



Republic of Rwanda



SEASONAL AGRICULTURAL SURVEY

2018



Republic of Rwanda



SEASONAL AGRICULTURAL SURVEY

2018

ANNUAL REPORT

December 2018

Seasonal Agricultural Survey (SAS) 2018 annual report is produced by National Institute of Statistics of Rwanda (NISR)

Additional information about Seasonal Agricultural Survey 2018 report may be obtained from NISR
Po. Box 6139 Kigali Rwanda;

Website: www.statistics.gov.rw; Email: info@statistics.gov.rw

ISBN: 978-99977-43-45-9

Recommended citation:

National Institute of Statistics of Rwanda (NISR), Seasonal Agricultural Survey 2018 annual report, December 2018

Table of contents

| | |
|----------------------------------------------------------------|------|
| List of tables | v |
| List of appendices | vii |
| List of acronyms and abbreviations | viii |
| EXECUTIVE SUMMARY | ix |
| Crop area | ix |
| Production | ix |
| Crop yield | ix |
| Agricultural inputs | x |
| Agricultural practices | xi |
| 1. Introduction | 1 |
| 1.1 Objectives of the Survey | 1 |
| 1.2 Time frame | 1 |
| 2. Methodology used for the conducting the survey | 3 |
| 2.1 Land stratification | 3 |
| 2.2 Sampling of segments..... | 6 |
| 2.3. Sample size determination..... | 10 |
| 2.4 Estimation Methodology | 12 |
| 2.4.1 Estimation formulas..... | 12 |
| 2.4.2 Segment-Level Estimation used | 13 |
| 2.5 Data Collection | 15 |
| 2.5.1 Data Collection Tools | 15 |
| 2.5.2 Data collection activity | 15 |
| 2.6 Data processing and analysis | 17 |
| 2.7 Computation methods for Key indicators..... | 17 |
| 2.7.1 Physical area estimation..... | 17 |
| 2.7.2 Crop area (cultivated area) estimation..... | 17 |
| 2.7.3 Developed area estimation | 17 |
| 2.7.4 Harvested area estimation | 18 |
| 2.7.5 Crop yield estimation..... | 18 |
| 2.7.6 Crop production estimation | 18 |
| 3. Results of SAS 2018 | 19 |
| 3.1. Farm characteristics..... | 19 |
| 3.1.1. Area | 19 |
| 3.1.2. Crop Production..... | 23 |

| | |
|--------------------------------------|-----------|
| 3.1.3. Crop Yield | 26 |
| 3.1.4. Sowing Date..... | 27 |
| 3.1.5. Cropping system..... | 31 |
| 3.2. Agricultural inputs | 33 |
| 3.2.1. Use of Seeds..... | 33 |
| 3.2.2 Use of fertilizers..... | 40 |
| 3.2.3 Use of pesticides | 43 |
| 3.3 Agricultural practices..... | 45 |
| 3.3.1 Irrigation practices..... | 45 |
| 3.3.2 Erosion control measures | 48 |
| 3.4 Gross Added value | 52 |
| APPENDIX..... | 54 |

List of tables

| | |
|--------------------------------------------------------------------------------------------|----|
| Table 1 : List of strata | 3 |
| Table 2: Classification of potential land for agriculture per district (ha)..... | 5 |
| Table 3 : Share (%) of area occupied by agricultural strata within the country | 6 |
| Table 4 : Number of selected segments per district..... | 9 |
| Table 5: Agricultural land use for potential arable land per district (Ha)..... | 19 |
| Table 6.1: Season A_ Cultivated area by crop type and province (ha) | 20 |
| Table 6.2: Season B, Cultivated area by crop type and province (ha) | 20 |
| Table 6.3: Season C, Cultivated area by crop type and province (ha)..... | 21 |
| Table 7.1: Season A_Harvested area by crop type and Province (Ha)..... | 21 |
| Table 7.2: Season B_Harvested area by crop type and Province (Ha)..... | 22 |
| Table 7. 3: Season C, harvested area by crop type and province (ha) | 22 |
| Table 8. 1: Average plot size by cropping system per district (In sqm) | 23 |
| Table 9. 1: Season A, Production of main crops by Province (MT)..... | 24 |
| Table 9.2: Season B, Production of main crops by Province (MT)..... | 25 |
| Table 9. 3: Season C, Production of main crops by Province (MT) | 25 |
| Table 10. 1 : Season A, Yield of main crops by Province (Kg/Ha) | 26 |
| Table 10. 2: Season B, Yield of main crops by Province (Kg/Ha) | 26 |
| Table 10. 3: Season C, Yield of main crops by Province (Kg/Ha)..... | 27 |
| Table 11. 1 : Sowing dates per crop (Percentage) for Small scale farmers | 28 |
| Table 11. 2 : Sowing dates per crop (Percentage) for Large scale farmers | 29 |
| Table 11. 3 : Sowing dates per District (Percentage)..... | 29 |
| Table 12. 1: Percentage of plots within number of crops per plot by District..... | 32 |
| Table 12. 2: Share of plots by cropping system in agricultural land per district (%) | 32 |
| Table13. 1: Type of seeds used by district (Percentage)..... | 34 |
| Table13. 2: Type of seeds used by crop (Percentage) for Small scale farmers..... | 34 |
| Table13. 3: Type of seeds used by crop (%) for Large Scale Farmers..... | 35 |
| Table13. 4: Source of improved seeds by district (Percentage)..... | 36 |
| Table13. 5 : Source of improved seeds by crop (Percentage) for Small scale farmers | 38 |
| Table13. 6: Source of improved seeds by crop (Percentage) for Large Scale Farmers | 38 |
| Table 14. 1: Percentage of plots with organic fertilizer use per district | 40 |
| Table 14. 2: Table Percentage of plots with inorganic fertilizer use per district..... | 40 |
| Table 14. 3: Types of inorganic fertilizers use per district (in percentage) | 41 |
| Table 15. 1: Percentage of plots with pesticides use per district..... | 43 |
| Table 15. 2: Type of pesticides used by District (in percentage)..... | 43 |
| Table 15. 3: Type of pesticides used by District (in percentage) cont'd | 44 |
| Table 16. 1: Use of Irrigation per district (Percentage) | 45 |
| Table 16. 2: Types of irrigation used by district (in percentage) | 46 |
| Table 16. 3: Types of irrigation used by crop type (%)for small scale farmers..... | 46 |
| Table 16. 4 : Source of water used for irrigation per district (in percentage)..... | 47 |
| Table 17. 1: Percentage of plot with Anti-erosion activities use per District..... | 48 |
| Table 17. 2: Types of anti-erosion activities by district (Percentage) | 49 |
| Table 17. 3: Types of anti-erosion activities by district (Percentages) cont'd..... | 49 |
| Table 17. 4 : Degree of erosion per district (Percentage) | 51 |
| Table 18. 1 : Gross Added value (Rwf per ha)..... | 52 |

