,336,491**	**41.1**
Cassava	507,815	-	8,902	265	5,039	522,021	194.0	522,215	16.0
Sweet Potatoes	380,586	2,288	30,505	1,933	1,151	416,464	228.8	416,693	12.8
Irish Potatoes	138,657	179,669	5,033	88	1,157	324,603	2,027.2	326,631	10.0
Yams & Taro	61,156	851	8,305	395	245	70,952	-	70,952	2.2
Banana	**857,335**	**564**	**7,158**	**287**	**12,460**	**877,804**	**1,048.2**	**878,852**	**27.0**
Cooking Banana	374,328	436	1,640	97	9,702	386,202	837.0	387,039	11.9
Dessert banana	88,202	-	933	22	396	89,552	117.9	89,670	2.8
Banana for beer	394,805	129	4,586	168	2,362	402,050	93.3	402,143	12.4
Legumes & Pulses	**188,163**	**2,045**	**5,927**	**617**	**6,688**	**203,440**	**1,810.7**	**205,251**	**6.3**
Beans	171,938	1,689	4,567	332	6,427	184,953	1,681.8	186,634	5.7
Bush beans	98,561	-	3,097	301	6,385	108,344	1,649.8	109,994	3.4
Climbing beans	73,377	1,689	1,470	31	42	76,608	32.0	76,640	2.4
Peas	3,654	356	19	-	9	4,038	23.9	4,062	0.1
Ground nuts	4,964	-	34	-	231	5,228	1.7	5,229	0.2
Soya beans	7,607	-	1,307	285	22	9,221	103.4	9,325	0.3
Vegetables and Fruits	**114,273**	**3,086**	**20,317**	**4,583**	**117**	**142,376**	**841**	**143,217**	**4.4**
Vegetables	102,101	2,798	20,317	4,583	94	129,893	703.9	130,597	4.0
Fruits	12,171	288	-	-	23	12,483	137.2	12,620	0.4
Other crops	**400,878**	**3,314**	**32,446**	**849**	**59**	**437,546**	**12,356**	**449,903**	**13.8**
All Rwanda	**2,815,456**	**195,321**	**136,538**	**50,810**	**32,722**	**3,230,846**	**24,306**	**3,255,152**	**100.0**

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Table 5. Selected Segments by Strata for SAS 2015

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	3,621	67.8
	1.2	527	9.9
	2.1	492	9.2
	2.2	425	8.0
	3.0	272	5.1
	All Rwanda	5,337	100
LSF		194	100

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Table 7. Agricultural Operators by type (%)

	Strata	Individual		Cooperative		Total	
		Number	%	Number	%	Number	%
Agricultural Operators	1.1	3,605	100	16	0.4	3,621	100
	1.2	527	100	0	0.0	527	100
	2.1	487	99.0	5	1.0	492	100
	2.2	423	99.5	2	0.5	425	100
	3.0	271	100	1	0.4	272	100
	All Rwanda	5,313	99.6	24	0.4	5,337	100
LSF						194	100

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Table 8. Cooperative Membership

		Yes	No	Total
	Strata	Percent	Percent	Percent
Agricultural Operators	1.1	14.9	85.1	100
	1.2	13.5	86.5	100
	2.1	33.3	66.7	100
	2.2	70.6	29.4	100
	3.0	9.6	90.4	100
	All Rwanda	15.2	84.8	100
LSF		58.8	41.2	100

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Table 9. Agricultural Operators by Residency (%)

	Agricultural Operators		
Strata	Resident	Non residen	Total
1.1	26.9	73.1	100
1.2	25.3	74.7	100
2.1	2.1	97.9	100
2.2	0.6	99.4	100
3.0	95.9	4.1	100
All Rwanda	23.8	76.2	100

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Table 10. Percentage of Agricultural Operators by Gender and Stratum

