REPUBLIC OF RWANDA

MINISTRY OF AGRICULTURE AND ANIMAL RESOURCES

CROP ASSESSMENT 2012A SEASON

CROP AREAS , PRODUCTION AND AGRICULTURE ACTIVITIES

REPORT

FEBRUARY 2012

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ACRONYMS AND ABBREVIATIONS

CICA	Agricultural Information and Communication Centre
Cont'd	Continued
CSPro	Census and Survey Processing System
EA	Enumeration Area
ENA	Enquête Nationale Agricole
g/capita/day	grammmes per person and per day
GPHC/RGPH	General Census of Population and Housing
Ha	Hectare
Kcal	kilo calorie
Kcal/per/day	Kilo calories per person and per day
Kg	Kilogramme
MINAGRI	Ministry of Agriculture and Animal Resources
MT	Metric Tonnes
NAEB	National Agriculture Export Board
NAS	National Agriculture Survey
NISR	National Institute of Statistics of Rwanda
PSU	Primary Sampling Units
RAB	Rwanda Agricultural Board
SPSS	Statistical Package for Social Sciences
SSU	Secondary Sampling Unit
WFP	World Food Programme

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EXECUTIVE SUMMARY

The Ministry of Agriculture and Animal Resources (MINAGRI), in collaboration with the National Institute of Statistics of Rwanda (NISR) and World Food Programme (WFP) organize regularly a Crop Assessment Survey for each agricultural season. Rwanda has two agricultural seasons: September of one year to January the following year (Season A); and March to July of the same year (Season B).

The Crop Assessment Survey methodology is the same methodology used by the National Institute of Statistics of Rwanda (NISR) in its National Agriculture Survey (NAS 2008). Data collections activities were undertaken by field enumerators engaged by MINAGRI. Data that was collected included Household information (including gender of household head), Crop areas, Information on inclusion of the plots in the land consolidation programme, Crops planted, Anti-erosion activities, Fertilizers and Pesticides sources and uses.

There were a total of 2682 households enumerated in the Crop Assessment Survey of 2012A Season. With regard to gender, 72 percent of the heads of households were male and 28 percent of the household heads were females.

The area under crops, distributed by major groups was as follows Bananas (19%), Tubers and roots (27%), Pulses (31%), Cereals (21%) and Vegetables and fruits (2%).

The main crops grown in Southern Province were: Ordinary beans (17%), Maize (15%), Climbing beans (13%), Sweet potatoes (11%), Irish potatoes (10%), Peas (9%), Soybeans (7%), Yams (7%) and Vegetables (4%).

The main crops grown in Western Province were: Climbing beans (23%), Maize (21%), Ordinary beans (10%), Sweet potatoes (10%), Irish potatoes (10%), Yams (6%), Peas (6%), Vegetables (5%) and Soybeans (4%).

The main crops grown in Northern Province were: Climbing beans (30%), Maize (20%), Sweet potatoes (12%), Ordinary beans (11%), Irish potatoes (10%), Peas (4%), Vegetables (4%) and Yams (4%).

The main crops grown in Eastern Province were: Ordinary beans (26%), Maize (24%), Irish potatoes (10%), Groundnuts (8%), Sweet potatoes (7%), %), Climbing beans (5%), Peas (4%), Vegetables (4%), Yams (3%), Soybeans (4%), and Sorghum (3%).

On food security, the national Food Balance Sheet analysis for Rwanda shows a surplus of 126,000 metric tonnes. Data on estimated imports, food aid and stocks are not available and hence were not included in this calculation.

The majority of households had a pit (55.2%) for processing organic fertilizer as a result 81.3 percent of households stated that organic fertilizer which they used was firstly processed in a pit. On what type of fertilizer households intended to use this agriculture season, 87.4 percent of the households indicated, during phase I of the survey, that they would use organic fertilizer while 31 percent stated that they

would use inorganic fertilizer during the season. On the type of inorganic fertilizer households intended to use during the season, households indicated that they would use DAP (31.2%), Urea (30.3%), NPK (14.8%) and Dipthane (10.9%).

On the source of inorganic fertilizer and pesticides, overall about half of the fertilizers and pesticides were from MINAGRI/RAB/NAEB/District offices and the other half was from the market. Purin and Dursban were obtained by farmers solely from the market and lime was obtained solely from MINAGRI/RAB/NAEB/District offices.

In Rwanda, the majority of plots (49%) were located on the side of a hill. There were 29 percent of plots on top of hills, 16 percent of plots on the border of Wetlands and 6 percent either on Wetlands or Marshland.

The majority of plots of households included anti-erosion activities (76.6%) while 23.4 percent did not have anti-erosion activities. Overall the use of a combination of Ditches/terraces + grass was commonly used (43.9%) by households. Trees/grasses were used by 42.2 percent of households. A total of 6.3 percent of households used Ditches alone while Trees/grasses +terraces were used by 6.3 percent of households.

Overall the majority of households (55.2%) were of the view that rainfall was good while 44.8 percent were of the view that it was not good. On the expected level of damage due to too much rainfall, drought, and other diseases, the majority of households (44%) were of the view that there would be no damage, 26.2 percent indicated that the damage would be too much, while 14.8 stated that the damage would be on average and the same percentage stated that the damage would be little.

I. INTRODUCTION

The Ministry of Agriculture and Animal Resources (MINAGRI), in collaboration with the National Institute of Statistics of Rwanda (NISR) and World Food Programme (WFP) organize regularly the Crop Assessment Survey for each agricultural season. Rwanda has two agricultural seasons: September of one year to January the following year (Season A); and March to July of the same year (Season B).

This report provides statistics on food crops and livestock for 2012A Season**.**The results are based on the sample data only. Estimates of yield and production have been made and used to estimate the Food balance sheet for Rwanda. Frequency analysis of the sample data has been undertaken to provide results on a number of variables that were collected.

II. SAMPLING METHODOLOGY

The Crop Assessment Survey methodology is the same methodology used by National Institute of Statistics of Rwanda (NISR) in its National Agriculture Survey (NAS 2008). The NISR undertook the ENA in collaboration with the Ministry of Agriculture and Animal Resources. The sample size for the Crop Assessment Survey originally represented 25% of the 2008 National Agriculture Survey but was increased in 2011 to ensure a representative sample and take care of household replacements which had been exhausted in some EAs.

A two-stage stratified sampling design was adopted for the Crop Assessment Survey. Administrative districts were considered to be strata and the sample was drawn such that estimates are accurate at the district level. The districts of Kigali City (Nyarugenge, Gasabo, and Kicukiro) were grouped into one stratum because of the small number of agricultural households in each district.

Within each stratum (District), the PSU's (EA's) were selected using probability proportional to size (PPS) where size of each PSU was the number of households in the each EA. A total of 210 primary sampling units (PSU) was selected at the initial stage but was increased to 234.These EA's were defined, for each sector, during the 2002 General Census of Population and Housing (GPHC/ RGPH), at which time each EA had an average size of 227 households.

At the second stage (SSU), a random selection of 15 agricultural households from households listed in each selected EA (12 for interview and 3 households for replacement in case of failure or refusal to be surveyed by other households). These households were selected using simple random sampling. Overall, twenty five percent (25%) of the 2008 NAS sample represented 2,520 sample households in the Crop Assessment Survey. The sampling scheme is described in the National Agricultural Survey (NAS 2008) published by NISR.

III. DATA COLLECTION

Data collection was undertaken by Field Enumerators engaged by MINAGRI. There were a total of 117 Field Enumerators engaged for this exercise. In addition to Field Enumerators, there were 28 Field supervisors. This is a ratio of 4 Field Enumerators to one Field Supervisor. The Field Enumerators and Field Supervisors were trained on the data collection techniques. The latest training organized was in

October 2011. Field Enumerators complete printed questionnaires, which are checked and validated by their Supervisor. In addition to Field Supervisors, for quality assessment, staff members from MINAGRI and NISR undertook field supervision visits during each phase of the survey to ensure that field activities were going on well. There were two phases of data collection: Phase I: October-November 2011 and Phase II: December 2011-January 2012.

In phase I of the data collection, the following data was collected:

Household	Location, gender of head household and size
Crop areas:	Number of farming plots per household, areas of the plots and inclusion of plots in Land Consolidation Programme
Crops planted:	Pure stand and mixed cropping
Crop density:	Density of the pure stand crop and also that of mixed crops, crop by crop
Anti-Erosion Activities:	This is anti-erosion activities applied to farming plots, i.e. ditches (erosion control bands), Trees/ grasses and terraces
Fertilizer & Pesticides:	Sources and use of fertilizer (organic, inorganic), pesticides and formation of composite manure
Rainfall:	Assessment of rainfall and use of irrigation
Livestock:	Numbers of livestock in the household

In Phase II of the data collection, the following data was collected:

Household:	Location and gender of head of household and size of household
Main crops planted and Selected inputs:	Crop planted, areas, seeds and quantities, expected date of harvesting, yield information
Rainfall:	Rainfall situation, damage of crops due to rainfall
Fertilizer, pesticides and seeds:	Main sources, type of fertilizer or pesticides and on which crops were fertilizer or pesticides used
Crop density and yield:	This is the density of the pure stand crop and also that of mixed crops, crop by crop. Yield is also estimated for crops already harvested and also for those yet to be harvested

IV. DATA PROCESSING

Using CsPro (Census and Survey Processing System) software, a data entry mask was designed for the Crop Assessment Survey data. To enable data editing and preparation of the tables, the data was converted into Statistical Package for Social Science (SPSS) software format. Data editing included the checking of outliers, range, structure, and a selected set of checks for internal consistency. All errors detected during the editing procedure were corrected. Statistical tables and charts were prepared using SPSS. These tables were transferred to Excel spread sheet for further calculations. The processing of Phase I data was undertaken between November and December 2011 while the Phase II data was processed between January and February 2012.

V. KEY 2012A SEASON RESULTS

5.1. Area under Crops

Table 5.1 and Figures 5.1 and 5.2 below show the share of land under crops by major groups: Bananas, Tubers and roots, Cereals, Pulses and Vegetables and fruits.

Table 5.1. Share of land under crops by major crop categories

Crops category	2012A Season	2011A Season
Bananas	19%	19%
Tubers and roots	27%	27%
Cereals	21%	21%
Pulses	31%	31%
Vegetables and fruits	2%	3%

Figure 5.1: Share of land under crops 2012A Season

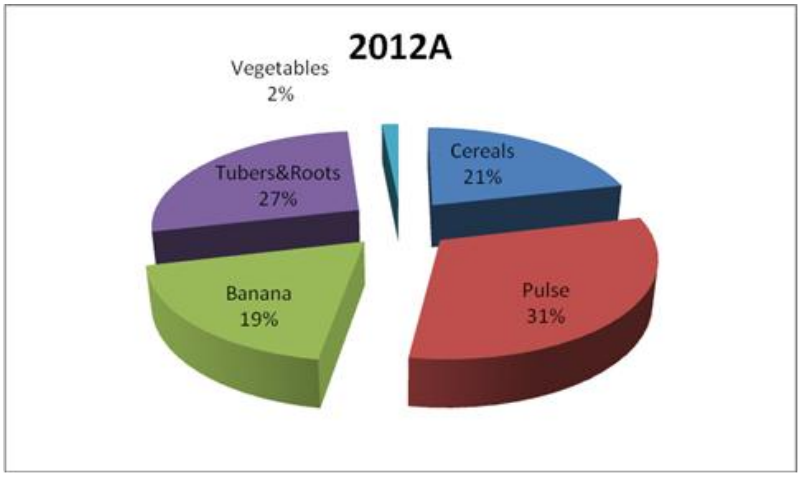
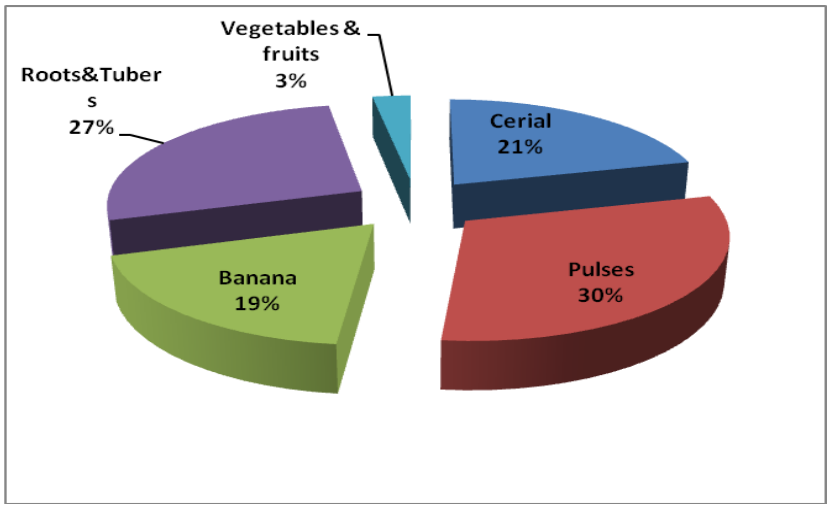


Figure 5.2: Share of land under crops 2011A Season



Clearly, there was no change in area under Bananas and Tubers and roots and Cereals in 2012A season when compared to 2011A Season. Pulses had 1 percent increase of area under the crop in 2012A Season when compared to 2011A Season while Vegetables and fruits had a 1 percent decrease in area in 2012A when compared to 2011A.

Countrywide in terms of area under crops the main crops continue to be Pulses (30%), Roots & Tubers (27%), Cereals (21%), and Bananas (19%).

Table 5.2 below gives area under crops, yield and production for the crop season 2012A and 2011A and the percentage changes.

Table 5.2: Area under crops, yield and crop production (Comparison of two crop seasons)

	Area under crops (ha.)			Yield (kg./ha.)			Production (MT)		
Crops	2011A SEASON	2012A SEASON	Change	2011A SEASON	2012A SEASON	Change	2011A SEASON	2012A SEASON	Change
Sorghum	6483	9 827	52%	1180	1 232	4%	7 647	12 105	58%
Maize	150407	168 877	12%	2270	2 406	6%	341 479	406 389	19%
Wheat	14067	5 051	-64%	1924	1 562	-19%	27 063	7 887	-71%
Rice	6140	5 887	-4%	4317	5 725	33%	31 997	33 702	5%
Beans	191473	224 229	17%	937	1 093	17%	179 392	245 191	37%
Peas	14777	20 866	41%	779	729	-6%	11 510	15 210	32%
Groundnuts	11696	11 563	-1%	530	552	4%	6 204	6 380	3%
Soybeans	19643	18 038	-8%	663	566	-15%	13 030	10 217	-22%
Banana	173086	167 714	-3%	8572	9 565	12%	1 483 693	1 604 149	8%
Irish Potato	103646	92 853	-10%	12102	12 604	4%	1 325 225	1 335 977	1%
Sweet Potato	35540	47 667	34%	7971	8 639	8%	283 299	411 788	45%
Yam_Taro	10758	9 133	-15%	6249	6 019	-4%	67 227	54 972	-18%
Cassava	102971	92 119	-11%	10917	12 072	11%	1 124 090	1 112 055	-1%
Vegetables & fruits	49200	24 971	-49%	11063	10806	-2%	552 322	269 843	-51%

For the detailed tables on area under crops, yield and crop production see Annex Tables A.5-A.11.

The following are some of the highlights on the estimated production, area under crops and yield for the 2012A Season and 2011A Season.

Maize: in comparison with season 2011A, estimated Maize production rose by 19%, at the same time Maize yield increased by 6 percent between the two seasons. The main reason for the increase in production is the 12 percent increase in area under maize.

Wheat: Estimated Wheat production decreased by 71 percent. Yield decreased by 19 percent while area under the crop decreased by 64 percent.

Beans: Estimated production of Beans increased by 37 percent, yield increased by 17 percent and area under Beans increased by 17 percent.

Soybeans: The estimated production of Soybeans decreased by 22 percent, while the area under Soybeans decreased by 8 percent. The yield of Soybeans decreased by 15 percent.

Bananas: The production of Bananas increased by 8 percent, yield increased by 12 percent while area under Bananas decrease slightly by 3 percent.

Sweet potatoes: Production increased by 45 percent, yield increased by 8 percent while area under the Sweet potatoes increased by 34 percent.