List of figures

Figure 1. Land use stratification.....4
Figure 2: Construction of PSUs (Example of Nyagatare District).....7
Figure 3: Construction of SSUs (Example of Nyagatare District).....8
Figure 4: Segment map with a distribution of 50 point-sample grid squares..... 10

List of appendices

| | |
|-------------------------------------------------------------------------------------------------------------|----|
| Appendix 1: Cultivated area by crop type and district (Ha) | 54 |
| Appendix 2: Cultivated area by crop type and district (Ha)..... | 56 |
| Appendix 3. Cultivated area by crop type and district (Ha) | 59 |
| Appendix 4: Harvested area by crop type and district (Ha)..... | 60 |
| Appendix 5: Harvested area by crop type and district (Ha)..... | 62 |
| Appendix 6: Production of main crops by District (MT) | 64 |
| Appendix 7: Production of main crops by District (MT) | 66 |
| Appendix 8: Production of main crops by District (MT) | 68 |
| Appendix 9: Yield of main crops by District (Kg/Ha)..... | 70 |
| Appendix 10: Yield of main crops by District (Kg/Ha)..... | 71 |
| Appendix 11 : Yield of main crops by District (Kg/Ha)..... | 73 |
| Appendix 12 : Percentage of area under permanent crop (Tea) 2018 Agricultural year | 74 |
| Appendix 13 : Percentage of area under permanent crop (Banana) in 2018 Agricultural year | 75 |
| Appendix 14: Percentage of area under cultivation of permanent crop (Fruits) in 2018 Agricultural year..... | 76 |
| Appendix 15 : Percentage of area under pasture (2018 Agricultural year) | 77 |

List of acronyms and abbreviations

- %: Percentage
- **CAPI:** Computer Assisted Personnel Interviewing
- **Cs Entry:** The free Census and Survey Processing data collection application
- **CSPro:** Census and Survey Processing System
- **DAP:** Diammonium Phosphate
- **EDPRS:** Economic Development and Poverty Reduction Strategy
- **GDP:** Gross Domestic Product
- **GIS:** Geographic Information System
- **GPS:** Global Positioning System
- **Ha:** Hectares
- **KCL/ MOP:** Potassium Chloride or Muriate of Potash
- **Kg:** Kilograms
- **LSF:** Large-Scale Farmer
- **MFS:** Multiple-Frame Sampling
- **MINAGRI:** Ministry of Agriculture and Animal Resources
- **MT:** Metric Tones
- **NAEB:** National Agriculture Export Board
- **NGOs:** Non- Governmental Organization
- **NISR:** The National Institute of Statistics of Rwanda
- **NPK:** Nitrogen, Phosphorus and Potassium
- **PSUs:** Primary Sampling Units
- **RAB:** Rwanda Agricultural Board
- **SAS:** Seasonal Agricultural Survey
- **Sq.m:** Square meter
- **SSF:** Small Scale Farmer
- **SSUs:** Second Sampling Units
- **STATA:** Software for Statistics and data Science
- **Survey 123:** Electronic instrument or questionnaire for farmer interview data collection System, suite of data processing tools
- **TSP:** Triple superphosphate

EXECUTIVE SUMMARY

National Institute of Statistics of Rwanda (NISR) conducted the 2018 Seasonal Agricultural Survey (SAS) covering all three agricultural seasons of Rwanda. Field work was scheduled as follows: Season A, from 10th December 2017 to 30th January 2018; Season B, from 29th April to 19th July 2018; and Season C, from 4th to 24th September 2018. Data collection was done in 780 segments and 222 large scale farmers holdings. The survey results are presented in this report and the main highlights are described below.