	Agricultural Operators		
Strata	Male	Female	Total
1.1	68.0	32.0	100
1.2	66.6	33.4	100
2.1	66.3	33.7	100
2.2	70.4	29.6	100
3.0	75.3	24.7	100
All Rwanda	68.0	32.0	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	4.5	24.1	21.9	21.7	27.9
1.2	5.9	28.7	23.1	20.3	22.0
2.1	3.3	22.6	22.6	22.8	28.7
2.2	6.9	24.8	21.7	23.6	22.9
3.0	5.9	26.6	22.5	19.6	25.5
All Rwanda	4.5	24.1	21.9	21.7	27.9

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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	4.5	28.4	23.4	20.1	23.6
1.2	6.8	33.9	25.1	19.7	14.5
2.1	3.7	28.8	22.6	21.1	23.8
2.2	7.7	26.2	22.5	21.8	21.8
3.0	4.9	27.9	24.5	18.6	24.0
All Rwanda	4.5	28.4	23.4	20.1	23.6

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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	4.4	14.9	18.7	24.9	37.1
1.2	4.0	18.2	19.3	21.6	36.9
2.1	2.4	10.4	22.6	26.2	38.4
2.2	4.8	21.6	20.0	28.0	25.6
3.0	9.0	22.4	16.4	22.4	29.9
All Rwanda	4.4	14.9	18.7	24.9	37.1

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Table 14. Education Level of Agricultural Operators by Stratum

	Agricultural Operators				
Strata	Primary	Secondary	Tertiary	No educati	Total
1.1	65.3	6.0	0.8	27.8	100
1.2	60.2	7.8	1.9	30.2	100
2.1	65.7	5.5	0.8	27.9	100
2.2	75.4	4.3	0.5	19.9	100
3.0	71.2	5.5	0.7	22.5	100
All Rwanda	65.3	6.0	0.8	27.8	100

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

	Agricultural Operators				
Strata	Primary	Secondary	Tertiary	No educati	Total
1.1	71.5	6.4	1.1	21.0	100
1.2	69.8	9.1	2.8	18.2	100
2.1	68.4	5.9	1.2	24.5	100
2.2	79.9	3.0	0.3	16.8	100
3.0	74.5	6.9	1.0	17.6	100
All Rwanda	71.4	6.4	0.0	21.0	100

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

	Agricultural Operators				
Strata	Primary	Secondary	Tertiary	No educati	Total
1.1	52.2	5.2	0.3	42.4	100
1.2	40.9	5.1	0.0	54.0	100
2.1	60.4	4.9	0.0	34.8	100
2.2	64.8	7.2	0.8	27.2	100
3.0	61.2	1.5	0.0	37.3	100
All Rwanda	52.2	5.2	0.3	42.3	100

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Table 17. Average Size of Tract by Stratum

Strata	Average (Ha)
1.1	0.22
1.2	0.18
2.1	0.18
2.2	0.13
3.0	2.12
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**	21.4	78.6	100
	1.2	61.0	39.0	100
	2.1	47.8	52.2	100
	2.2	68.0	32.0	100
	3.0	28.8	71.2	100
	All Rwanda	23.7	76.3	100
LSF		75.4	24.6	100

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Table 19. Users of Organic Fertilizers (%)

	Strata	Used organic fertilizers
Agricultural Operators	**1.1**	43.2
	1.2	48.6
	2.1	39.8
	2.2	14.8
	3.0	14.3
	All Rwanda	43.1
LSF		42.3

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Table 20. Use of Inorganic Fertilizer (%)

	Strata	Used inorganic fertilizers
Agricultural Operators	1.1	14.2
	1.2	62.4
	2.1	17.9
	2.2	58.4
	3.0	3.3
	All Rwanda	14.6
LSF		51.5

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

	Strata	NPK	UREA	UREA (LIQUID)	DAP	OTHER Fertilizers	Total
Agricultural Operators	1.1	28.6	31.2	0.9	39.1	0.3	100
	1.2	73.6	9.1	3.5	13.6	0.3	100
	2.1	15.7	34.7	5.0	43.0	1.7	100
	2.2	45.7	44.6	2.0	7.2	0.4	100
	3.0	8.3	16.7	-	66.7	8.3	100
	All Rwanda	29.6	30.8	1.0	38.2	0.3	100
LSF		31.4	35.4	1.1	25.1	6.9	100