5.2 Food Security

Food security is a situation when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life. Commonly their concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences.

5.2.1 Energy Coverage

Table 5.3 below gives the estimated energy availability by province. The Southern Province had the lowest minimum energy availability of 2020 Kcal/capita. This was partly due to heavy rains which had damaged Ordinary Beans. The Eastern and Western Provinces had the highest energy availability. This was partly due to increase of Climbing Beans production in these provinces.

Table 5.3: Estimated energy availability by province

Province	Energy availability (Kcal/Capita)	
	Minimum	Maximum
Southern	2020	3555
Western	2677	4471
Northern	2693	3522
Eastern	2264	4486

5.2.2 Production of Energy, Proteins and Lipids

The production of Energy in kilocalories (Kcal), Proteins and Lipids for the 2012A and 2011A Seasons is given in Table 5.4 below. The highest percentage change between the two crop seasons was in Proteins (18%). There was an 11 percent change in Lipids while for Energy; there was an 8 percent change between 2012A Season and 2011A Season.

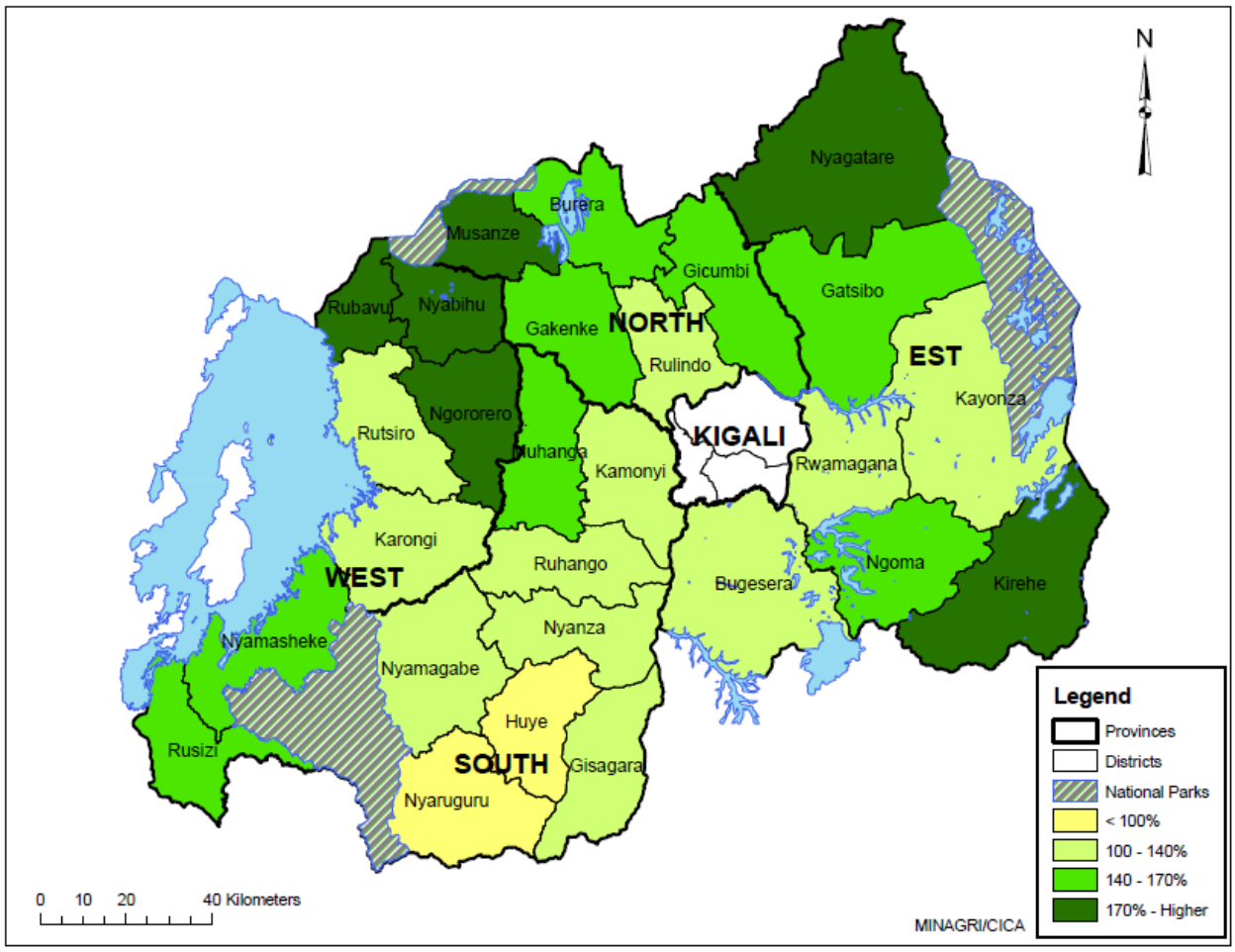
Table 5.4: Estimated production of energy (Kcal), proteins and lipids

	2011A Season	2012A Season	Percentage change
Energy (Kcal) (1 000 000 000)	5,043	5,441.3	8
Proteins (1 000 T.)	110	129.5	18
Lipids (1 000 T.)	24	26.6	11
Energy (Kcal/capita/day)	2,605	2,943	13
Protein (g/capita/day)	68	75	11
Lipids (g/capita/day)	24	25	3

N.B.: Adult humans require 2100 Kcal/capita/day, 59g of proteins and 40 g of lipids (Source ENA/MINIAGRI)

Figure 5.3 below is a map showing the availability of food production per person per day in terms of energy (calories) in various parts of the country. In reading the map, it should be remembered that the amount of food produced is assumed to be consumed locally without loss in all parts of the country by the estimated population. Any increase or decrease in population should automatically mean less food per person per day or more food per person per day.

Figure 5.3: Availability of food production per person per day in percent of recommended 2,100 Kcal/per person/day



5.2.3 Contribution of Crops and Animal Production in Energy, Proteins and Lipids

Table 5.5 below shows the percentage contribution of crops and animal production in Energy, Proteins and Lipids.

Table 5.5: Percentage contribution of crops and animal production in Energy, Proteins and Lipids

Groups	Energy	Proteins	Lipids
Animals	5	11	44
Cereals	25	26	33
Pulses	15	38	13
Banana	11	4	2
Tubers & Roots	42	19	7
Vegetables and fruits	2	2	1

Clearly, contribution to animals was highest in Lipids, Pulses contribution was highest in Proteins while Tubers and roots were highest in providing energy.

5.2.4 Food Balance Sheet

The estimated Food balance sheet for Rwanda is shown in Table 5.6 below. This balance sheet is for 6 months from January to June 2012.

Table 5.6: Estimated Rwanda food balance sheet

	In 000MT
I. Availability (=Sum of 1, 2, 3 and 4)	**1,390**
1. Stocks	-
2. Crop production	1,687
3. Animal production	40
4. Losses (20% of Crop production)	-337
II. Needs (= 5)	**1,264**
5. Consumption	1,264
III. Balance/Deficit = (=I-II)	**126**

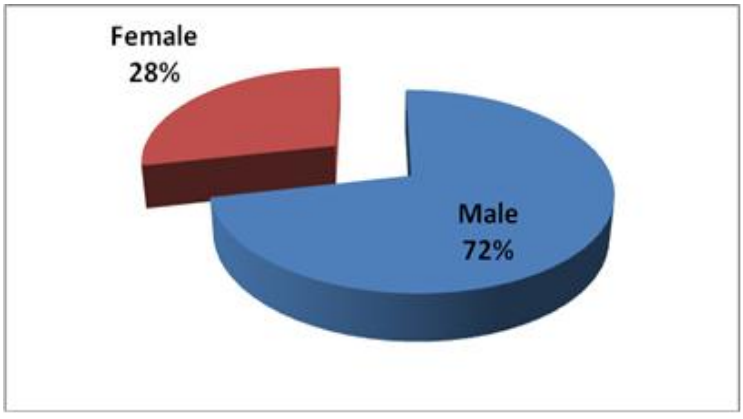
From the results shown above, the estimated Food balance sheet shows a surplus of 126, 000 metric tonnes. Data on estimated imports, exports, food aid and stocks are not available and hence not included in this calculation.

5.3 Household and Agriculture Activities of 2012A Season

5.3.1 Gender of Head of Household

There were a total of 2682 households enumerated in 2012A Season Crop Assessment Survey. With regard to gender, 72 percent of the heads of households were male and 28 percent of the household heads were female (See Figure 5.3 below).

Figure 5.4: Distribution of heads of households by gender



5.3.2 Household Members Practicing Agriculture

There were a total of 13,703 household members from a sample of 2682 households who practice agriculture. This gives 5.1 average household size of Rwanda households that practice agriculture. As expected (see Table 5.7 below) only 3 percent of the household members practice agriculture in Kigali city. Southern and Western Provinces had the highest (26%) number of household members that practiced agriculture while Northern Province has 20 percent and Eastern Province 26 percent.

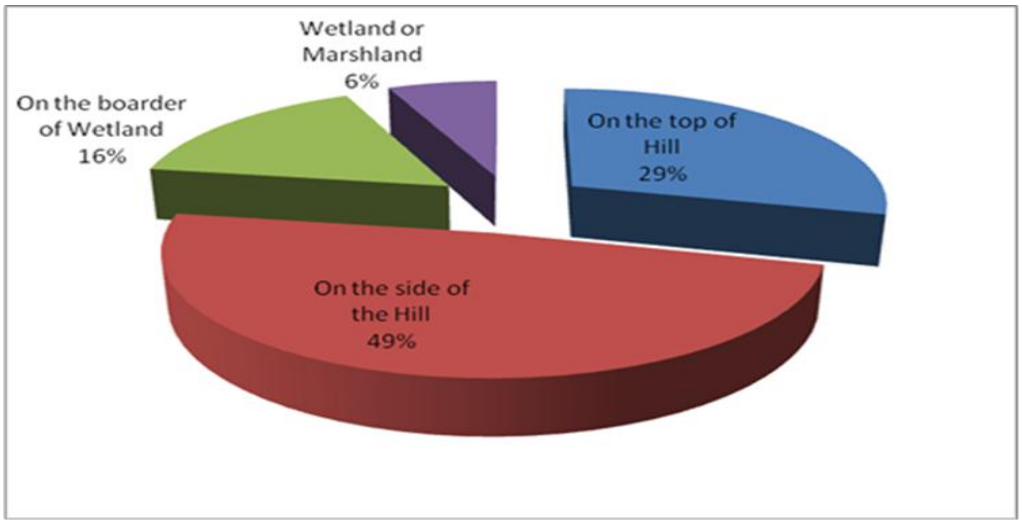
Table 5.7: Percentage number of sample households who practice agriculture by province

Kigali City and Provinces	Total number of household members	Household members who practice agriculture	Percentage of households members who practice agriculture
Kigali City	388	166	3
Southern Province	3680	1459	26
Western Province	3610	1458	26
Northern Province	2832	1107	20
Eastern Province	3193	1323	24
Total	13703	5513	100

5.3.3 Location of Plots

The majority of plots (49%) were located on the side of a hill (See Fig 5.4). There were 29 percent of plots on top of hills, 16 percent on the border of Wetlands and 6 percent either on Wetlands or Marshlands.

Figure 5.5: Percentage distribution of plot location



5.3.4 Anti-Erosion Activities

The majority of plots included anti-erosion activities (76.6%) while 23.4 percent did not have anti-erosion activities (See Table 5.8). Kigali City had the highest number of plots which included anti-erosion activities while Eastern Province had the lowest number of plots which included anti-erosion activities.

Table 5.8: Distribution of anti-erosion activities in plots by province

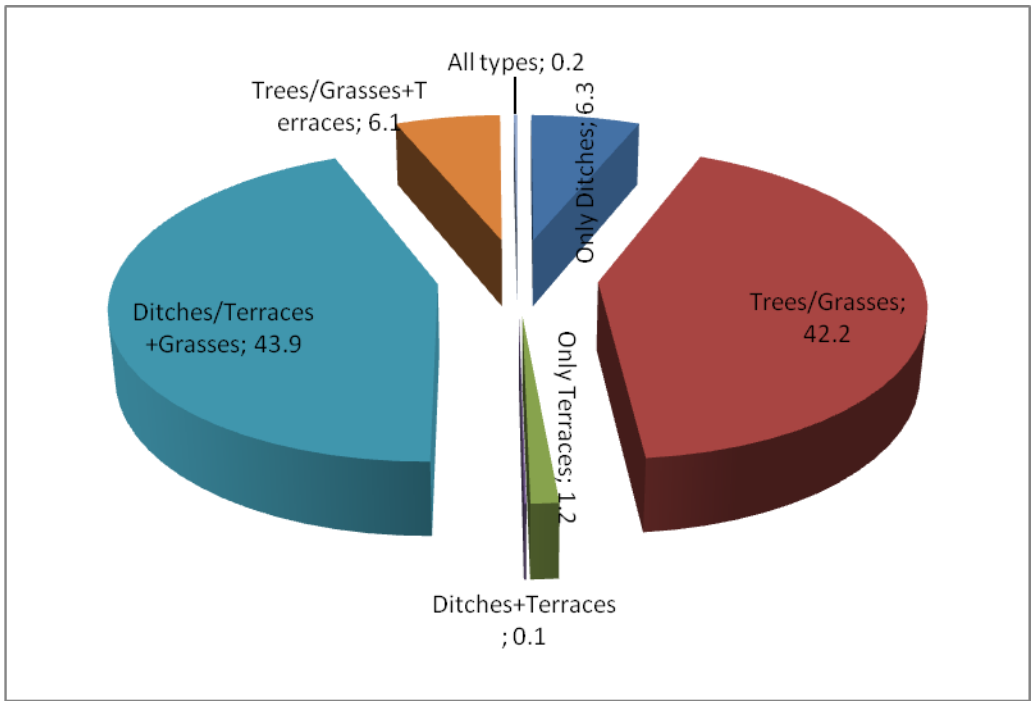
	Kigali City	Southern Province	Western Province	Northern Province	Eastern Province	Total
There are	87.0%	82.9%	76.0%	76.5%	64.9%	76.6%
There aren't	13.0%	17.1%	24.0%	23.5%	35.1%	23.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

There were three types of anti-erosion activities that households used namely Ditches, Terraces, and Trees/grass. Households may use one type or a combination of types of anti-erosion activities. Overall the use of a combination of Ditches/Terraces + Grass was commonly used (43.9%) by households. Trees/grasses were used by 42.2 percent of households. A total of 6.3 percent of households used Ditches alone while Trees/grasses +Terraces were used by 6.1 percent of households (See Table 5.9 and Figure 5.5 below).