Crop area

SAS 2018 results indicate that, comparing with Season A 2017 estimates, in season A 2018 there was an increase of cultivated area for maize (4%), wheat (36%), Irish potato (33%), beans 7%, pea (61%) and soybean (8%), while the cultivated area decreased for sorghum (-9%), cassava (-11%), yams and taro (-68%) banana (-6%), groundnut (-18%), vegetables (-31%) and fruits (-9%). Sweet potato and paddy rice cultivated area remained slightly the same. In season B 2018, crops that increased in cultivated area are sorghum and wheat (4%), cassava (15%), Irish potato (32%), banana, peas and groundnuts increased by 3% respectively, while there was a decrease of cultivated area for maize (-8%), paddy rice (-3%), sweet potato (-6%), yams and taro (-12%), beans (-3%) compared to 2017 season B estimates.

Production

Results of 2018 Season A show that compared to Season A 2017 estimates, there was an increase of production for maize (3%), paddy rice (5%), bean (12%), pea (33%), cassava (8%), sweet potato (15%), Irish potato (16%), vegetables (22%), soybean (14%) and groundnut (6%), while a decrease of production was reported for sorghum (-12%), banana (-3%), yams and taro (-45%). Results of 2018 Season B show that compared to Season B 2017 estimates, there was an increase of produce for maize (7%), wheat (4%), beans (3%), pea (2%), banana (8%), cassava (9%), sweet potato (3%), yams and taro (5%), fruits (8%) and groundnut (11%), while a decrease of production was reported for paddy rice (-14%), Irish potato (-1%), vegetables (-7%) and soybean (-19%).

Crop yield

In the previous reports yield was calculated by production of crop in the plot over cultivated area, but in 2018 agricultural year there was a change in yield calculation whereby yield is calculated by using harvested area of that plot and this was the reason behind a high yield in yield of perennial crops. The results of the Season A 2018 indicate that the average yields for of main crops in Rwanda were: 1,525 kg/ha for maize, 1,347 kg/ha for sorghum, 3,420 kg/ha for paddy rice, 1,325 kg/ha for wheat, 13,551 kg/ha for cassava , 7,565 kg/ha for sweet potato, 8,646 kg/ha for Irish potato , 6,192 kg/ha for yams and taro, 18,970 kg/ha for cooking banana, 21,693 kg/ha for dessert banana, 12,271 kg/ha for banana for beer, 810 kg/ha for bush bean, 1,035 kg/ha for climbing bean, 613 kg/ha for groundnut, 595 kg/ha for pea, 506 kg/ha for soybean, 11,939 kg/ha for vegetables and 8,416 kg/ha fruits.

The results of the Season B 2018 indicate that the average yields for of main crops in Rwanda were: 1,171 kg/ha for maize, 1,010 kg/ha for sorghum, 3,532 kg/ha for paddy rice, 973 kg/ha for wheat, 11,398 kg/ha for cassava , 6,236 kg/ha for sweet potato, 6,531 kg/ha for Irish potato , 5,047 kg/ha for yams and taro, 17,891 kg/ha for cooking banana, 15,915 kg/ha for dessert banana, 9,615 kg/ha for

banana for beer, 801 kg/ha for bush bean, 997 kg/ha for climbing bean, 464 kg/ha for groundnut, 536 kg/ha for pea, 343 kg/ha for soybean, 11,641 kg/ha for vegetables and 3,916 kg/ha fruits.

Regarding Season C 2018, the results showed that the average yields for of main season C crops in Rwanda were: 4,638 kg/ha for sweet potato, 10,399 kg/ha for Irish potato, 1,160 kg/ha for bush bean, 1,153 kg/ha for climbing bean, 600 kg/ha for pea, 646 kg/ha for soybean and 13,396 kg/ha for vegetables.

Agricultural inputs

Use of Seeds

In Season A 2018, small scale farmers used improved seeds at 12.5 % and 53.1% for large scale farmers. In Season B, improved seeds were used at 5.8% for small scale farmers and 40.2% for large scale farmers. In season C, small scale farmers used improved seeds at 13.3%.

Use of Fertilizers

In 2018 Season A, for small scale farmers, organic fertilizers were applied in 48.2 % of all cultivated plots and inorganic fertilizers were applied in 24.8 % of all cultivated plots. For Large Scale Farmers organic fertilizers and inorganic fertilizers were applied in 50.2% and 42.8% of all cultivated plots respectively. Among inorganic fertilizer types, Urea was most used for both small- and large-scale famers at 37.2% and 37.7% respectively. In 2018 Season B, for small scale farmers, organic fertilizers were applied in 38.6% % of all cultivated plots and inorganic fertilizers were applied in 18.5% of all cultivated plots. For Large Scale Farmers organic fertilizers and inorganic fertilizers were applied in 34.6 % and 33 % of all cultivated plots respectively. Among inorganic fertilizer types, Urea was most used for both small- and large-scale famers at 33.1% and 36.6% respectively. In 2018 Season C, for small scale farmers, organic fertilizers were applied in 62.8% of all cultivated plots and inorganic fertilizers were applied in 44.7% of all cultivated plots.

In 2018 Season B, for small scale farmers, organic fertilizers were applied in 38.6% of all cultivated plots and inorganic fertilizers were applied in 18.5% of all cultivated plots. For Large Scale Farmers organic fertilizers and inorganic fertilizers were applied in 34.6 % and 33 % of all cultivated plots respectively. Among inorganic fertilizer types, Urea was most used for both small- and large-scale famers at 33.1% and 36.6% respectively.