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

	Strata	Traditional seeds	Improved seeds
Agricultural Operators	1.1	88.4	11.6
	1.2	85.6	14.4
	2.1	89.9	10.1
	2.2	89.7	10.3
	3.0	98.5	1.5
	All Rwanda	88.4	11.6
LSF		60.2	39.8

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

	Strata	Practised Irrigation
Agricultural Operators	1.1	1.3
	1.2	-
	2.1	10.0
	2.2	61.4
	3.0	2.9
	All Rwanda	1.5
LSF		28.4

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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
Agricultural Operators	1.1	13.2	67.9	3.8	15.1	100
	1.2	-	-	-	-	100
	2.1	5.8	67.3	5.8	21.2	100
	2.2	-	8.5	90.4	1.1	100
	3.0	37.5	62.5	-	-	100
	All Rwanda	11.8	63.7	10.0	14.5	100
LSF		18.0	18.0	59.0	4.9	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	64.9
	1.2	83.7
	2.1	72.5
	2.2	84.4
	3.0	10.1
	All Rwanda	65.2
LSF		53.1

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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**	9.3	2.9	4.9	10.5	68.3	0.4	1.0	2.7	0.0	100
	1.2	13.3	1.5	2.5	0.4	24.9	0.0	-	57.4	-	100
	2.1	1.9	0.4	0.1	0.1	25.3	43.8	0.4	27.9	-	100
	2.2	0.2	-	1.5	0.1	4.6	70.0	0.6	18.9	4.1	100
	3.0	15.6	9.4	-	-	48.2	-	23.2	2.2	1.4	100
	All Rwanda	9.2	2.8	4.8	10.3	67.3	1.2	1.0	3.4	0.1	100
LSF		18.9	7.6	8.5	4.2	28.0	13.7	15.1	3.6	0.4	100

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

	Strata	Used Pesticides
Agricultural Operators	1.1	7.6
	1.2	67.0
	2.1	9.8
	2.2	36.5
	3.0	2.6
	Rwanda	7.9
LSF		32.9