Table 5.9: Anti-erosion activities by province (Percent)

Type of anti-erosion activity	Kigali City	Southern Province	Western Province	Northern Province	Eastern Province	Total
Only Ditches	2.22	6.92	5.64	2.35	12.53	6.30
Trees/Grasses	40.56	26.71	61.14	51.26	39.89	42.20
Only Terraces	2.22	0.08	0.49	3.53	1.06	1.20
Ditches+Terraces		0.04	0.28	0.18	0.09	0.10
Ditches/Terraces+Grasses	52.22	65.82	27.16	25.28	42.01	43.90
Trees/Grasses+Terraces	2.78	0.43	4.81	16.99	4.41	6.10
All types			0.49	0.41		0.20

Figure 5. 6: Percentage distribution of anti-erosion activities



5.3.5 Processing and Use of Organic Fertilizer

The majority of households had a pit (65.2%) for processing organic fertilizer as a result 81.3 percent of households stated that the organic fertilizer which they used was firstly processed in a pit (See Table 5.10 and Figures 5.6 and 5.7)

Table 5.10: Distribution of pits for processing organic fertilizer and use of that fertilizer

	Kigali City	Southern Province	Western Province	Northern Province	Eastern Province	Total
Do you have a pit?						
Yes	85.7%	66.5%	59.7%	67.1%	64.8%	65.2%
No	14.3%	33.5%	40.3%	32.9%	35.2%	34.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Organic fertilizers used is firstly processed in a pit						
Yes	98.6%	86.1%	79.6%	75.7%	79.6%	81.3%
No	1.4%	13.9%	20.4%	24.3%	20.4%	18.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Figure 5.7: Distribution of pits

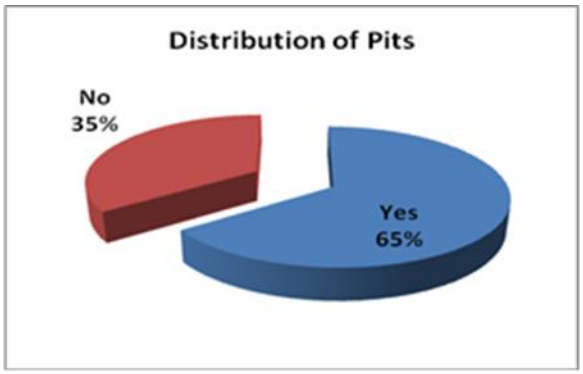
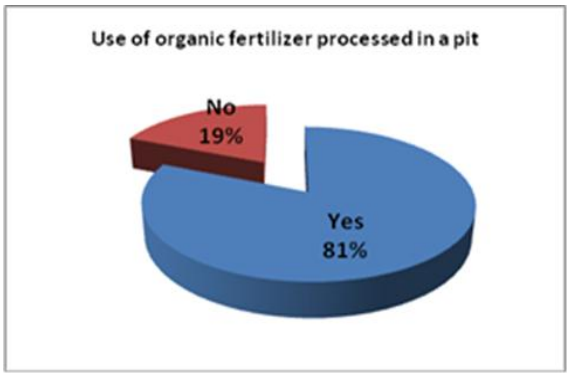


Figure 5.8: Use of organic fertilizer processed in a pit



The use of organic fertilizer by households was wide spread in the districts as follows:

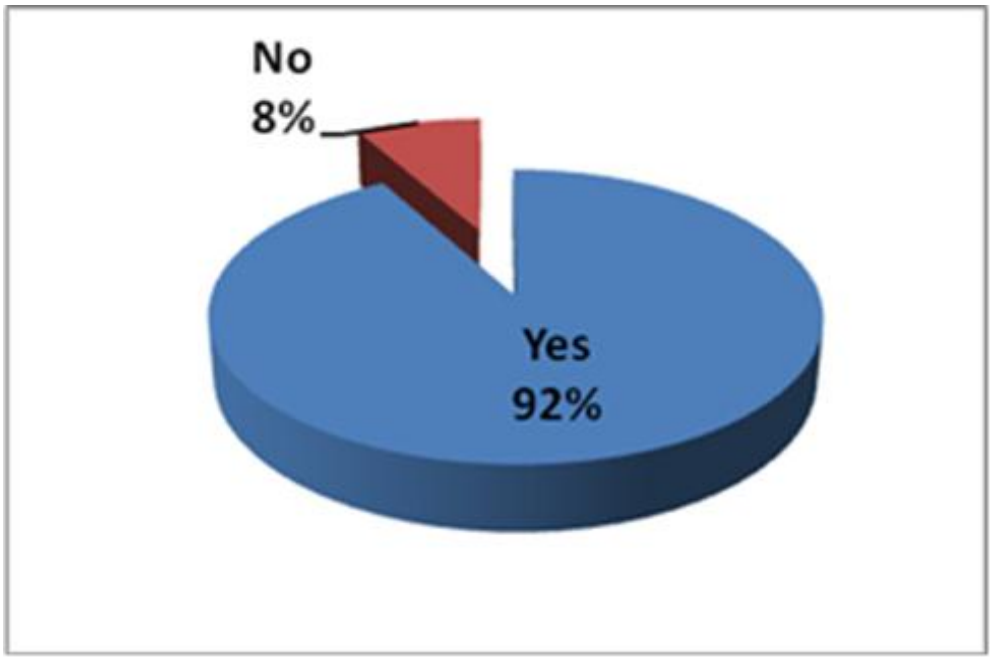
SOUTHER PROVINCE

Table 5.11: Distribution of household use of organic fertilizer in Southern Province

District	Yes	No	Total
Nyanza	88%	12%	100%
Gisagara	92%	8%	100%
Nyaruguru	100%	0%	100%
Huye	85%	15%	100%
Nyamagabe	93%	7%	100%
Ruhango	90%	10%	100%

Muhanga	99%	1%	100%
Kamonyi	90%	10%	100%
Southern Province	92%	8%	100%

Figure 5.9: Distribution of household use of organic fertilizer in Southern Province

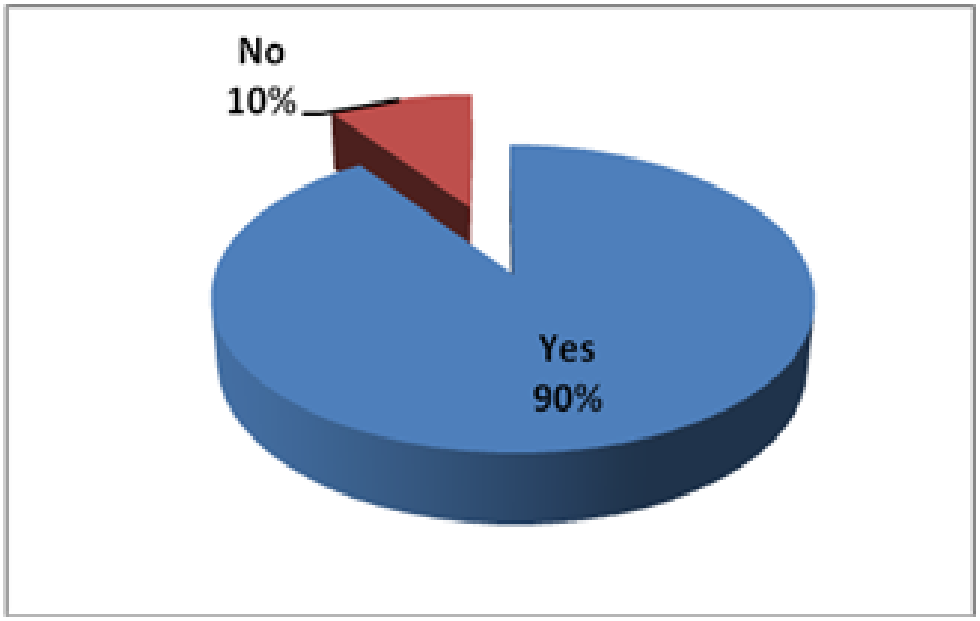


WESTERN PROVINCE

Table 5.12: Distribution of household use of organic fertilizer in Western Province

District	Yes	No	Total
Karongi	98%	2%	100%
Ngororero	93%	8%	100%
Nyabihu	93%	7%	100%
Rubavu	63%	37%	100%
Rutsiro	95%	5%	100%
Rusizi	89%	11%	100%
Nyamasheke	96%	4%	100%
Western Province	90%	10%	100%

Figure 5.10: Distribution of household use of organic fertilizer in Western Province

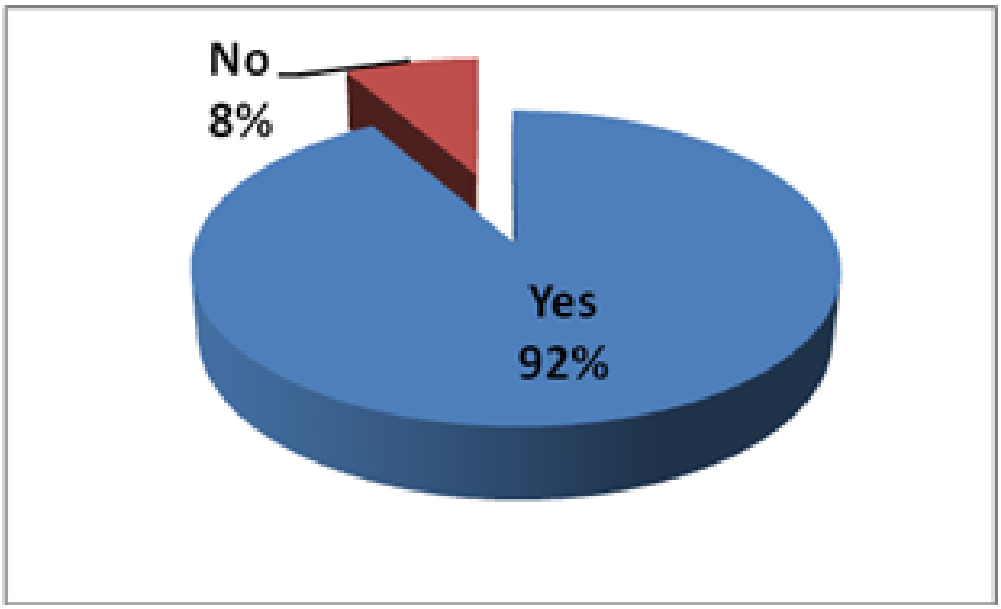


NORTHERN PROVINCE

Table 5.13: Distribution of household use of Organic fertilizer in Northern Province

District	Yes	No	Total
Rulindo	88%	12%	100%
Gakenke	99%	1%	100%
Musanze	79%	21%	100%
Burera	93%	7%	100%
Gicumbi	98%	2%	100%
Northern Province	92%	8%	100%

Figure 5.11: Distribution of household use of organic fertilizer in Northern Province

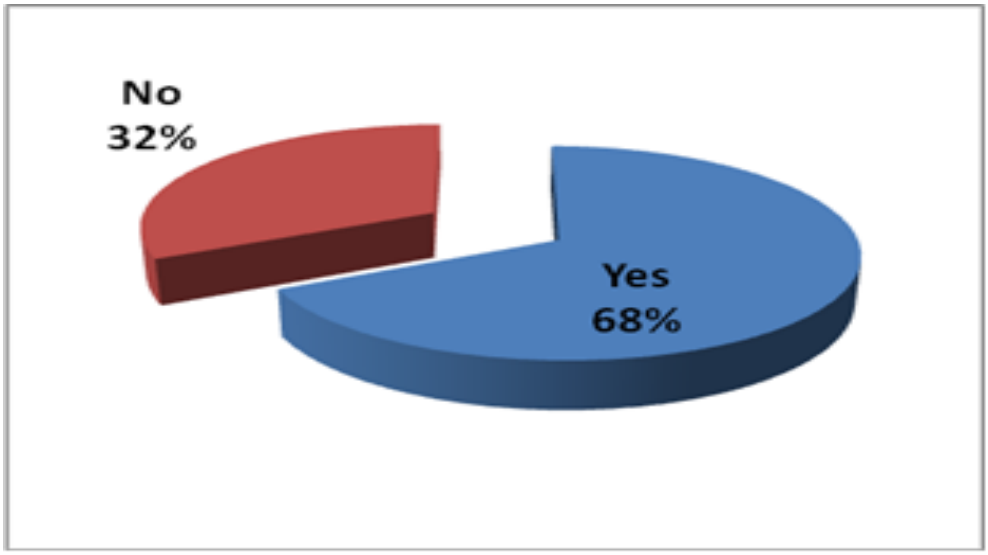


EASTERN PROVINCE

Table 5.14: Distribution of household use of organic fertilizer in Eastern Province

District	Yes	No	Total
Bugesera	76%	24%	100%
Rwamagana	68%	32%	100%
Gatsibo	77%	23%	100%
Kayonza	59%	41%	100%
Kirehe	69%	31%	100%
Ngoma	57%	43%	100%
Nyagatare	70%	30%	100%
Western Province	68%	32%	100%

Figure 5.12: Distribution of household use of organic fertilizer in Eastern Province



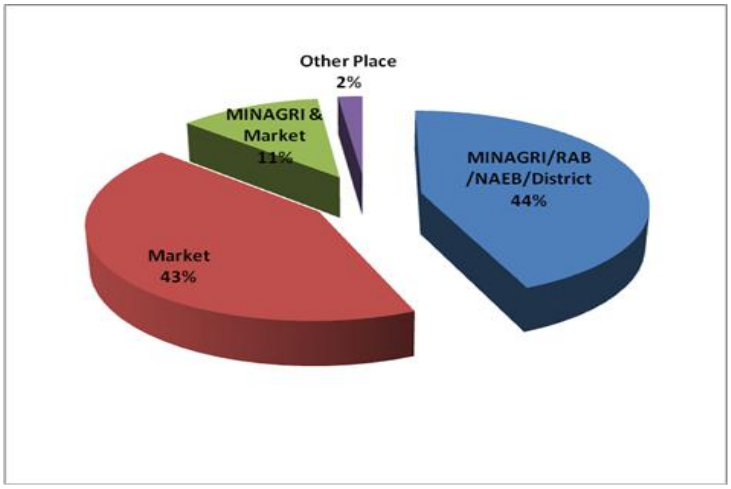
5.3.6 Use of Inorganic Fertilizer

On the main sources of inorganic fertilizer or pesticides which the households used, the following responses were given (See Table 5.15 below). Overall the source of about half of the fertilizers and pesticides was MINAGRI/RAB/NAEB/District offices (44%) and the other half was the market (43%) (See Figure 5.12 below). There were fertilizers and pesticides that were obtained solely from the market (Purin, Dursban) or MINAGRI/RAB/NAEB/Districts (Lime). Other fertilizers and pesticides were distributed at different levels between MINAGRI/RAB/NAEB/District offices and the market and households at times reported the sources to be both MINAGRI and the Market.

Table 5.15: Main source of inorganic fertilizer or pesticides

Type of inorganic fertilizer	Main source of fertilizer or pesticides that households used				Total
	MINAGRI/RAB/NAEB/District	Market	MINAGRI & Market	Other Place	
NPK	32.2%	55.2%	10.0%	2.6%	100.0%
UREA	55.6%	29.4%	12.9%	2.1%	100.0%
DAP	61.9%	19.6%	15.8%	2.7%	100.0%
Lime	100.0%				100.0%
Purin		100.0%			100.0%
Dithane	9.1%	86.9%	4.0%		100.0%
Ridomil	13.0%	82.6%	4.3%		100.0%
Dimethoate	12.8%	84.6%	2.6%		100.0%
Cypermetrine	8.1%	80.6%	9.7%	1.6%	100.0%
Dursban		60.0%	40.0%		100.0%
Other	5.0%	90.0%		5.0%	100.0%
Total	43.6%	42.9%	11.5%	2.0%	100.0%

Figure 5.13: Main source of inorganic fertilizers and pesticides



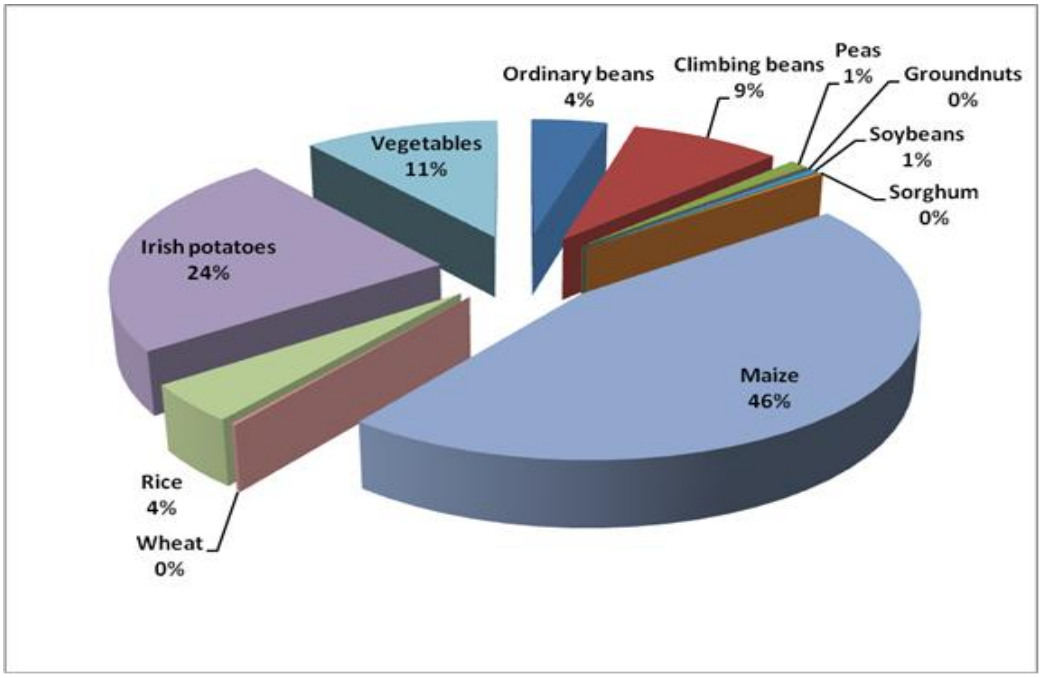
5.3.7. Type of inorganic fertilizers and pesticides and main crops they were applied

Types of fertilizers and pesticides that were used during the season and for which crops are given in Table 5.16 below and Figure 5.13.Overall about 95 percent of the fertilizer and pesticides use was on the following crops: Maize (45.5%), Irish potatoes (23.9%), Climbing beans (8.5%), Tomatoes (5.3%), Rice (4.4%), Ordinary beans (4.3%) and eggplant (2.7%).