In 2018 Season C, for small scale farmers, organic fertilizers were applied in 62.8% of all cultivated plots and inorganic fertilizers were applied in 44.7% of all cultivated plots.

Use of Pesticides

In 2018 Season A, for small scale farmers, pesticides were applied in 19.5% of all cultivated plots while for Large Scale Farmers pesticides were applied in 67.7% of all cultivated plots. Among pesticides types, Rocket was most used for both small- and large-scale famers at 34.6% and 38.5% respectively. In 2018 Season B, for small scale farmers, pesticides were applied in 14.3% of all cultivated plots while for Large Scale Farmers pesticides were applied in 58.8% of all cultivated plots. Among pesticides types, cypermethrin was most used for both small-and large-scale famers at 27.9% and 30.4%

respectively. In 2018 Season C, for small scale farmers, pesticides were applied in 46.1% of all cultivated plots. Among pesticides types, Dithane was mostly used at 54.6%.

Agricultural practices

Irrigation practices

In 2018 season A, for small scale farmers, irrigation was practiced in 5% of all cultivated plots and in 18.5% of all cultivated plots for Large Scale Farmers. In 2018 Season B, for small scale farmers, irrigation was practiced in 4.8% of all cultivated plots and in 27.7% of all cultivated plots for Large Scale Farmers. In 2018 Season C, for small scale farmers, irrigation was practiced in 28.0% of all cultivated plots.

Anti-erosion activities

In 2018 season A, for small scale farmers 68.3 % of all cultivated plots anti-erosion activities have been done, while for Large Scale Farmers, 63.5 % of all plots are protected against anti-erosion. In 2018 season B 2018, for small scale farmers 67.4% of all cultivated plots anti-erosion activities have been done, while for Large Scale Farmers, 61.2 % of all plots are protected against anti-erosion. In 2018 Season C, for small scale farmers, anti-erosion was practiced in 84.2% of all cultivated plots.

The methods of erosion control vary widely but in Season A 2018 cover plants/grasses were most used at 51.6% for small scale farmers and at 32.5% for large scale farmers, followed by ditches which were used at 12.2% for small scale farmers and at 29.4% for large scale farmers. In Season B 2018. In Season B 2018 cover plants/grasses were most used at 52.0% for small scale farmers and at 28.4 % for large scale farmers, followed by ditches which were used at 11.4% for small scale farmers and at 22.1% for large scale farmers. In Season C 2018 bed/bridges were most used at 49.7% f, followed by water drainage which were used at 32.7 % for small scale farmers.

Summary of Seasonal Agricultural Survey Main indicators

| No | Main SAS Indicator | SAS 2017 | | | SAS 2018 | | |
|----------|---------------------------------------------|----------|----------|----------|----------|----------|----------|
| | | Season A | Season B | Season C | Season A | Season B | Season C |
| 1 | Cultivated area for major crops (Ha) | | | | | | |
| | Maize | 210,609 | 85,130 | - | 218,179 | 78,151 | - |
| | Sorghum | 29,702 | 112,694 | - | 27,151 | 116,986 | - |
| | Paddy Rice | 16,922 | 17,283 | - | 16,938 | 16,739 | - |
| | Wheat | 3,313 | 7,448 | - | 4,490 | 7,735 | - |
| | Cassava | 219,845 | 164,529 | - | 194,717 | 188,485 | - |
| | Sweet potato | 87,725 | 85,200 | 7,609 | 87,456 | 79,983 | 5,683 |
| | Irish potato | 38,351 | 45,923 | 8,526 | 50,836 | 60,644 | 7,740 |
| | Yams & Taro | 35,321 | 22,028 | - | 11,406 | 19,287 | - |
| | Cooking banana | 96,571 | 93,549 | - | 85,524 | 90,175 | - |
| | Dessert banana | 35,430 | 32,575 | - | 30,110 | 34,153 | - |
| | Banana for beer | 105,847 | 100,348 | - | 111,213 | 108,091 | - |
| | Beans | 268,095 | 276,435 | 3,256 | 287,218 | 269,105 | 885 |
| | Pea | 9,373 | 10,298 | 103 | 15,121 | 10,612 | 228 |
| | Groundnuts | 25,004 | 20,451 | - | 20,474 | 20,983 | - |
| | Soybeans | 22,268 | 30,486 | 307 | 24,011 | 30,431 | 351 |
| | Vegetables | 19,969 | 19,010 | 3,525 | 13,794 | 12,480 | 3,017 |
| | Fruits | 6,551 | 6,844 | - | 5,975 | 6,677 | - |
| 2 | Harvested area for major crops (Ha) | | | | | | |
| | Maize | - | - | - | 218,179 | 78,151 | - |
| | Sorghum | - | - | - | 27,151 | 116,986 | - |
| | Paddy Rice | - | - | - | 16,938 | 15,842 | - |
| | Wheat | - | - | - | 4,490 | 7,735 | - |
| | Cassava | - | - | - | 35,897 | 56,216 | - |
| | Sweet potato | - | - | - | 87,456 | 79,983 | 5,683 |
| | Irish potato | - | - | - | 50,836 | 60,644 | 7,740 |
| | Yams & Taro | - | - | - | 11,411 | 19,287 | - |
| | Cooking banana | - | - | - | 21,404 | 19,767 | - |
| | Dessert banana | - | - | - | 5,176 | 7,355 | - |
| | Banana for beer | - | - | - | 35,396 | 36,018 | - |
| | Beans | - | - | - | 287,218 | 269,105 | 885 |
| | Peas | - | - | - | 15,121 | 10,612 | 228 |
| | Groundnuts | - | - | - | 20,474 | 20,983 | - |
| | Soybeans | - | - | - | 24,011 | 30,431 | 351 |
| | Vegetables | - | - | - | 13,647 | 12,480 | 3,017 |
| | Fruits | - | - | - | 4,264 | 4,522 | - |
| 3 | Crop area under permanent crops (%) | | | | | | |
| | Banana | | | | 17.29 | | |
| | Coffee | | | | 2.37 | | |
| | Tea | | | | 2.64 | | |
| | Fruits | | | | 0.46 | | |
| | Pasture | | | | 8.91 | | |