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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	44.6	7.0	7.3	32.5	0.5		8.1	100
	12	45.2	31.5	19.6	3.5	-		0.1	100
	21	11.9	4.5	22.4	49.3	1.5		10.4	100
	22	5.0	-	3.3	57.4	0.4		33.9	100
	30	16.7	-	25.0	41.7	-		16.7	100
	All Rwanda	43.8	8.8	8.4	30.7	0.5		7.7	100
LSF		16.1	8.0	5.8	38.7	2.9	-	28.5	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	8.0	.1	85.0	.3	.3	2.0	.1	3.9	.2	.0	.2	100
Paddy rice	70.9	.0	24.1	.9	.1	1.7	.1	2.2	.0	.0	.1	100
Sorghum	32.2	1.4	54.0	.4	.5	4.0	.1	7.1	.1	.1	.0	100
Wheat	32.4	.0	52.1	.0	.0	4.3	.0	11.1	.0	.0	.1	100
Other cereals	30.0	.0	50.0	.0	.0	.0	.0	20.0	.0	.0	.0	100
Bush beans	12.4	.3	73.2	.5	.2	1.9	.2	11.1	.0	.0	.1	100
Climbing beans	9.1	.3	72.6	.2	.1	3.2	.1	14.4	.0	.1	.0	100
Peas	11.1	.0	73.9	.0	.0	.5	.1	14.4	.0	.0	.0	100
Other legumes & pulses	.0	.0	100.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Cassava	15.5	.2	80.0	.7	.3	2.9	.0	.0	.1	.2	.1	100
Irish potatoes	21.7	.1	62.5	.5	.0	3.1	.1	11.8	.0	.2	.0	100
Sweet potatoes	13.2	.0	80.3	1.0	.2	3.3	.1	.0	1.8	.1	.0	100
Tomotoes	72.2	.0	18.6	.1	.0	6.9	.0	.5	.0	1.7	.0	100
White cabbage	58.8	.0	36.2	.5	.0	4.1	.0	.0	.3	.0	.0	100
Flower cabage	.0	.0	50.0	.0	.0	50.0	.0	.0	.0	.0	.0	100
Onions	62.0	4.0	24.7	.0	.0	2.3	.0	7.1	.0	.0	.0	100
Carrots	67.2	.0	30.1	.0	.0	2.7	.0	.0	.0	.0	.0	100
Eggplant	45.7	.0	48.1	.0	.0	6.0	.0	.1	.0	.0	.0	100
Cooking Bananas	19.0	.0	77.2	.6	.1	2.2	.1	.0	.0	.3	.5	100
Dessert banana	59.6	.0	38.4	.0	.0	1.2	.2	.0	.0	.0	.6	100
Banana for beer	70.2	.0	26.9	.0	.0	2.5	.0	.0	.0	.2	.1	100
Pineapple	29.2	.0	63.9	.0	.0	2.5	.0	.0	.0	.0	4.3	100
Avocado	51.2	.0	43.3	.0	.0	5.5	.0	.0	.0	.0	.0	100
Passion fruits	84.7	.0	12.0	.0	.0	2.9	.0	.0	.0	.4	.0	100
Soya beans	10.5	.1	73.5	.2	.2	1.3	.3	13.8	.0	.0	.1	100
Ground nuts	16.5	1.2	60.2	.1	.0	1.1	.0	20.8	.0	.0	.0	100
sun flower	6.4	.4	82.2	.0	.0	.8	.0	10.2	.0	.0	.0	100
coffee	99.4	.0	.3	.0	.0	.3	.0	.0	.0	.0	.0	100
Pyrethrum	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Sweet pepper	73.3	.0	21.2	.0	.0	3.8	.0	1.8	.0	.0	.0	100
Pepper	92.3	.0	2.1	.0	.0	4.2	.0	.0	.0	1.4	.0	100
Amaranths	43.4	1.3	50.4	.0	.0	4.5	.2	.0	.0	.2	.0	100
Celery	98.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	100
Small red beans	.0	.0	50.0	.0	.0	.0	.0	50.0	.0	.0	.0	100
Sugar beet	93.3	.0	6.8	.0	.0	.0	.0	.0	.0	.0	.0	100
Garlic	56.9	.0	7.3	.0	.0	.0	.0	.0	.0	.0	35.8	100
Leeks	42.7	.0	57.3	.0	.0	.0	.0	.0	.0	.0	.0	100
French beans	43.2	.0	54.1	.0	.0	2.7	.0	.0	.0	.0	.0	100
Napia grass	25.0	.0	.0	.0	.0	.0	.0	.0	3.8	.0	71.3	100
Sugar cane	54.9	.0	37.5	.0	.0	6.8	.0	.0	.0	.8	.0	100
Fodder crop	4.0	.5	.0	.0	.0	1.1	1.6	1.9	90.8	.0	.1	100
Mango	38.8	.0	60.4	.0	.0	.9	.0	.0	.0	.0	.0	100
Papaya	50.0	.0	50.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Tree tomato	65.5	.0	24.2	.0	.0	.0	.0	.0	.0	.0	10.3	100
Orange	88.0	.0	10.0	.0	.0	2.0	.0	.0	.0	.0	.0	100
Lemon	70.0	.0	20.0	.0	.0	10.0	.0	.0	.0	.0	.0	100
Guava	60.0	.0	15.0	.0	.0	5.0	.0	.0	.0	20.0	.0	100
Millet	.0	.0	90.0	.0	.0	.0	.0	10.0	.0	.0	.0	100
Pumpkins	18.7	.0	74.9	.0	.0	6.3	.0	.1	.0	.0	.0	100
Cucumber	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100
Taro	8.9	.0	85.3	.4	.1	2.6	.0	2.3	.1	.1	.3	100
Yams	11.9	.0	80.8	.0	.0	2.8	.0	4.2	.0	.0	.3	100
Other annual vegetables	.0	.0	91.7	.0	.0	8.3	.0	.0	.0	.0	.0	100
Other seasonal crops	73.3	.0	25.0	.0	.0	1.7	.0	.0	.0	.0	.0	100
Other annual crops	42.4	.0	.3	.0	.0	.1	.0	.0	.0	.0	57.1	100

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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