Table 5.16: Main crops on which inorganic fertilizers and pesticides were used

Crops	NPK	UREA	DAP	LIME	PURIN	DITHANE	RIDOMIL	DIMETHOATE	CYPERMETRINE	**DUSBAN**	**OTHER**	**Total**
Ordinary beans	2.5%	4.9%	6.7%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	**0.0%**	**0.0%**	**4.3%**
Climbing beans	5.1%	6.6%	13.6%	50.0%		0.5%		7.9%	22.7%		**9.1%**	**8.5%**
Peas	2.5%	0.7%	0.9%			0.5%		2.6%		**33.3%**	**0.0%**	**1.1%**
Groundnuts											**4.5%**	**0.1%**
Soybeans		0.6%	0.9%								**0.0%**	**0.5%**
Sorghum										**16.7%**	**0.0%**	**0.2%**
Maize	25.4%	61.2%	61.5%	50.0%			1.4%		18.7%	**16.7%**	**9.1%**	**45.5%**
Wheat	0.0%	0.1%	0.4%								**0.0%**	**0.2%**
Rice	9.8%	5.0%	2.5%					5.3%	9.3%		**4.5%**	**4.4%**
Irish potatoes	40.9%	12.8%	9.9%		100.0%	67.9%	75.7%	34.2%	28.0%	**16.7%**	**31.8%**	**23.9%**
Spinach		0.1%									**0.0%**	**0.0%**
Celery		0.1%									**0.0%**	**0.0%**
Amarant	0.4%	0.3%	0.3%								**0.0%**	**0.2%**
Egg plant	5.1%	2.6%	1.0%			4.3%	1.4%	7.9%	4.0%		**4.5%**	**2.7%**
White Cabbage	0.7%	0.8%	0.3%			1.6%	1.4%		5.3%		**0.0%**	**0.9%**
Flower Cabbage		0.1%				0.5%					**0.0%**	**0.1%**
Onion	0.7%	0.3%	0.3%			1.1%	1.4%	2.6%	1.3%		**0.0%**	**0.5%**
Tomato	4.3%	2.6%	0.9%			18.7%	14.3%	34.2%	10.7%	**16.7%**	**27.3%**	**5.3%**
Green pepper	1.8%	0.4%	0.3%			1.6%					**9.1%**	**0.7%**
Carrot	0.4%	0.1%				2.7%	4.3%	5.3%			**0.0%**	**0.6%**
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	**100%**	**100.0%**	**100.0%**

Figure 5.14: Main crops on which inorganic fertilizers and pesticides were used



5.3.8 Use of inorganic fertilizers and pesticides in the districts

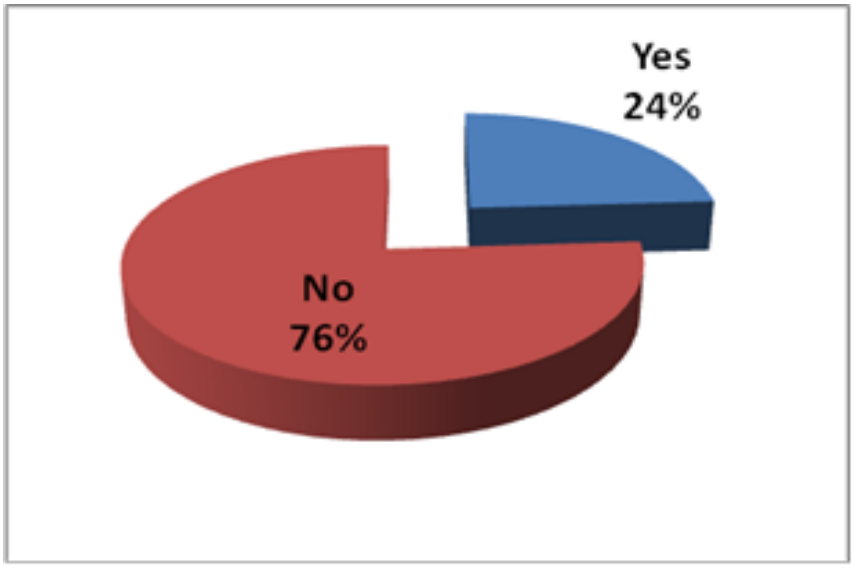
The use of inorganic fertilizer by households was wide spread in the districts of the provinces as follows:

SOUTHERN PROVINCE

Table 5.17: Distribution of household use of inorganic fertilizer in Southern Province

District	Yes	No	Total
Nyanza	7%	93%	100%
Gisagara	23%	77%	100%
Nyaruguru	50%	50%	100%
Huye	27%	73%	100%
Nyamagabe	40%	60%	100%
Ruhango	10%	90%	100%
Muhanga	15%	85%	100%
Kamonyi	10%	90%	100%
Total	24%	76%	100%

Figure 5.15: Distribution of household use of inorganic fertilizers in Southern Province

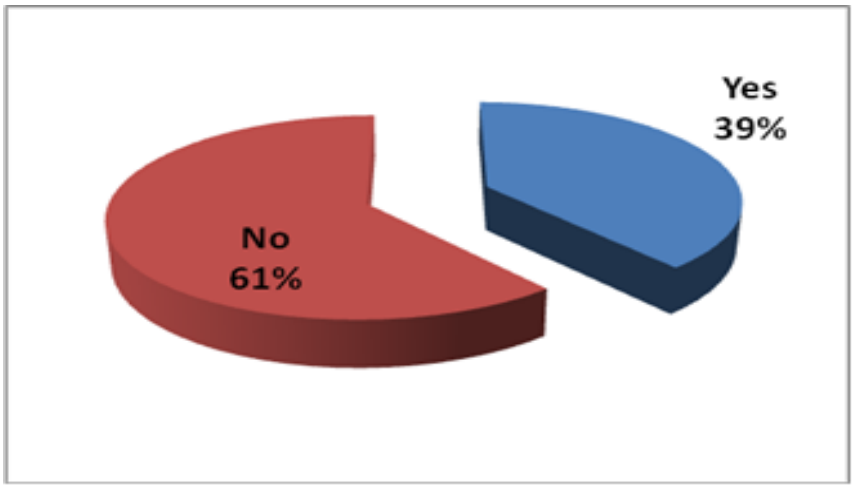


WESTERN PROVINCE

Table 5.18: Distribution of household use of inorganic fertilizer in Western Province

Districts	Yes	No	Total
Karongi	36%	64%	100%
Ngororero	23%	77%	100%
Nyabihu	40%	60%	100%
Rubavu	39%	61%	100%
Rutsiro	40%	60%	100%
Rusizi	43%	57%	100%
Nyamasheke	51%	49%	100%
Total	39%	61%	100%

Figure 5.16: Distribution of household use of inorganic fertilizers in Western Province

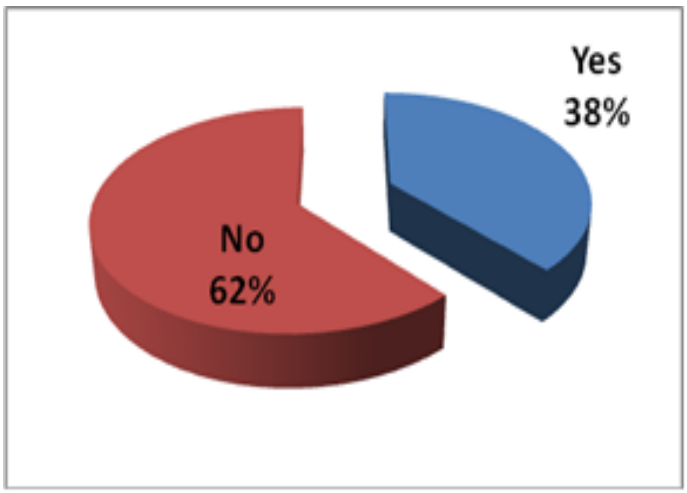


NORTHERN PROVINCE

Table 5.19: Distribution of household use of inorganic fertilizer in Northern Province

District	Yes	No	Total
Rulindo	26%	74%	100%
Gakenke	55%	45%	100%
Musanze	71%	29%	100%
Burera	33%	67%	100%
Gicumbi	12%	88%	100%
Total	38%	62%	100%

Figure 5.17: Distribution of household use of inorganic fertilizers in Northern Province

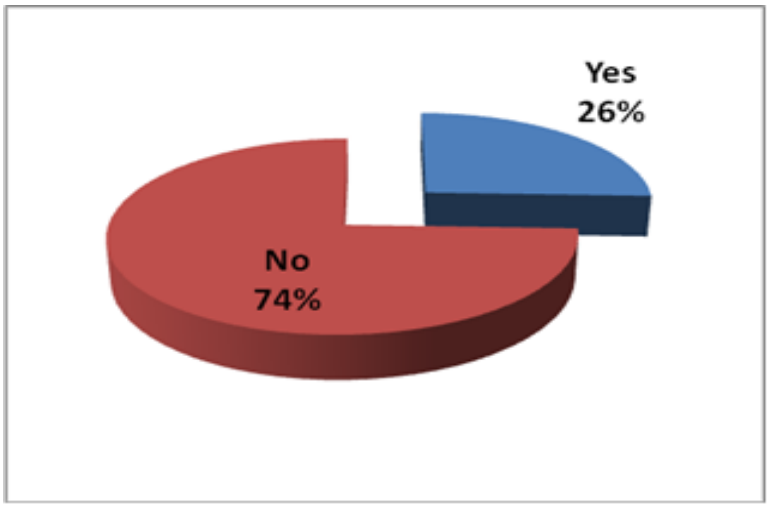


EASTERN PROVINCE

Table 5.20: Distribution of household use of inorganic in Eastern Province

Districts	Yes	No	Total
Bugesera	19%	81%	100%
Rwamagana	20%	80%	100%
Gatsibo	8%	92%	100%
Kayonza	17%	83%	100%
Kirehe	66%	34%	100%
Ngoma	34%	66%	100%
Nyagatare	10%	90%	100%
Total	26%	74%	100%

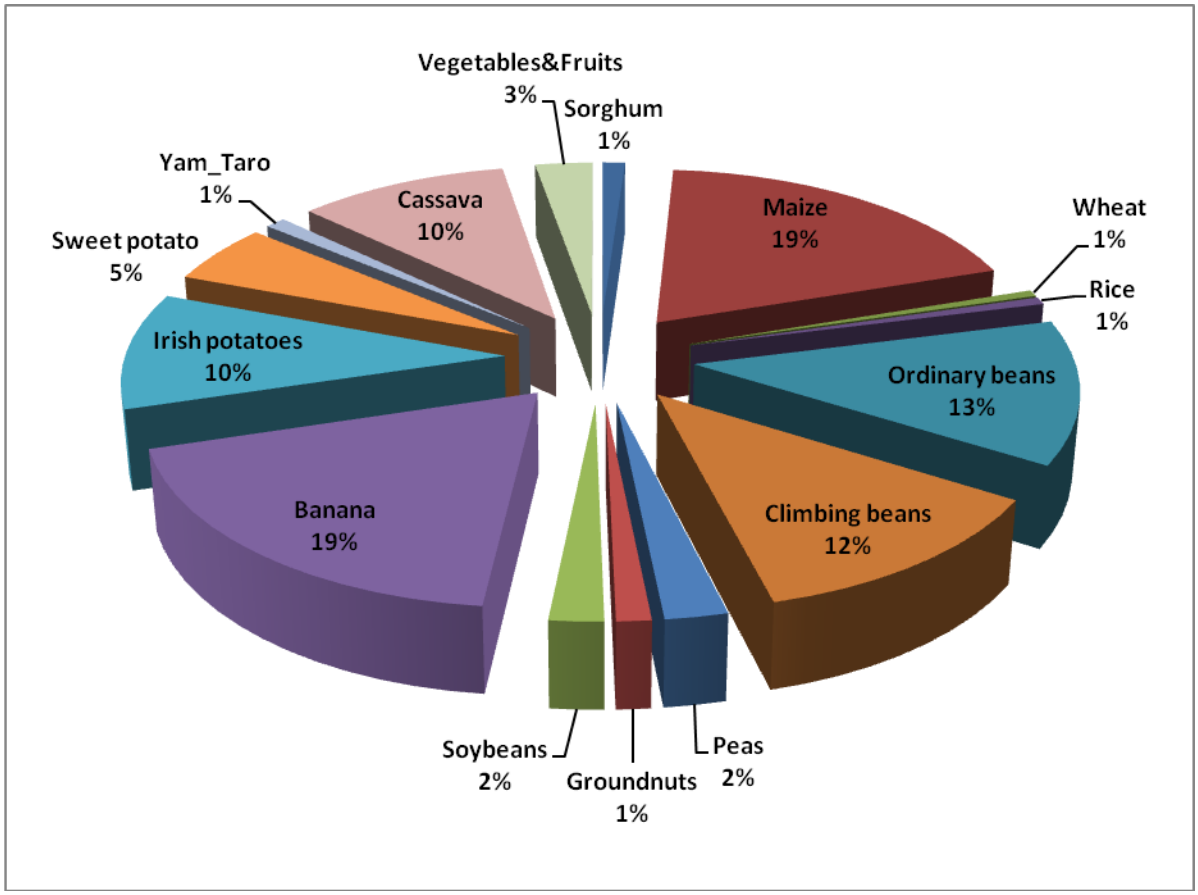
Figure 5.18: Distribution of household use of inorganic fertilizers in Eastern Province



5.3.9 Seasonal Crops Grown by Households

The distribution of seasonal crops grown by farmers in Rwanda is given in Figure 5.18 below.

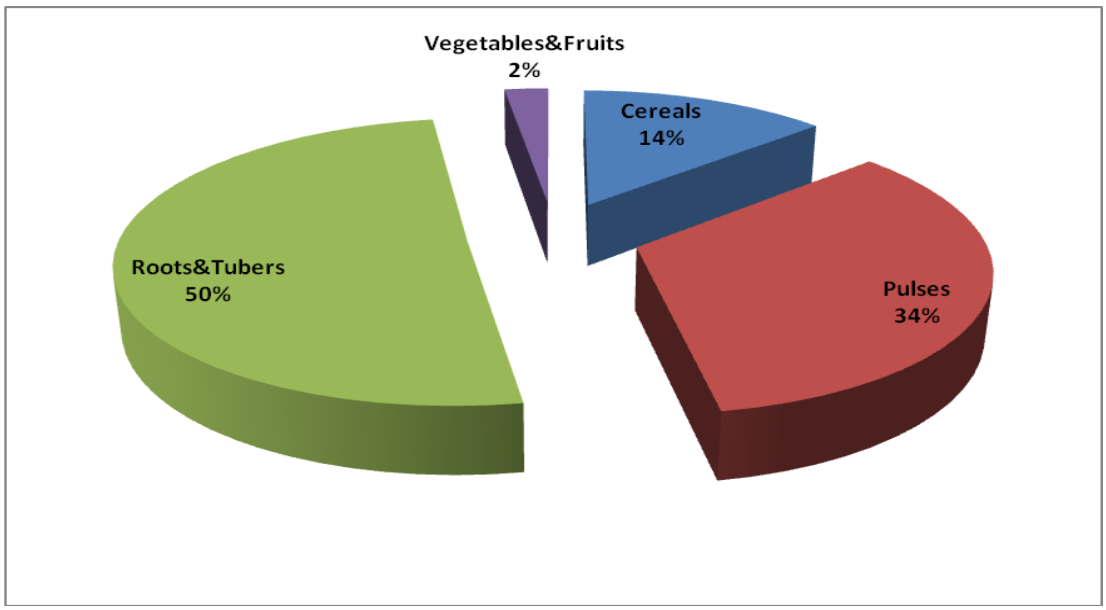
Figure 5. 19: Percentage distribution of seasonal crops in Rwanda



It is clear from the above that, although the main crops grown in each district are different, overall the main crops grown by farmers in Rwanda are: Maize (19%), Banana (19%), Ordinary beans (13%), Climbing beans (12%), Irish potatoes (10%), Cassava (10%), and Sweet potatoes (5%).