Summary of Seasonal Agricultural Survey Main indicators cont'd

| No | Main SAS indicator | SAS 2017 | | | SAS 2018 | | |
|-----------|-----------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | Season A | Season B | Season C | Season A | Season B | Season C |
| 4 | Production for major crops (MT) | | | | | | |
| | Maize | 324,368 | 85,912 | - | 332,670 | 91,534 | - |
| | Sorghum | 41,662 | 118,310 | - | 36,581 | 118,111 | - |
| | Paddy Rice | 55,217 | 64,715 | - | 57,934 | 55,946 | - |
| | Wheat | 3,651 | 7,224 | - | 5,950 | 7,525 | - |
| | Cassava | 451,362 | 590,481 | - | 486,440 | 640,759 | - |
| | Sweet potato | 574,500 | 483,898 | 23,966 | 661,583 | 498,790 | 26,358 |
| | Irish potato | 378,906 | 398,934 | 69,462 | 439,512 | 396,064 | 80,487 |
| | Yams & Taro | 129,630 | 93,131 | - | 70,653 | 97,331 | - |
| | Cooking banana | 415,868 | 315,481 | - | 406,044 | 353,652 | - |
| | Dessert banana | 113,032 | 111,312 | - | 112,283 | 117,057 | - |
| | Banana for beer | 456,585 | 326,729 | - | 434,356 | 346,304 | - |
| | Beans | 224,233 | 226,131 | 3,810 | 251,189 | 233,540 | 1,027 |
| | Peas | 6,768 | 5,600 | 55 | 9,001 | 5,689 | 137 |
| | Groundnuts | 11,873 | 8,805 | - | 12,546 | 9,734 | - |
| | Soybeans | 10,686 | 12,925 | 192 | 12,156 | 10,427 | 227 |
| | Vegetables | 133,118 | 155,476 | 30,305 | 162,936 | 145,277 | 40,417 |
| | Fruits | 54,940 | 16,378 | 414 | 35,884 | 17,711 | - |
| 5 | Yield for major crops (Kg/ha) | | | | | | |
| | Maize | 1,540 | 1,009 | - | 1,525 | 1,171 | - |
| | Sorghum | 1,403 | 1,050 | - | 1,347 | 1,010 | - |
| | Paddy Rice | 3,263 | 3,744 | - | 3,420 | 3,532 | - |
| | Wheat | 1,102 | 970 | - | 1,325 | 973 | - |
| | Cassava | 2,053 | 3,589 | - | 13,551 | 11,398 | - |
| | Sweet potato | 6,549 | 5,680 | 3,149 | 7,565 | 6,236 | 4,638 |
| | Irish potato | 9,880 | 8,687 | 8,147 | 8,646 | 6,531 | 10,399 |
| | Yams & Taro | 3,670 | 4,228 | - | 6,192 | 5,047 | - |
| | Cooking banana | 4,306 | 3,372 | - | 18,970 | 17,891 | - |
| | Dessert banana | 3,190 | 3,417 | - | 21,693 | 15,915 | - |
| | Banana for beer | 4,314 | 3,256 | - | 12,271 | 9,615 | - |
| | Beans | 836 | 818 | 1,170 | 875 | 868 | 1,160 |
| | Peas | 722 | 544 | 532 | 595 | 536 | 600 |
| | Groundnuts | 475 | 431 | - | 613 | 464 | - |
| | Soybeans | 480 | 424 | 627 | 506 | 343 | 646 |
| | Vegetables | 6,666 | 8,179 | 8,598 | 11,939 | 11,641 | 13,396 |
| | Fruits | 8,675 | 2,393 | - | 8,416 | 3,916 | - |
| 6 | Share of plots with pure cropping system (%) | | | | | | |
| | Small Scale Farmers | 26.6 | 26.7 | 78.9 | 36.4 | 32.5 | 77.8 |
| | Large Scale Farmers | 95.7 | 89.5 | - | 95.3 | 96.6 | - |
| 7 | Improved seeds used (%) | | | | | | |
| | For Small Scale Farmers | 6.2 | 95.4 | 8.6 | 11.0 | 5.4 | 13.3 |
| | For Large Scale Farmers | 52.0 | 59.7 | - | 53.8 | 5.4 | - |
| 8 | Percentage of plots with organic fertilizers application | | | | | | |
| | Small Scale Farmers | 49.9 | 34.7 | 51.9 | 48.2 | 38.6 | 62.8 |
| | Large Scale Farmers | 43.6 | 32.7 | - | 50.3 | 34.6 | - |
| No | Main SAS indicator | SAS 2017 | | | SAS 2018 | | |
| | | Season A | Season B | Season C | Season A | Season B | Season C |
| 9 | Percentage of plots with organic fertilizers application | | | | | | |
| | Small Scale Farmers | 49.9 | 34.7 | 51.9 | 48.2 | 38.6 | 62.8 |
| | Large Scale Farmers | 43.6 | 32.7 | - | 50.3 | 34.6 | - |
| 10 | Percentage of plots with inorganic fertilizers application | | | | | | |
| | Small Scale Farmers | 18.9 | 15.1 | 37.5 | 24.8 | 18.5 | 62.8 |
| | Large Scale Farmers | 43.7 | 32.5 | - | 42.8 | 33.0 | - |
| 11 | Percentage of plots with pesticides application | | | | | | |
| | Small Scale Farmers | 10.1 | 11.7 | 41.9 | 19.5 | 13.2 | 46.1 |
| | Large Scale Farmers | 38.0 | 31.8 | - | 42.1 | 32.7 | - |
| 12 | Use of Irrigation(Percentage) | | | | | | |
| | Small Scale Farmers | 4.0 | 4.6 | 23.6 | 5.0 | 4.8 | 28.0 |
| | Large Scale Farmers | 27.8 | 20.7 | - | 18.5 | 27.7 | - |
| 13 | Percentage of plot with Anti-erosion activities | | | | | | |
| | Small Scale Farmers | 67.6 | 64.4 | 82.7 | 68.3 | 67.4 | 84.2 |
| | Large Scale Farmers | 69.2 | 56.6 | - | 63.5 | 61.2 | - |
| 14 | Agriculture Gross Value Added / Ha at constant prices (Rwf/ha) | Year | | | | | |
| | | 2015 | | 2016 | | 2017 | |
| | | 708,621 | | 736,679 | | 832,374 | |