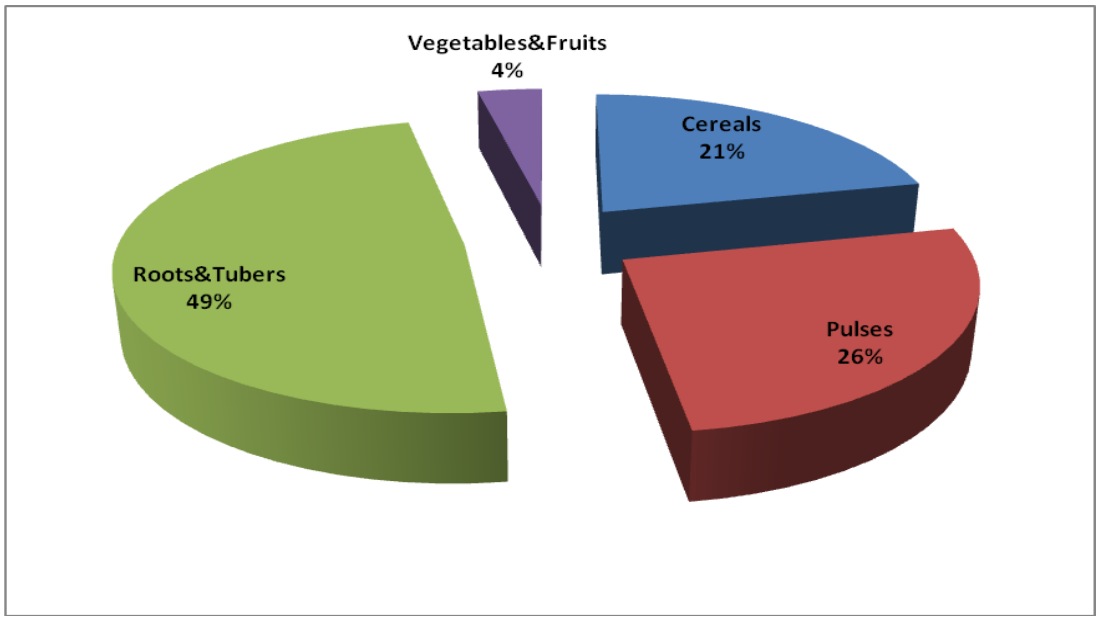
Annex Tables A.1-A.4 give the percentage distribution of seasonal crops in each province. The percentage distribution of main groups of crops grown in each province is given in the Figures 5.19-5.21 below:

Figure 5.20: Percentage distribution of seasonal crops in Southern Province



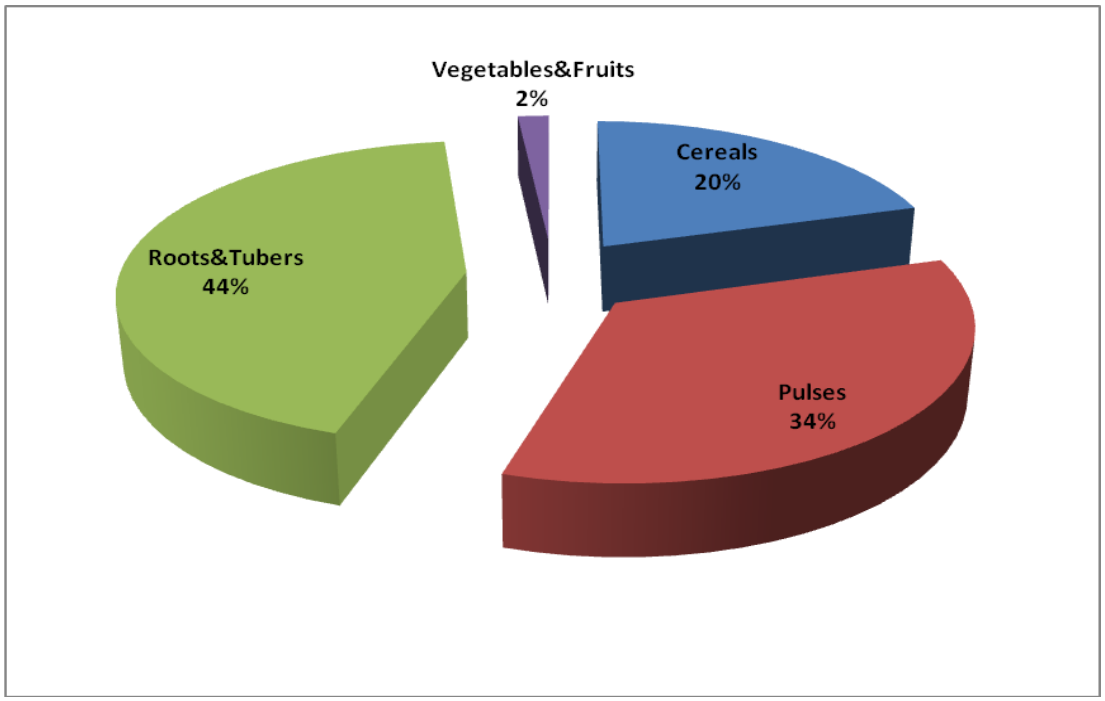
The main crops grown in Southern Province are: Ordinary beans (17%), Maize (15%), climbing beans (13%), Sweet potatoes (11%), Irish potatoes (10%), peas (9%), Soybeans (7%), Yams (7%) and Vegetables (4%).

Figure 5.21: Percentage distribution of seasonal crops in Western Province



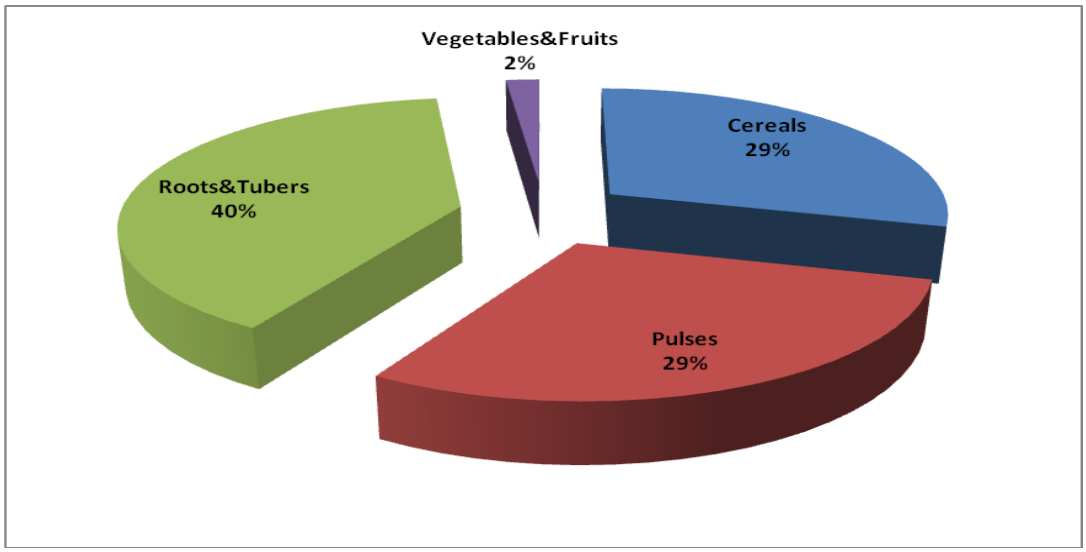
The main crops grown in Southern Province are: Climbing beans (23%), Maize (21%), Ordinary beans (10%), Sweet potatoes (10%), Irish potatoes (10%), Yams (6%), Peas (6%), Vegetables (6%) and Soybeans (4%).

Figure 5.22: Percentage distribution of seasonal crops in Northern Province



The main crops grown in Northern Province are: Climbing beans (30%), Maize (20%), Sweet potatoes (12%), Ordinary beans (11%), Irish potatoes (10%), Peas (4%), Vegetables (4%) and Yams (4%).

Figure 5.23: Percentage distribution of seasonal crops in Eastern Province



The main crops grown in Eastern Province are: Ordinary beans (26%), Maize (24%), Irish potatoes (10%), Groundnuts (8%), Sweet potatoes (7%), %), Climbing beans (5%), Peas (4%), Vegetables (4%), Yams (3%), Soybeans (4%), and Sorghum (3%).

5.3.10 Assessment of rainfall by households and expected level of damage due to too much rainfall, drought, and other diseases

Households were asked how well the rain was falling. Table 5.21 below gives the responses given by the households.

Table 5.21: Household perception on the rainfall situation

Household response	Province					Total
	Kigali	Southern	Western	Northern	Eastern	
Good	56.1%	52.1%	52.1%	36.2%	78.3%	55.2%
Bad	43.9%	47.9%	47.9%	63.8%	21.7%	44.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

5.3.11 Expected Date of Harvesting

Households were asked to indicate their expected date of harvesting. Table 5.24 below gives the results of the responses. A quarter of the households (25.2) stated that they already finished harvesting, about 25 percent stated they would be harvesting after 28 February 2012, 6 percent of the households would

be harvesting by the end of January 2012 and the majority of households (44%) indicated that they would be harvesting at the end of February 2012.

Table 5.22: Expected date of harvesting

Expected date of harvesting	Province					Total
	Kigali	Southern	Western	Northern	Eastern	
Finished to harvest	28.4%	23.9%	28.1%	24.1%	24.2%	25.2%
31/12/11	10.5%	5.4%	6.5%	4.7%	5.8%	5.8%
28/02/12	36.8%	46.5%	40.4%	42.3%	47.0%	44.1%
After 28/02/12	24.3%	24.2%	24.9%	28.9%	23.0%	24.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

5.3.12 Households assessment of the yield or expected yield

Table 5.25 below gives results on adequacy of the yield or expected yield for 2012A Season. Most of the households (59.8%) indicated that their yield would either be on average (41.1%) or above average (18.7%). About 40.2 percent stated that they expected yield to be below average (Little).

Table 5.23: Households assessment on the yield or expected yield

Yield or expected yield	Province					Total
	Kigali	Southern	Western	Northern	Eastern	
Above average	12.0%	18.1%	16.2%	15.5%	26.2%	18.7%
On average	36.9%	45.1%	43.8%	47.7%	27.2%	41.1%
Little	51.1%	36.8%	40.0%	36.8%	46.6%	40.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

ANNEX

Table A.1: Percentage distribution of seasonal crops grown in Southern Province districts

Seasonal crops	District								Southern Province
	Nyanza	Gisagara	Nyaruguru	Huye	Nyamagabe	Ruhango	Muhanga	Kamonyi	
Ordinary beans	17.3%	18.3%	9.1%	17.2%	16.7%	16.8%	14.4%	21.2%	16.6%
Climbing beans	9.7%	5.8%	21.6%	10.9%	18.6%	15.7%	20.8%	10.0%	13.2%
Peas	7.1%	5.5%	12.7%	9.8%	14.2%	11.3%	4.8%	8.8%	9.1%
Groundnuts	2.5%	4.0%		3.0%		4.5%		6.7%	2.8%
Soybeans	6.0%	6.7%	6.2%	7.9%	2.9%	9.2%	10.9%	9.5%	7.3%
Sorghum	.9%								.1%
Maize	16.8%	14.1%	15.8%	17.0%	15.9%	10.2%	10.9%	17.2%	14.9%
Wheat			.3%						.0%
Rice	.7%	1.8%		1.6%		.8%			.7%
Sunflower	2.1%	4.9%		2.3%		1.0%	.6%		1.7%
Inkoli	.2%	1.1%		1.2%	.2%				.4%
Irish potatoes	12.2%	7.7%	15.3%	11.4%	12.5%	12.1%	2.6%	9.3%	10.4%
Sweet potato	8.8%	8.1%	13.2%	8.6%	12.7%	11.3%	16.7%	9.1%	10.6%
Yam	7.1%	10.9%	4.4%	6.7%	4.2%	5.8%	10.9%	4.9%	7.1%
Taro	2.1%	1.1%		.2%				.7%	.6%
Spinach		.3%			.2%				.1%
Leek	.2%	.9%							.2%
Pepper	.7%	.2%							.1%
Celery		.2%							.0%
Amarant		1.1%	.3%	.7%	.2%		.6%		.4%
Green beans		.5%					.3%		.1%
Egg plant	1.8%	1.8%		.5%	.5%		1.9%	.7%	1.0%
White Cabbage	.5%	.5%	1.0%	.2%	.2%	.8%	1.0%		.5%
Flower Cabbage							.6%		.1%
Onion	.2%	.6%			.2%	.3%	.6%		.3%
Tomato	.2%	.8%					1.0%	1.9%	.5%
Green pepper							.3%		.0%
Carrot	.2%			.7%	.2%	.3%	.6%		.2%
Beetroot/Sugar beet							.3%		.0%
Marrow	2.3%	1.7%			.2%				.6%
Cassava leaves	.2%	1.2%							.3%
Other vegetables		.3%							.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table A.2: Percentage distribution of seasonal crops grown in Western Province districts

Seasonal Crops	District							Western Province
	Karongi	Ngororero	Nyabihu	Rubavu	Rutsiro	Rusizi	Nyamasheke	
Ordinary beans	17.2%	5.7%	.9%		2.9%	24.4%	15.9%	10.1%
Climbing beans	24.6%	26.5%	23.4%	48.2%	33.9%	5.9%	16.9%	23.2%
Peas	10.7%	6.9%	14.7%	.6%	5.0%	2.2%	2.4%	6.4%
Groundnuts			.2%			.3%	1.3%	.4%
Soybeans	4.1%	2.9%	.2%		3.6%	5.6%	8.1%	3.9%
Sorghum		1.7%	3.7%				.2%	1.0%
Maize	23.4%	17.4%	20.7%	16.5%	26.4%	25.3%	18.2%	20.8%
Wheat	.4%	.2%	4.1%					.8%
Rice						3.4%	.9%	.7%
Inkoli					.4%			.0%
Irish potatoes	9.4%	9.1%	16.3%	17.6%	7.9%	10.8%	4.3%	10.1%
Sweet potato	1.6%	16.7%	12.4%	5.9%	12.1%	.6%	12.7%	10.0%
Yam	5.7%	9.1%	.2%	1.2%	5.0%	5.6%	10.1%	5.8%
Taro						.3%	2.1%	.5%
Zucchini			.5%				.2%	.1%
Leek				.6%		.3%	.2%	.1%
Pepper		.2%					.2%	.1%
Celery		.2%						.0%
Parsley	.4%							.0%
Amarant			.2%			4.3%	.6%	.8%
Egg plant	.8%	1.2%		2.4%	.7%	3.1%	1.5%	1.3%
White Cabbage	.4%	1.0%	.7%		.7%	.3%	1.5%	.8%
Onion	.4%			1.2%	.7%		.2%	.3%
Tomato		.5%		1.2%	.4%	.9%	.7%	.5%
Carrot	.4%			2.9%				.3%
Beetroot/Sugar beet	.4%							.0%
Allium				1.8%				.1%
Marrow		.5%	.2%			6.2%	1.7%	1.3%
Cassava leaves					.4%	.3%		.1%
Other vegetables			1.4%			.3%	.2%	.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table A.3: Percentage distribution of seasonal crops grown in Northern Province districts

Seasonal crops	District					Northern Province
	Rulindo	Gakenke	Musanze	Burera	Gicumbi	
Ordinary beans	20.6%	10.6%		4.7%	10.2%	10.8%
Climbing beans	26.8%	28.3%	41.2%	30.7%	29.3%	30.2%
Peas	3.3%	1.6%	.5%	8.3%	6.5%	4.3%
Groundnuts	.2%	.9%			.9%	.4%
Soybeans	1.5%	2.2%			2.5%	1.3%
Sorghum			.5%	4.4%		1.0%
Maize	11.6%	25.5%	33.2%	24.6%	15.7%	20.5%
Wheat	.2%			3.3%	.9%	.9%
Sunflower		.3%				.1%
Inkoli	2.1%					.6%
Irish potatoes	7.7%	1.9%	10.4%	15.7%	14.8%	10.0%
Sweet potato	14.3%	19.0%	8.5%	7.2%	11.4%	12.4%
Yam	4.0%	8.1%	2.8%	.6%	2.8%	3.6%
Eleusine		.3%			.3%	.1%
Spinach				.3%		.1%
Leek	.2%					.1%
Green beans					.3%	.1%
Egg plant	2.1%	1.2%	.9%		2.2%	1.4%
White Cabbage	1.5%		.5%		1.2%	.7%
Onion	1.0%					.3%
Tomato	1.2%		1.4%			.5%
Green pepper	.2%					.1%
Carrot	.6%					.2%
Beetroot/Sugar beet	.2%					.1%
Marrow				.3%	.6%	.2%
Cassava leaves	.2%				.3%	.1%
Other vegetables	.4%					.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table A.4: Percentage distribution of seasonal crops grown in Eastern Province districts

Seasonal crops	District							Eastern Province
	Bugesera	Rwamagana	Gatsibo	Kayonza	Kirehe	Ngoma	Nyagatare	
Ordinary beans	21.0%	21.7%	26.1%	29.9%	30.9%	30.2%	25.0%	26.2%
Climbing beans	3.2%	3.1%	4.7%	1.0%	6.1%	13.2%	4.5%	4.9%
Peas	2.3%	5.0%	6.5%	6.6%	1.4%	1.1%	2.4%	3.7%
Groundnuts	9.4%	7.1%	7.9%	3.3%	9.4%	8.3%	13.6%	8.5%
Soybeans	4.2%	5.9%	3.8%	3.3%	1.8%	.4%	5.1%	3.6%
Sorghum	2.9%		6.2%		.4%		9.0%	2.8%
Maize	23.6%	21.7%	20.8%	21.1%	33.8%	23.4%	22.3%	23.6%
Rice	2.3%		.3%		1.1%	2.3%		.8%
Sunflower	1.9%	2.5%	1.8%	4.3%		2.6%		1.9%
Inkoli	.6%	.6%					.6%	.3%
Irish potatoes	7.1%	16.8%	8.5%	14.8%	10.1%	12.1%	3.0%	10.2%
Sweet potato	9.4%	4.7%	7.0%	7.9%	4.3%	3.0%	10.2%	6.8%
Yam	5.2%	5.3%	3.5%	3.0%		1.5%	1.5%	2.9%
Eleusine							1.5%	.2%
Taro	2.9%							.4%
Leek						.8%		.1%
Pepper	.3%			.3%				.1%
Amarant	.3%	2.2%				.4%		.4%
Egg plant	1.0%	.3%		1.3%				.4%
White Cabbage		.3%	.3%	.7%				.2%
Onion		.3%	1.2%	.3%	.7%		.6%	.5%
Tomato	1.3%	1.2%	1.5%	1.3%			.6%	.9%
Green pepper	.3%							.0%
Carrot						.4%		.0%
Marrow	.3%	1.2%		1.0%		.4%		.4%
Ibiringanya	.3%							.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table A.5: Estimated share of area under crops by Districts

CROP	Nyanza	Gisagara	Nyaruguru	Huye	Nyamagabe	Ruhango	Muhanga	Kamonyi	Karongi	Ngororero	Nyabihu	Rubavu	Rutsiro	Rusizi	Nyamasheke	Rulindo
Sorghum	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	2.5%	0.0%	0.0%	0.0%	0.0%	0.1%
Maize	16.5%	13.0%	14.6%	16.4%	15.7%	9.0%	8.4%	11.7%	15.6%	15.0%	22.4%	19.9%	27.3%	20.6%	10.9%	11.1%
Wheat	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.9%	0.0%	5.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Rice	0.0%	2.1%	0.0%	1.4%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.8%	0.8%	0.0%
Ordinary beans	21.8%	22.5%	6.8%	17.8%	7.7%	14.6%	8.6%	20.1%	11.6%	3.2%	0.1%	0.0%	2.0%	20.4%	11.6%	18.6%
Climbing beans	6.3%	3.1%	14.7%	6.2%	16.4%	10.4%	14.6%	5.9%	18.5%	24.0%	16.6%	21.7%	15.1%	1.5%	11.2%	27.2%
Peas	3.3%	1.2%	2.9%	1.7%	6.2%	1.4%	0.9%	2.3%	3.6%	1.3%	6.9%	0.7%	1.3%	0.5%	0.7%	3.5%
Groundnuts	2.0%	2.2%	0.0%	2.1%	0.0%	6.2%	0.0%	3.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	0.1%
Soybeans	1.7%	3.9%	4.5%	6.3%	1.8%	4.0%	4.7%	5.1%	1.2%	1.1%	0.0%	0.0%	1.5%	2.5%	4.1%	1.2%
Banana	15.0%	18.2%	13.5%	20.8%	20.0%	20.1%	31.8%	19.7%	23.4%	16.4%	8.0%	6.6%	21.7%	21.8%	29.5%	14.9%
Irish potatoes	8.3%	4.4%	18.5%	7.2%	7.8%	6.6%	0.6%	5.7%	2.9%	16.1%	24.9%	40.0%	13.5%	3.8%	1.9%	5.4%
Sweet potato	5.2%	7.7%	12.9%	3.1%	7.2%	3.9%	6.0%	2.8%	5.3%	8.0%	9.3%	3.6%	8.2%	0.2%	7.7%	8.5%
Yam	0.2%	0.3%	0.6%	0.0%	0.9%	0.3%	1.0%	0.9%	1.0%	1.0%	0.4%	0.0%	2.3%	1.3%	0.4%	1.4%
Taro	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.2%	0.0%
Cassava	15.9%	16.4%	9.6%	14.6%	14.6%	21.8%	20.5%	17.4%	14.9%	10.0%	2.5%	0.1%	3.8%	13.4%	17.3%	4.7%
Sunflower	0.2%	2.7%	0.0%	0.6%	0.0%	0.1%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Spinach	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Leek	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Amarant	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	0.1%	0.0%
Egg plant	0.8%	0.7%	0.0%	0.2%	0.1%	0.0%	0.1%	1.1%	0.1%	0.2%	0.0%	1.1%	0.4%	2.2%	0.2%	0.4%
White Cabbage	0.1%	0.1%	0.3%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.4%	0.1%	0.0%	0.1%	0.0%	0.4%	0.2%
Onion	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.7%	0.0%	0.0%	0.3%
Tomato	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	1.0%	2.2%	0.0%	0.3%	0.0%	0.3%	1.0%	1.2%	0.6%	0.2%
Green pepper	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Carrot	0.1%	0.0%	0.0%	0.3%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%
Pumpkin	1.2%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.5%	0.1%	0.0%
Other vegetables	0.2%	0.1%	0.0%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	1.1%	0.0%	2.6%	0.0%	0.0%	0.0%	1.0%
Fruits	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Table A.6: Estimated share of area under crops by Districts (Cont'd)

CROP	Gakenke	Musanze	Burera	Gicumbi	Bugesera	Rwamagana	Gatsibo	Kayonza	Kirehe	Ngoma	Nyagatare	Kigali	National
Sorghum	0.1%	0.5%	2.1%	0.0%	1.9%	0.0%	5.5%	0.0%	0.1%	0.2%	13.5%	0.1%	1.1%
Maize	26.2%	20.4%	20.6%	12.6%	14.7%	16.3%	26.5%	10.8%	37.6%	20.9%	37.3%	13.7%	18.8%
Wheat	0.0%	0.0%	4.0%	2.5%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.6%
Rice	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.3%	3.6%	0.0%	0.0%	0.7%
Ordinary beans	8.6%	0.0%	2.9%	10.4%	24.2%	24.4%	17.6%	31.0%	16.3%	19.3%	14.4%	41.8%	12.7%
Climbing beans	23.1%	19.9%	19.3%	20.3%	0.7%	1.2%	2.1%	1.0%	4.2%	9.4%	0.4%	2.0%	12.2%
Peas	0.4%	1.2%	10.4%	3.7%	0.7%	0.5%	2.2%	4.2%	0.3%	0.1%	0.4%	1.7%	2.3%
Groundnuts	0.3%	0.0%	0.0%	0.1%	5.3%	3.5%	2.6%	0.8%	3.5%	3.7%	1.2%	1.0%	1.3%
Soybeans	1.5%	0.0%	0.1%	0.8%	1.7%	6.8%	1.1%	0.7%	0.3%	0.2%	1.8%	4.8%	2.0%
Banana	19.7%	13.4%	11.0%	13.6%	15.7%	28.8%	25.7%	30.0%	24.4%	21.1%	13.0%	12.2%	18.7%
Irish potatoes	1.4%	30.0%	20.3%	20.4%	3.8%	3.1%	4.3%	4.2%	4.0%	3.0%	1.6%	3.2%	10.3%
Sweet potato	10.7%	3.9%	4.1%	8.1%	4.4%	2.1%	2.5%	1.2%	1.2%	0.6%	2.6%	4.0%	5.3%
Yam	3.7%	1.1%	0.1%	0.4%	1.6%	2.7%	0.7%	0.5%	0.2%	0.3%	0.2%	3.1%	0.9%
Taro	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	0.1%
Cassava	3.1%	7.9%	4.0%	5.7%	19.7%	7.4%	7.1%	10.9%	5.7%	15.7%	11.5%	3.3%	10.2%
Sunflower	0.0%	0.0%	0.0%	0.0%	0.6%	1.7%	0.6%	1.2%	0.0%	0.8%	0.0%	0.3%	0.3%
Spinach	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Leek	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Amarant	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Egg plant	0.1%	0.2%	0.0%	0.2%	0.4%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.5%	0.3%
White Cabbage	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	0.1%
Onion	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%	0.9%	0.8%	0.0%	0.1%	0.1%	0.2%
Tomato	0.0%	0.5%	0.0%	0.0%	0.2%	0.1%	0.3%	0.9%	0.0%	0.0%	0.9%	1.9%	0.4%
Green pepper	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Carrot	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.1%
Pumpkin	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%
Other vegetables	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	0.3%
Fruits	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Table A.7: Estimated area under crops by district (Ha)

CROP	Nyanza	Gisagara	Nyarugur u	Huye	Nyamagabe	Ruhango	Muhanga	Kamonyi	Karongi	Ngororero	Nyabihu	Rubavu	Rutsiro	Rusizi	Nyamashe ke	Rulindo
Sorghum	-	1	-	-	-	-	-	-	-	338	1 053	-	-	-	3	32
Maize	3 597	3 660	3 615	4 598	4 306	2 523	2 439	3 429	5 747	6 492	9 586	7 989	9 959	7 488	3 578	3 435
Wheat	-	-	15	-	24	-	-	-	326	-	2 168	-	-	-	-	-
Rice	-	584	-	380	-	84	-	-	-	-	-	-	-	2 847	256	-
Ordinary beans	4 764	6 356	1 689	4 990	2 105	4 092	2 505	5 910	4 260	1 397	29	-	742	7 433	3 783	5 735
Climbing beans	1 374	875	3 635	1 749	4 497	2 928	4 230	1 742	6 801	10 422	7 123	8 683	5 511	562	3 659	8 402
Peas	731	336	711	482	1 697	393	250	671	1 337	564	2 955	280	468	165	245	1 076
Groundnuts	442	630	-	599	-	1 755	-	1 063	-	-	-	-	-	10	419	20
Soybeans	380	1 106	1 120	1 782	487	1 130	1 357	1 496	445	469	-	-	560	904	1 358	379
Banana	3 288	5 138	3 340	5 834	5 506	5 659	9 223	5 800	8 614	7 129	3 452	2 628	7 906	7 915	9 659	4 598
Irish potatoes	1 803	1 238	4 557	2 029	2 151	1 862	177	1 665	1 069	7 010	10 668	16 043	4 937	1 374	621	1 675
Sweet potato	1 138	2 164	3 189	871	1 972	1 087	1 751	824	1 966	3 462	3 991	1 457	2 996	90	2 531	2 631
Yam	40	89	143	9	242	85	278	271	381	450	153	13	838	462	131	417
Taro	1	-	9	0	-	-	-	31	-	-	62	-	-	0	60	-
Cassava	3 481	4 645	2 358	4 095	4 017	6 129	5 949	5 132	5 469	4 330	1 083	47	1 388	4 883	5 657	1 447
Sunflower	54	758	-	158	-	15	52	79	-	-	-	-	-	-	-	-
Spinach	-	11	-	-	121	-	-	-	-	-	48	-	-	-	-	-
Leek	2	4	-	-	-	-	-	-	-	-	-	26	-	5	2	-
Amarant	-	19	-	18	-	-	10	5	-	9	1	-	-	395	29	-
Egg plant	166	186	-	59	24	-	38	332	42	96	-	433	161	807	49	129
White Cabbage	22	28	62	11	10	42	36	-	2	158	62	-	26	16	118	76
Onion	-	25	-	-	2	17	3	-	0	-	-	295	247	-	-	108
Tomato	-	41	-	-	-	-	291	649	-	122	-	103	378	441	206	73
Green pepper	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	16
Carrot	29	-	-	83	0	11	50	-	0	-	-	664	-	-	-	13
Pumpkin	273	57	-	-	25	-	-	13	-	67	6	-	-	193	40	-
Other vegetables	54	26	-	67	11	-	37	10	0	471	19	1 037	14	4	5	317
Fruit	216	280	244	278	272	278	287	291	365	430	425	397	361	360	324	306
TOTAL	**21 856**	**28 258**	**24 687**	**28 092**	**27 469**	**28 091**	**28 980**	**29 412**	**36 824**	**43 415**	**42 883**	**40 096**	**36 493**	**36 355**	**32 734**	**30 886**

Table A.8: Estimated area under crops by district (Ha) (cont'd)

CROP	Gakenke	Musanze	Burera	Gicumbi	Bugesera	Rwamagana	Gatsibo	Kayonza	Kirehe	Ngoma	Nyagatare	Kigali	National
Sorghum	47	176	769	-	537	-	1 812	-	49	72	4 923	16	9 827
Maize	10 961	6 827	7 497	5 092	4 266	3 636	8 734	2 865	14 690	6 550	13 556	1 764	168 877
Wheat	-	-	1 448	1 019	-	-	-	44	-	6	-	-	5 051
Rice	-	-	-	-	473	-	-	-	134	1 130	-	-	5 887
Ordinary beans	3 580	-	1 057	4 201	7 028	5 440	5 799	8 195	6 349	6 065	5 248	5 390	114 143
Climbing beans	9 651	6 647	7 002	8 172	198	265	705	264	1 633	2 958	142	257	110 086
Peas	182	412	3 785	1 470	191	121	717	1 098	112	41	161	214	20 866
Groundnuts	122	-	-	42	1 532	790	848	207	1 374	1 162	421	127	11 563
Soybeans	646	-	46	316	503	1 516	377	197	134	47	665	619	18 038
Banana	8 243	4 499	3 985	5 468	4 558	6 432	8 473	7 915	9 541	6 624	4 717	1 568	167 714
Irish potatoes	584	10 033	7 365	8 201	1 112	683	1 415	1 101	1 546	952	574	410	92 853
Sweet potato	4 476	1 299	1 493	3 251	1 281	470	824	324	476	196	940	518	47 667
Yam	1 567	358	48	159	472	603	226	145	91	99	82	396	8 249
Taro	-	-	-	-	412	-	-	6	-	-	-	302	884
Cassava	1 302	2 650	1 439	2 295	5 713	1 656	2 339	2 873	2 223	4 936	4 160	423	92 119
Sunflower	-	-	-	-	176	384	195	309	-	236	-	40	2 456
Spinach	-	-	51	-	-	24	-	1	-	-	-	-	257
Leek	-	-	-	-	-	-	-	5	-	1	-	7	53
Amarant	-	-	-	-	0	32	-	8	-	1	-	5	533
Egg plant	32	72	-	92	114	0	-	59	-	4	-	71	2 966
White Cabbage	-	0	-	37	-	4	3	56	-	-	-	15	785
Onion	-	-	-	-	-	14	95	227	325	-	28	8	1 396
Tomato	-	154	-	-	50	18	90	234	-	-	343	245	3 436
Green pepper	-	-	-	-	25	-	-	-	-	-	-	18	75
Carrot	-	-	-	-	21	-	-	-	-	-	-	68	940
Pumpkin	-	-	0	51	6	25	-	6	-	0	10	46	818
Other vegetables	-	-	-	5	46	-	-	3	-	1	-	230	2 356
Fruit	414	331	360	399	287	221	327	261	387	311	360	128	8 899
TOTAL	**41 808**	**33 458**	**36 345**	**40 269**	**29 002**	**22 332**	**32 979**	**26 403**	**39 064**	**31 393**	**36 329**	**12 883**	**898 796**