Source: NISR, SAS 2017 and 2018

1. Introduction

During the recent decades, agriculture has had a lot of transformations. It contributed around 30% of the GDP and employed over 70% of the Rwandan population¹. Over the course of Economic Development and Poverty Reduction Strategy I (EDPRS I), agriculture contributed significantly to poverty reduction. In recognition of its potential in economic development, food security and poverty reduction, the government has set a very ambitious agricultural agenda aiming at an annual average growth of 8.5% over the course of EDPRS II (2012-2017). Therefore, to provide timely and reliable statistics for the agricultural sector, NISR in collaboration with MINAGRI, introduced a new program of agricultural surveys that uses a dual sampling frame approach, based on probability sampling and estimation methods combining an area frame and a list frame. Since the 2013 agricultural year the NISR has been conducting the Seasonal Agricultural Surveys (SAS) to regularly and accurately provide the needed statistics on the agricultural economy of Rwanda.

To accommodate the need for additional statistical inference at district level, the area sampling was redesigned with new stratification in 2017 to provide more efficient estimation of both crops and livestock. To ensure more precise estimates at the district level the number of secondary sampling units or segments were up to 780 segments. Additional statistical sampling methodology enhancements were included in the survey design utilizing point-sampling for crop area estimation in order to minimize non-sampling error. Also, field data collection technology has been improved by replacement of paper-based questionnaires data collection with state-of-the-art tablets/computers which enable the use of Computer Assisted Personnel Interviewing (CAPI) methodology. CAPI helped to improve the interview process and provide more accurate data and facilitate quick uploading of the reported data in the field to NISR headquarters for processing.

1.1 Objectives of the Survey

The main objective of the Seasonal Agricultural Survey is to provide timely, accurate, reliable and comprehensive agricultural statistics that describe the structure of agriculture in Rwanda mainly in terms of land use, crop area, yield and crop production to monitor current agricultural and food supply conditions and to facilitate evidence-based decision making for the development of the agricultural sector.

1.2 Time frame

Data collection is done three times a year, following three agricultural seasons in Rwanda covering the approximate monthly periods as follows:

- Season A starts in September and ends with February of the following year
- Season B starts in March and ends with June of the same year; and
- Season C starts in July and ends in September of the same year.

¹ NISR-GDP National Accounts

Field enumerator and their supervisors are on the field for each season utilizing specific enumeration procedures for each phase of the survey based on the survey sample design for crop area estimation, yield and production. The following contents of this report will help explain details of the methodology used for SAS and will provide key findings on farm characteristics, agricultural inputs and agricultural practices obtained from SAS 2018.

2. Methodology used for the conducting the survey

In order to provide the basis for conducting probability surveys based on complete coverage of the farm level, and as a better way of collecting agricultural data and finding better precise survey estimates, SAS used a Multiple-Frame Sampling (MFS) methodology by which, area frame was constructed and survey sample was drawn from it. Apart from that, a list frame of large-scale farmers (LSF), with at least 10 hectares of agricultural holdings, was done to complement the area frame just to cover crops mostly grown by large scale farmers and that cannot be easily covered in area frame. To construct area frame, the process involves many steps. Some of the key steps are as follows:

2.1 Land stratification

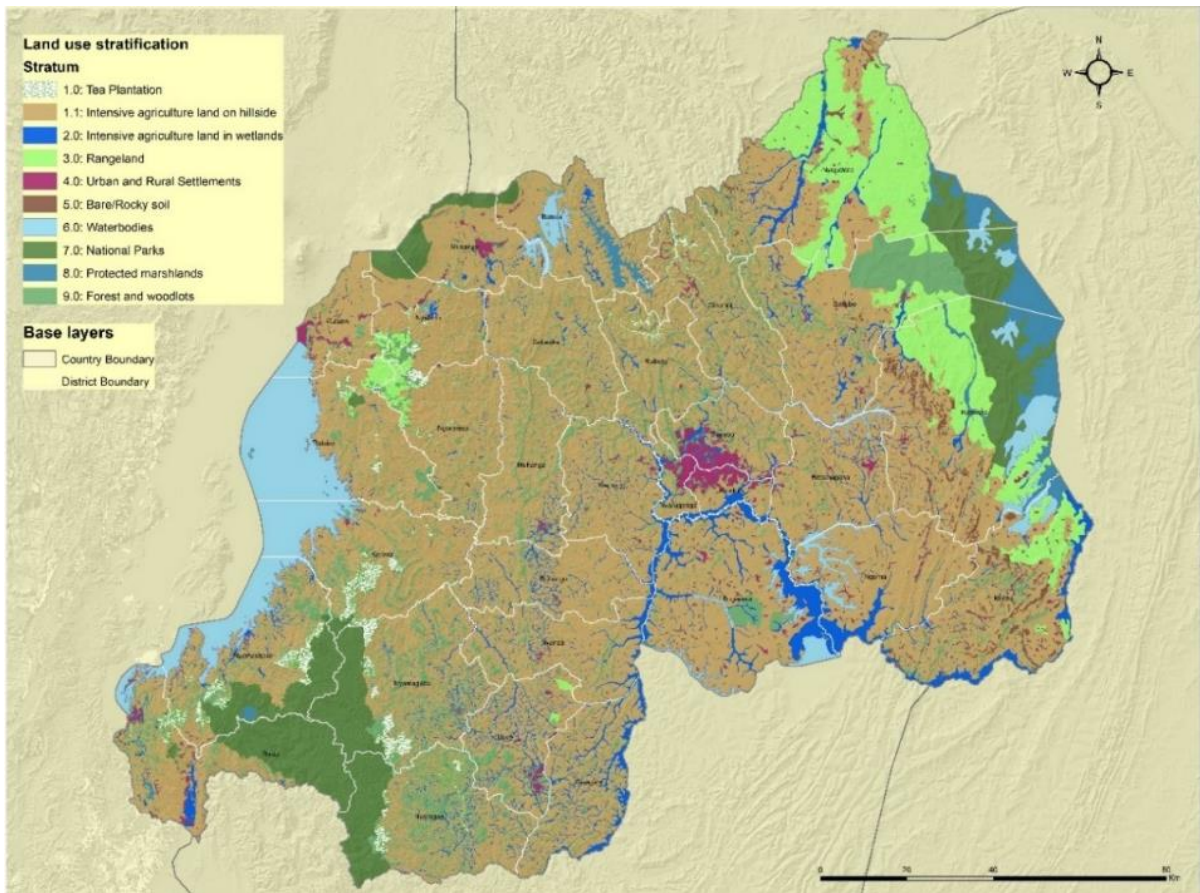
The distribution of crops across districts of Rwanda varies significantly. The purpose of stratification was to construct a frame by dividing the land of every district of Rwanda into homogenous land use groups or land use strata among which only strata with potential land for agriculture were taken into consideration in allocating sample to each stratum. Using orthophotos imagery from the Rwanda National Land Center (2008) and Satellite images (World View) from Digital Globe (2010-2016), and basing on land cover, and cropping or livestock activity intensity, the stratification ended up with 10 strata (as shown in Table 1) in the whole country. Among 10 strata only 4 strata which are 1.0 (tea plantations), 1.1 (intensive agriculture land on hillsides), 2.0 (intensive agriculture land in marshlands) and 3.0 (rangelands) are essentially representative of the country land potential for agriculture and cover the total area of 1,787,571.2 hectares(ha). The remaining land use strata are representative of all the non-agricultural land in Rwanda.

Table 1 : List of strata

| Code | Stratum | Area (Ha) | Percentage |
|------|------------------------------------------|-------------|------------|
| 1.0 | Tea plantations | 34,262.8 | 1.4 |
| 1.1 | Intensive agriculture land on Hillsides | 1,448,045.5 | 57.2 |
| 2.0 | Intensive agriculture land in marshlands | 126,441.3 | 5.0 |
| 3.0 | Rangelands area | 178,821.6 | 7.1 |
| 4.0 | Urban area and rural settlements | 56,895.1 | 2.2 |
| 5.0 | Non-crop land | 17,341.3 | 0.7 |
| 6.0 | Water bodies | 152,304.8 | 6.0 |
| 7.0 | National Parks | 189,075.1 | 7.5 |
| 8.0 | Uncultivated "protected" marshlands | 47,224.3 | 1.9 |
| 9.0 | Forest and woodlands | 278,968.0 | 11.0 |