Table A.9: Estimated yield of crops by district (kg/ha)

	Nyanza	Gisagara	Nyaruguru	Huye	Nyamagabe	Ruhango	Muhanga	Kamonyi	Karongi	Ngororero	Nyabihu	Rubavu	Rutsiro	Rusizi	Nyamasheke	Rulindo
Sorghum	-	-	-	-	-	-	1 045	-	-	1 223	1 174	-	-	-	1 218	-
Maize	2 106	1 805	1 820	1 950	1 800	2 800	2 300	2 450	1 892	2 504	2 809	2 950	1 750	2 458	2 210	2 380
Wheat					1 803				1 250	2 500	1 102		1 250			2 500
Rice	4 100	4 050		5 000		5 895	5 000	6 000		4 000				7 000	4 000	
Ordinary beans	496	522	479	488	522	566	828	471	556	768	750	950	615	730	718	663
Climbing beans	1 240	1 305	1 196	1 221	1 305	1 414	2 071	1 177	1 390	1 920	1 875	2 375	1 538	1 824	1 796	995
Peas	463	350	725	347	926	371	257	1 041	921	1 263	715	-	770	383	673	916
Groundnuts	858	488	-	192	-	398	-	1 037	-	-	-	-	-	-	-	802
Soya	644	381	289	359	314	839	696	871	907	689	-	653	780	1 021	749	328
Banana	4 000	4 103	3 870	4 127	3 409	4 000	9 604	5 500	6 675	5 716	5 542	8 838	4 574	14 238	15 888	11 268
Irish Potato	4 212	3 627	7 167	2 902	5 235	4 893	4 471	5 780	5 518	12 278	19 318	15 210	7 980	9 161	9 408	8 657
Sweet Potato	10 248	7 137	6 779	9 167	8 152	11 211	14 876	12 954	8 919	8 248	5 766	4 980	7 233	9 529	10 319	12 096
Yam	1 806	2 823	2 929	2 276	1 679	4 253	6 306	7 196	9 932	9 181			4 452	10 574	5 516	7 917
Taro	1 806	2 823	2 929	2 276	1 679	4 253	6 306	7 196	9 932	9 181			4 452	10 574	5 516	7 917
Cassava	17 390	10 435	7 758	12 184	14 492	13 578	17 609	14 111	8 686	8 114	17 733	7 280	10 172	9 195	16 260	7 724
Vegetables	10 579	8 113	6 448	7 267	7 782	6 387	8 236	11 085	11 382	6 943	12 018	16 688	15 639	10 342	12 145	9 841
Fruits	10 000	12 000	10 000	12 000	10 000	10 000	10 000	10 000	9 000	9 500	16 000	16 000	9 500	12 000	12 000	11 000

	Gakenke	Musanze	Burera	Gicumbi	Bugesera	Rwamagana	Gatsibo	Kayonza	Kirehe	Ngoma	Nyagatare	Kigali City	National
Sorghum	1 160	-	1 585	-	869	-	1 219	-	-	-	1 321	-	1 232
Maize	2 550	3 200	2 909	2 808	1 890	2 400	2 450	2 150	2 450	2 123	2 515	2 300	2 406
Wheat	3 000	3 500	1 671	2 579									1 562
Rice					6 000	4 000	6 000	4 000	4 750	4 000	5 000	4 000	5 725
Ordinary beans	701	794	813	806	831	790	849	683	650	731	807	873	683
Climbing beans	1 052	1 191	1 220	1 611	1 662	1 580	1 698	1 366	1 300	1 462	1 614	1 746	1 519
Peas	626	439	851	866	159	341	810	313	424	271	458	198	729
Groundnuts	688	-	-	719	852	251	232	382	678	741	-	598	552
Soya	691	-	586	605	128	287	642	715	368	313	274	354	566
Banana	8 754	5 943	10 737	13 807	2 913	14 568	14 875	15 657	15 387	14 981	9 678	6 676	9 565
Irish Potato	10 110	21 170	15 640	12 373	3 730	6 728	7 327	3 774	5 083	3 739	6 078	3 527	12 604
Sweet Potato	10 826	5 498	11 105	6 526	8 185	7 640	8 918	8 940	7 718	8 175	7 377	6 453	8 639
Yam	6 469	7 310	5 500	6 362	6 429	3 786	16 176	2 083	3 326	4 084	4 765	2 186	6 190
Taro	6 469	7 310	5 500	6 362	6 429	3 786	16 176	2 083	3 326	4 084	4 765	2 186	4 423
Cassava	16 707	6 300	5 833	12 538	11 384	11 735	14 438	10 268	10 498	11 427	10 829	8 873	12 072
Vegetables	8 080	14 994	18 847	9 975	11 400	7 890	12 415	3 587	10 137	9 215	9 215	6 409	8 252
Fruits	12 000	12 000	15 000	15 000	9 000	9 000	9 000	9 000	9 000	9 000	9 000	9 000	12 105

Table A.10: Estimated crop production by district (MT)

	Nyanza	Gisagara	Nyaruguru	Huye	Nyamagabe	Ruhango	Muhanga	Kamonyi	Karongi	Ngororero	Nyabihu	Rubavu	Rutsiro	Rusizi	Nyamasheke	Rulindo
Sorghum	-	-	-	-	-	-	-	-	-	413	1 236	-	-	-	4	-
Maize	7 575	6 606	6 578	8 965	7 751	7 065	5 609	8 400	10 873	16 256	26 928	23 569	17 428	18 406	7 907	8 176
Wheat	-	-	-	-	43	-	-	-	408	-	2 389	-	-	-	-	-
Rice	-	2 364	-	1 898	-	493	-	-	-	-	-	-	-	19 928	1 024	-
Ordinary beans	2 363	3 318	808	2 437	1 099	2 314	2 075	2 782	2 369	1 073	22	-	456	5 423	2 718	3 803
Climbing beans	1 703	1 142	4 348	2 136	5 868	4 139	8 758	2 050	9 453	20 010	13 355	20 622	8 474	1 025	6 572	8 355
Peas	339	118	516	167	1 572	146	64	699	1 232	712	2 112	-	361	63	165	985
Groundnuts	379	308	-	115	-	698	-	1 102	-	-	-	-	-	-	-	16
Soya	244	422	324	640	153	949	945	1 303	404	323	-	-	436	923	1 017	124
Banana	13 151	21 083	12 928	24 075	18 771	22 636	88 581	31 902	57 499	40 747	19 131	23 227	36 164	112 701	153 464	51 807
Irish Potato	7 594	4 490	32 663	5 888	11 259	9 112	791	9 622	5 897	86 067	257 600	305 003	39 394	12 587	5 846	14 497
Sweet Potato	11 661	15 443	21 617	7 987	16 077	12 183	26 053	10 670	17 531	28 557	23 012	7 255	21 669	860	26 120	31 828
Yam	73	250	417	20	406	363	1 754	1 953	3 782	4 132	-	-	3 732	4 885	724	3 302
Taro	1	-	26	1	-	-	-	226	-	-	-	-	-	0	333	-
Cassava	60 541	48 474	18 292	49 897	58 210	83 217	104 751	72 415	47 501	35 138	19 211	342	14 114	44 898	91 977	11 177
Vegetables	6 357	9 376	403	2 879	1 506	543	4 401	12 049	508	6 402	1 624	42 691	12 931	19 243	5 449	7 209
Fruits	2 164	3 358	2 444	3 338	2 720	2 781	2 869	2 912	3 281	4 084	6 793	6 352	3 433	4 319	3 889	3 364
TOTAL	**114 146**	**116 752**	**101 364**	**110 444**	**125 434**	**146 639**	**246 650**	**158 085**	**160 738**	**243 915**	**373 413**	**429 061**	**158 593**	**245 263**	**307 209**	**144 644**

Table A.11: Estimated crop production by district (MT) (Continued)

	Gakenke	Musanze	Burera	Gicumbi	Bugesera	Rwamagana	Gatsibo	Kayonza	Kirehe	Ngoma	Nyagatare	Kigali	National
Sorghum	55	-	1 218	-	467	-	2 209	-	-	-	6 503	-	12 105
Maize	27 949	21 845	21 809	14 300	8 063	8 725	21 397	6 159	35 991	13 905	34 093	4 058	406 389
Wheat	-	-	2 420	2 628	-	-	-	-	-	-	-	-	7 887
Rice	-	-	-	-	2 837	-	-	-	636	4 522	-	-	33 702
Ordinary beans	2 511	-	860	3 384	5 840	4 298	4 923	5 597	4 127	4 434	4 235	4 705	77 972
Climbing beans	10 153	7 917	8 539	13 167	328	419	1 198	360	2 123	4 324	230	449	167 218
Peas	114	181	3 221	1 273	30	41	581	344	48	11	74	42	15 210
Groundnuts	84	-	-	30	1 305	198	197	79	931	861	-	76	6 380
Soya	447	-	27	191	64	435	242	141	49	15	182	219	10 217
Banana	72 163	26 739	42 785	75 492	13 277	93 695	126 035	123 933	146 810	99 238	45 651	10 467	1 604 149
Irish Potato	5 906	265 488	115 186	101 470	4 148	4 594	10 365	4 156	7 858	3 560	3 491	1 446	1 335 977
Sweet Potato	48 459	7 144	16 580	21 212	10 488	3 592	7 346	2 893	3 671	1 601	6 935	3 343	411 788
Yam	10 139	2 618	264	1 010	3 034	2 282	3 660	302	304	403	389	865	51 063
Taro	-	-	-	-	2 648	-	-	12	-	-	-	661	3 909
Cassava	21 752	16 696	8 396	28 774	65 035	19 433	33 776	29 496	23 339	56 401	45 053	3 751	1 112 055
Vegetables	262	3 391	967	1 843	5 012	3 950	4 768	3 257	3 296	2 248	3 512	4 814	170 891
Fruits	4 967	3 975	5 398	5 981	2 584	1 990	2 939	2 353	3 481	2 797	3 237	1 148	98 951
TOTAL	**204 961**	**355 993**	**227 669**	**270 755**	**125 162**	**143 651**	**219 634**	**179 081**	**232 664**	**194 320**	**153 584**	**36 044**	**5 525 865**

REPUBLIC OF RWANDA

MINISTRY OF AGRICULTURE AND ANIMAL RESOURCES

CROP ASSESSMENT SURVEY QUESTIONNAIRE 2012A SEASON, PHASE I

0. Household Identification and Field Staff Information

Household Identification

Q.0.1. Province: 1= Kigali City, 2=Southern Province, 3=Western Province, 4=Northern Province, 5=Eastern Province)	|___|
Q.0.2. District	|___||___||___|
Q.0.3. Sector	|___||___||___||___||___|
Q.0.4. Cell	|___||___||___|
Q.0.5. Village	|___||___||___|
Q.0.6. Names of household head	
Q.0.7. Sex (1=Male, 2=Female)	|___|
Q.0.8. Household size	
Q.0.9. Number of household members who practice agriculture	|___||___|
Q.0.10. Interviewed household number	|___||___|
Q.0.11. Respondent's names (If not household head)	
Q.0.12. Respondent 's relationship to the household head	

Field Staff Information

Q.0.13. Interviewer's names:|	
Q.0.14. Date of interview	|__||__|/|__||__|/|__||__|
Q.0.15. Team leader's names:	
Q.0.16. Date questionnaire was checked	|__||__|/|__||__|/|__||__|
Q.0.17. Team leader's signature:	

I. Characteristics of Cultivated Area and Land Protection Activities, 2012 Season A

Notes:

1. A plot is a cultivated area, in which crops are grown and which has visible borders sensitive to a geometric shape.
2. The interviewer has to visit all cultivated plots.
3. The interviewer has to begin by getting particulars of the main plots of the household which are near it's house.

Plot N^{o}	Q.1.1. Location of plot 1= On the top of the hill 2= On the side of the hill 3= On the border of the wetland 4= In the wetland/marshland	Q.1.2. Area of plot in m^2	Q.1.3. Are there any anti-erosion activities in the plot? 1= Yes 2= No→Q.1.5.	Q.1.4. If Yes, what are those activities? 1= Only ditches (Erosion control bands) 2= Trees / grasses 3= Only terraces 4= Ditches + terraces 5= Ditches + trees/grasses 6= Trees/grasses + terraces 7= All the above
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

II. Compost Manure

Q.2.1. Do you have a Compost Pit for making manure? 1= Yes 2= No=→**Section 3**

|___|

Q.2.2. If the answer to Q.2.1 is Yes, how many Compost Pits, for making manure, do you have? |___|

III. Initial characteristics of main crops: 2012A Season

Plot N°	Q.3.1. Crops planted in the plots (Use crops codes at the bottom of this table)		Q.3.2. Was the rainy season on time?	Q.3.3. Till now, how well is it raining?	Q.3.4. Till now, what is your assessment of the amount of rainfall?	Q.3.5. What was the starting date of sowing?	Q.3.6. What is the quantity of seed sown?	Q.3.7. In the sown seeds what are the quantities of selected seed varieties?	Q.3.8. What is the expected level of damage due to too much rainfall, drought, and other diseases?	Q.3.9. What is the expected date of harvesting?	Q.3.10. When rainfall is inadequate, do you irrigate this crop?	Q.3.11. What are the methods used for irrigating crops?	Q.3.12. Have you been trained on how to grow and manage this crop?	Q.3.13. How do you rank your training?	Q.3.14. Were you satisfied with the training you received?
	Name	Code	1= On time 2= Early 3= Late	1= Good 2= Bad	1= Much 2=Enough 3= Little	1= Before 30/09/2011 2= 1-15 /10/2011 3= 16-31/10/2011 4= After 31st 10/ 2011 5= NA	Kilograms (kg)	Kilograms (kg)	1= To much 2= On average 3= Few 4= NONE	1= Before 30/11/2011 2= 1-31/12/2011 3= 1-31/01/2012 4= After 28/02/2012 5= NA	1= Yes 2= no→Q.2.12	1= Pumps/irrigation machines 2= Watering can 3= Other tool 4= Water drainage	1= Yes 2= No→ go to the following crops	1= Low level 2= Middle level 3= High level	1= Yes 2= No

1= Ordinary beans 2= Climbing beans 3= Peas 4= Groundnuts 5=Soybeans 6= Sorghum 7= Maize	8= Wheat 9= Rice 10= Sunflower 11= Inkoli 12= Irish potatoes 13= Sweet potato 14= Yam 15= Eleusine	16= Taro 20= Spinach 21= Zucchini 22= Leek 23= Pepper 24= Celery 25= Parsley 26=Amarant	27= Green beans 28= Lettuce 29= eggplant 30= White Cabbage 31= Flower Cabbage 32= Oignon 33= Tomato 34= Green pepper 35= Carrot	36= Cucumber 37= Beetroot/Suger beet 38= Allium 39= Marrow 40= Ibiringanya 41= Mushroom 42= Cassava leaves 43= Radi 90= Other vegetables

IV. Use of Fertilizer, Pesticides and Seeds on Cultivated Crops, 2012 Season A

Q.4.1. Did you already use or will use organic fertilizer during this agriculture season? 1= Yes 2= No |___|

Q.4.2. If Yes to Q.4.1, was the organic fertilizer that you used or will use, composed in a pit as compost manure? 1= Yes 2= No|___|

Q.4.3. Did you already use or will you use inorganic fertilizer/pesticides during this agriculture season? 1= Yes 2= No |___|

If the answer to Q.4.3. is Yes, please complete the following table for crops which were identified in the third section for which the farmer used or will use fertilizer, seeds or pesticides and their quantities during this agriculture season.

Plot N°	**Fertilizers or pesticides used or will be used in this agriculture season**				**On which crops were fertilizers or pesticides used?**			**What is the main source of fertilizer or pesticides that were used?**		
	Q.4.4. Name of fertilizer or pesticide	Q.4.5. Code (See below)	Q.4.6. Measuring unit 1= kg 2= gr 3= l 4= cc	Q.4.7. Quantity of Fertilizers/ Pesticides Used	Q.4.8. First crop	Q.4.9. Second crop	Q.4.10. Third Crop	Q.4.11. MINAGRI/RAB/ NAEB/District 1= Yes 2= No	Q.4.12. Market 1= Yes 2= No	Q.4.13. Other 1= Yes 2= No
1		|___|	|___|		|___|	|___|	|___|			
2		|___|	|___|		|___|	|___|	|___|			
3		|___|	|___|		|___|	|___|	|___|			
4		|___|	|___|		|___|	|___|	|___|			
5		|___|	|___|		|___|	|___|	|___|			
6		|___|	|___|		|___|	|___|	|___|			
7		|___|	|___|		|___|	|___|	|___|			
8		|___|	|___|		|___|	|___|	|___|			
9		|___|	|___|		|___|	|___|	|___|			
10		|___|	|___|		|___|	|___|	|___|			

FERTILIZER	PESTICIDES FOR DISEASES	PESTICIDES FOR INSECTS
1= NPK	7= DITHANE	10= CYPERMETRINE
2= UREA	8= RIDOMIL	11= DURSBAN
3= DAP	9= DIMETHOATE	12= TILT
4= Lime		13= PILKARE
5= PURIN		99= Other pesticides

V. Planted Crops Density, 2012 Season A

Note:

1. A plot is a cultivated area, in which crops are planted and which has visible borders sensitive to a geometric figure.
2. The interviewer has to visit all cultivated plots.
3. The interviewer has to begin recording information of the main plots of the household, which are near the household residence.
4. Crops of concern are those which are expected to be harvested from 29 February 2012.

Plot N^{o}	Q.5.1. shape of the plot	Q.5.2. Area	Main crops planted in 2012 Season A								Q.5.7. Is this plot included in the Land Consolidation Program?	Q.5.8. Will this plot have a follow-up visit by Interviewer?
			Q.5.3. First crop		Q.5.4. Second crop		Q.5.5. Third crop		Q.5.6. Fourth crop			
ID	1= Square 2= triangle 3= other	m^2	Code	Density (%)	Code	Density (%)	Code	Density (%)	Code	Density	1= Yes 2=No	1= Yes 2=No→next plot
01												
02												
03												
04												
05												
06												

07												
08												
09												

1= Ordinary beans	12= Irish potatoes	24= Celery	35= Carrot
2= Climbing beans	13= Sweet potato	25= Parsley	36= Cucumber
3= Peas	14= Yam	26= Amaranth	37= Beetroot/Suger beet
4= Groundnuts	15= Eleusine	27= Green beans	38= Allium
5= Soybeans	16= Taro	28= Lettuce	39= Pumpkin
6= Sorghum	17= Banana	29= Eggplant	40= Egg Plant
7= Maize	18= Cassava	30= White Cabbage	41= Mushroom
8= Wheat	20= Spinach	31= Cauliflower	42= Cassava leaves
9= Rice	21= Zucchini	32= Oignon	43= Radi
10= Sunflower	22= Leek	33= Tomato	90= Other vegetables
11= Inkoli	23= Pepper	34= Green pepper	

VI. Disposition of Food Production from 2011B and 2011C Seasons

Note: 1. Questions in this section concern only food harvested in the 2011B and 2011C seasons.

2. Storage concerns only cereals

Question: we would like to know the quantity of food that was sold and stored in the 2011B and 2011C seasons.

Q.6.1. Harvested crop which has been sold or stored		Q.6.2. What is the quantity sold?	Q.6.3. What is the quantity of 2011B & 2011C seasons production that was used to exchange with other things	Q.6.4. Does your household store any quantity of production from the 2011B and 2011C seasons?	Q.6.5. Does your household store any quantity of this crop that was bought from the market?	Q.6.6. What is the stored quantity of this crop?
Code	Name of the crop	Kg	Kg	1= Yes 2= No	1= Yes 2= No	kg

1= Ordinary beans 2= Climbing beans 3= Peas 4= Groundnuts 5=Soybeans	6= Sorghum 7= Maize 8= Wheat 9= Rice 10= Sunflower	11= Inkoli 12= Irish potatoes 13= Sweet potato 14= Yam	

VII. Number of Livestock in the Household by Type, 2012A Season

Q7.1. Livestock type	Q.7.2. Code	Q.7.3. Total number	Q.7.4. Male	Q.7.5. Female	Q.7.6. Number of dairy cattle	Q.7.7. Milk Production (Quantity/day)
Local Cow	01					
Hybrid Cow	02					
	03					
Goat	04					
Sheep	05					
Pig	06				N/A	N/A
Rabbit	07				N/A	N/A
Chicken	08				N/A	N/A
Duck	09				N/A	N/A
Imbeba (Guinea Pig)	10				N/A	N/A
Ibishuhe (Water Duck)	11				N/A	N/A
Turkey	12				N/A	N/A
Dog	13				N/A	N/A
Cat	14				N/A	N/A

REPUBLIC OF RWANDA

MINISTRY OF AGRICULTURE AND ANIMAL RESOURCES

CROP ASSESSMENT SURVEY QUESTIONNAIRE 2012A SEASON, PHASE II

0. Interview Information

Household Identification

Q.0.1. Province: 1= Kigali City, 2=Southern Province, 3=Western Province, 4=Northern Province, 5=Eastern Province)	|___|
Q.0.2. District	|___||___||___|
Q.0.3. Sector	|___||___||___||___||___|
Q.0.4. Cell	|___||___||___|
Q.0.5. Village	|___||___||___|
Q.0.6. Names of household head	
Q.0.7. Sex (1=Male, 2=Female)	|___|
Q.0.8. Household size	
Q.0.9. Number of household members who practice agriculture	|___||___|
Q.0.10. Interviewed household number	|___||___|
Q.0.11. Respondent's names (If not household head)	
Q.0.12. Respondent 's relationship to the household head	

Interviewer's information

Q.0.13. Interviewer's names:	
Q.0.14. Date of interview	|__|__|/|__|__|/|__|__|
Q.0.15. Team leader's names:	
Q.0.16. Date questionnaire was checked	|__|__|/|__|__|/|__|__|
Q.0.17. Team leader's signature:	

II. 2012 Season A: Main Crops Planted and Selected Inputs

Nº	Q.2.1 Crops planted in the plots (Use crops codes at the bottom of this table)		Q.2.2 Till now, how well is it raining?	Q.2.3 Till now, what is your assessment of the amount of rainfall?	Q.2.4 What is the quantity of seed sown?	Q.2.5 In the sown seeds, what are the quantities of selected seed varieties?	Q.2.6 What is the expected level of damage due to too much rainfall, drought, and other diseases?	Q.2.7 What is the expected date of harvesting?	Q.2.8 In General, How is the yied?
	Name	Code	1= Good 2= Bad	1= Too Much 2= Enough 3= Little	Kilograms (kg)	Kilograms (kg)	1= Too much 2= On average 3= Little 4= None	1= Finished to harvest 2= 1-31 Dec. 2011 3= 1-31 Jan. 2012 4= After 28 Feb. 2012 5= N/A	1= Above average 3= On average 2= Little
1									
2									
3									
4									
5									
6									
7									
8									

1= Ordinary beans 2= Climbing beans 3= Peas 4= Groundnuts 5=Soybeans 6= Sorghum 7= Maize	8= Wheat 9= Rice 10= Sunflower 11= Inkoli 12= Irish potatoes 13= Sweet potato 14= Yam 15= Eleusine	16= Taro 20= Spinach 21= Zucchini 22= Leek 23= Pepper 24= Celery 25= Parsley 26=Amarant	27= Green beans 28= Lettuce 29= Egg plant 30= White Cabbage 31= Flower Cabbage 32= Oignon 33= Tomato	34= Green pepper 35= Carrot 36= Cucumber 37= Beetroot/Sugar beet 38= Allium	39= Marrow 40= Ibiringanya 41= Mushroom 42= Cassava leaves 43= Radi 90= Other vegetables

III. Use of Fertilizer, Pesticides and Seeds on Cultivated Crops, 2012 Season A

Q.3.1.	Did you already use organic fertilizer during this agriculture season? 1= Yes 2= No	|___|
Q.3.2.	Did you already use inorganic fertilizer/pesticides during this agriculture season? 1= Yes 2= No	|___|
Q.3.3	Will you use organic or inorganic fertilizer/pesticides during this agriculture season? 1= Yes 2= No	|___|

NB: If the answers to any of Q.3.1., Q.3.2. and Q.3.3. is Yes, please complete the following table for crops which were identified in the second section of the questionnaire for which the farmer used or will use fertilizer, seeds or pesticides and their quantities during this agriculture season.

	Fertilizers or pesticides used or will be used in this agriculture season				**What is the main source of Fertilizer or Pesticides that was used?**	**On which crops were Fertilizers or Pesticides used? (use crop codes from section II)**		
CODE	Q.3.4 Name of Fertilizer or Pesticide	Q.3.5 Used or Not Used? 1 = Yes 2 = Non =➔Go to the next Fertilizer/Pesticide	Q.3.6 Measuring unit 1 = kg 2 = gr 3 = l 4 = cc	Q.3.7. Quantity of Fertilizers/ Pesticides used	Q.3.8 1 = MINAGRI /RAB/NAEB/District 2 = Market 3 = MINAGRI & Market 4 = Other Place	Q.3.9. First crop	Q.3.10 Second crop	Q.3.11 Third Crop
1	NPK	|____|	|____|			|____|	|___|	|____|
2	UREA	|____|	|____|			|____|	|___|	|____|
3	DAP	|____|	|____|			|____|	|___|	|____|
4	LIME	|____|	|____|			|____|	|___|	|____|
5	PURIN	|____|	|____|			|____|	|___|	|____|
7	DITHANE	|____|	|____|			|____|	|___|	|____|
8	RIDOMIL	|____|	|____|			|____|	|___|	|____|
9	DIMETHOATE	|____|	|____|			|____|	|___|	|____|
10	CYPERMETRINE	|____|	|____|			|____|	|___|	|____|
11	DURSIBAN	|____|	|____|			|____|	|___|	|____|
12	TILT	|____|	|____|			|____|	|____|	|____|
13	PILKARE	|____|	|____|			|____|	|____|	|____|
99	UNDI MUTI	|____|	|____|			|____|	|____|	|____|

IV. Planted Crops, Density, and Yield Assessment, 2012 Season A

1. A plot is a cultivated area, in which crops are planted and which has visible borders sensitive to a geometric figure.
2. The interviewer has to visit all cultivated plots.
3. The interviewer has to begin recording information of the main plots of the household, which are near the household residence.
4. Crops of concern are those which provided a yield/are expected to be harvested till 29 February 2012.
5. If the answer to Q.4.5 is 2 or 3 go to the following crop

Q.4.1. Plot number /__01_/ Q.4.2. Area of the plot (m^2)_____

Q.4.3 Crop code	**Q.4.4 Crops planted in the plot**	**Q.4.5** ***Do you expect any yield/Did you get any yield on this crop?*** ***1 = Yes*** ***2 = No*** ***3 = Crop was not planted in this plot***	**Q.4.6 Crop density (%)**	**Q.4.7 What is the quantity of yield already harvested? (kg)**	**Q.4.8 What is the quantity of yield expected to be harvested? (kg)**
01	Ordinary beans				
02	Climbing beans				
03	Peas				
04	Groundnuts				
05	Soybeans				
06	Sorghum				
07	Maize				
08	Wheat				
09	Rice				
10	Sunflower				
11	Cassava				
12	Irish potatoes				
13	Sweet Potatoes				
14	Yam				
16	Taro				
17	Banana				
20	Spinach				
22	Leek				
26	Amaranth				
29	Eggplant				
30	White cabbage				
32	Onion				
33	Tomatoes				
34	Green Pepper				
35	Carrot				
39	Pumpkin				
90	Other Vegetables				

Q.4.1. Plot number /__02_/ **Q.4.2. Area of the plot (m²)_____**

Q.4.3 Crop code	**Q.4.4 Crops planted in the plot**	**Q.4.5** ***Do you expect any yield/Did you get any yield on this crop?*** ***1 = Yes*** ***2 = No*** ***3 = Crop was not planted in this plot***	**Q.4.6 Crop density (%)**	**Q.4.7 What is the quantity of yield already harvested? (kg)**	**Q.4.8 What is the quantity of yield expected to be harvested? (kg)**
01	Ordinary beans				
02	Climbing beans				
03	Peas				
04	Groundnuts				
05	Soybeans				
06	Sorghum				
07	Maize				
08	Wheat				
09	Rice				
10	Sunflower				
11	Cassava				
12	Irish potatoes				
13	Sweet Potatoes				
14	Yam				
16	Taro				
17	Banana				
20	Spinach				
22	Leek				
26	Amaranth				
29	Eggplant				
30	White cabbage				
32	Onion				
33	Tomatoes				
34	Green Pepper				
35	Carrot				
39	Pumpkin				
90	Other Vegetables				

Q.4.1. Plot number /__03_/ **Q.4.2. Area of the plot (m²)_____**

Q.4.3 Crop code	Q.4.4 Crops planted in the plot	Q.4.5 *Do you expect any yield/Did you get any yield on this crop?* *1 = Yes* *2 = No* *3 = Crop was not planted in this plot*	Q.4.6 Crop density (%)	Q.4.7 What is the quantity of yield already harvested? (kg)	Q.4.8 What is the quantity of yield expected to be harvested? (kg)
01	Ordinary beans				
02	Climbing beans				
03	Peas				
04	Groundnuts				
05	Soybeans				
06	Sorghum				
07	Maize				
08	Wheat				
09	Rice				
10	Sunflower				
11	Cassava				
12	Irish potatoes				
13	Sweet Potatoes				
14	Yam				
16	Taro				
17	Banana				
20	Spinach				
22	Leek				
26	Amaranth				
29	Eggplant				
30	White cabbage				
32	Onion				
33	Tomatoes				
34	Green Pepper				
35	Carrot				
39	Pumpkin				
90	Other Vegetables				

Q.4.1. Plot number /__04_/ **Q.4.2. Area of the plot (m²)_____**

Q.4.3 Crop code	Q.4.4 Crops planted in the plot	Q.4.5 *Do you expect any yield/Did you get any yield on this crop?* *1 = Yes* *2 = No* *3 = Crop was not planted in this plot*	Q.4.6 Crop density (%)	Q.4.7 What is the quantity of yield already harvested? (kg)	Q.4.8 What is the quantity of yield expected to be harvested? (kg)
01	Ordinary beans				
02	Climbing beans				
03	Peas				
04	Groundnuts				
05	Soybeans				
06	Sorghum				
07	Maize				
08	Wheat				
09	Rice				
10	Sunflower				
11	Cassava				
12	Irish potatoes				
13	Sweet Potatoes				
14	Yam				
16	Taro				
17	Banana				
20	Spinach				
22	Leek				
26	Amaranth				
29	Eggplant				
30	White cabbage				
32	Onion				
33	Tomatoes				
34	Green Pepper				
35	Carrot				
39	Pumpkin				
90	Other Vegetables				

Q.4.1. Plot number /__05_/ **Q.4.2. Area of the plot (m²)_____**

Q.4.3 Crop code	Q.4.4 Crops planted in the plot	Q.4.5 *Do you expect any yield/Did you get any yield on this crop?* *1 = Yes* *2 = No* *3 = Crop was not planted in this plot*	Q.4.6 Crop density (%)	Q.4.7 What is the quantity of yield already harvested? (kg)	Q.4.8 What is the quantity of yield expected to be harvested? (kg)
01	Ordinary beans				
02	Climbing beans				
03	Peas				
04	Groundnuts				
05	Soybeans				
06	Sorghum				
07	Maize				
08	Wheat				
09	Rice				
10	Sunflower				
11	Cassava				
12	Irish potatoes				
13	Sweet Potatoes				
14	Yam				
16	Taro				
17	Banana				
20	Spinach				
22	Leek				
26	Amaranth				
29	Eggplant				
30	White cabbage				
32	Onion				
33	Tomatoes				
34	Green Pepper				
35	Carrot				
39	Pumpkin				
90	Other Vegetables				