Source: NISR, SAS 2017

Figure 1. Land use strata dispersion in the country



Source: NISR, SAS 2017

Table 2: Classification of potential land for agriculture per district (ha)

| District | Tea plantation | Intensive cropland on hillsides | Intensive cropland in marshlands | Rangelands | Total |
|--------------------------------|-----------------|---------------------------------|----------------------------------|------------------|--------------------|
| Nyarugenge | - | 5,894.6 | 1,698.0 | - | 7,592.6 |
| Gasabo | - | 25,561.9 | 3,190.7 | - | 28,752.7 |
| Kicukiro | - | 7,597.3 | 2,686.2 | - | 10,283.5 |
| Nyanza | - | 53,698.6 | 6,302.5 | - | 60,001.1 |
| Gisagara | - | 48,939.5 | 11,095.9 | - | 60,035.4 |
| Nyaruguru | 3,531.7 | 43,598.2 | 3,674.0 | - | 50,803.9 |
| Huye | - | 39,249.1 | 6,358.0 | 1,051.5 | 46,658.6 |
| Nyamagabe | 6,217.8 | 50,410.8 | 3,402.8 | - | 60,031.4 |
| Ruhango | - | 52,253.8 | 4,985.6 | - | 57,239.4 |
| Muhanga | - | 49,946.6 | 1,955.5 | - | 51,902.1 |
| Kamonyi | - | 52,483.8 | 5,816.4 | - | 58,300.2 |
| Karongi | 6,682.8 | 55,904.7 | 799.4 | - | 63,386.8 |
| Rutsiro | 1,652.2 | 50,755.4 | 505.1 | 3,613.3 | 56,526.0 |
| Rubavu | 411.7 | 26,886.6 | - | 822.2 | 28,120.5 |
| Nyabihu | 1,780.3 | 37,199.4 | 801.9 | 2,691.3 | 42,473.0 |
| Ngororero | 1,472.3 | 51,198.6 | 914.3 | 3,910.9 | 57,496.1 |
| Rusizi | 953.5 | 38,535.1 | 3,069.1 | - | 42,557.7 |
| Nyamasheke | 7,549.0 | 44,064.1 | 2,371.1 | - | 53,984.2 |
| Rulindo | 1,528.5 | 41,718.2 | 1,861.0 | - | 45,107.7 |
| Gakenke | - | 56,044.5 | 1,489.5 | - | 57,534.0 |
| Musanze | 7.5 | 33,596.6 | 1,096.9 | - | 34,701.0 |
| Burera | - | 44,013.0 | 1,459.7 | - | 45,472.7 |
| Gicumbi | 2,475.5 | 61,872.1 | 1,674.2 | - | 66,021.8 |
| Rwamagana | - | 55,324.6 | 3,235.5 | - | 58,560.2 |
| Nyagatare | - | 62,330.9 | 8,108.5 | 91,762.0 | 162,201.3 |
| Gatsibo | - | 71,583.4 | 4,786.9 | 12,813.8 | 89,184.1 |
| Kayonza | - | 64,327.7 | 3,156.7 | 46,806.1 | 114,290.4 |
| Kirehe | - | 66,696.0 | 10,604.4 | 15,350.6 | 92,650.9 |
| Ngoma | - | 68,594.0 | 8,088.6 | - | 76,682.6 |
| Bugesera | - | 87,766.1 | 21,253.1 | - | 109,019.2 |
| Total Agricultural land | 34,262.8 | 1,448,045.5 | 126,441.3 | 178,821.6 | 1,787,571.2 |

Source: NISR, SAS 2017

Realizing that stratum 1.0 (tea plantations) is totally covered by National Agriculture Export Board (NAEB), NISR conducted the seasonal agricultural survey using a population of 3 strata (strata 1.1, 2.0 and 3.0) to cover other major crops.

Table 3 : Share (%) of area occupied by agricultural strata within the country

| District | Intensive cropland on hillsides | Intensive cropland in marshlands | Rangelands |
|----------------|------------------------------------|-------------------------------------|------------|
| Bugesera | 6.1 | 16.8 | - |
| Gatsibo | 4.9 | 3.8 | 7.2 |
| Ngoma | 4.7 | 6.4 | - |
| Kirehe | 4.6 | 8.4 | 8.6 |
| Kayanza | 4.4 | 2.5 | 26.2 |
| Nyagatare | 4.3 | 6.4 | 51.3 |
| Gicumbi | 4.3 | 1.3 | - |
| Gakenke | 3.9 | 1.2 | - |
| Karongi | 3.9 | 0.6 | - |
| Rwamagana | 3.8 | 2.6 | - |
| Nyanza | 3.7 | 5.0 | - |
| Kamonyi | 3.6 | 4.6 | - |
| Ruhango | 3.6 | 3.9 | - |
| Ngororero | 3.5 | 0.7 | 2.2 |
| Rutsiro | 3.5 | 0.4 | 2.0 |
| Nyamagabe | 3.5 | 2.7 | - |
| Muhanga | 3.4 | 1.5 | - |
| Gisagara | 3.4 | 8.8 | - |
| Nyamasheke | 3.0 | 1.9 | - |
| Burera | 3.0 | 1.2 | - |
| Nyaruguru | 3.0 | 2.9 | - |
| Rulindo | 2.9 | 1.5 | - |
| Huye | 2.7 | 5.0 | 0.6 |
| Rusizi | 2.7 | 2.4 | - |
| Nyabihu | 2.6 | 0.6 | 1.5 |
| Musanze | 2.3 | 0.9 | - |
| Rubavu | 1.9 | - | 0.5 |
| Gasabo | 1.8 | 2.5 | - |
| Kicukiro | 0.5 | 2.1 | - |
| Nyarugenge | 0.4 | 1.3 | - |
| Overall | 100 | 100 | 100 |

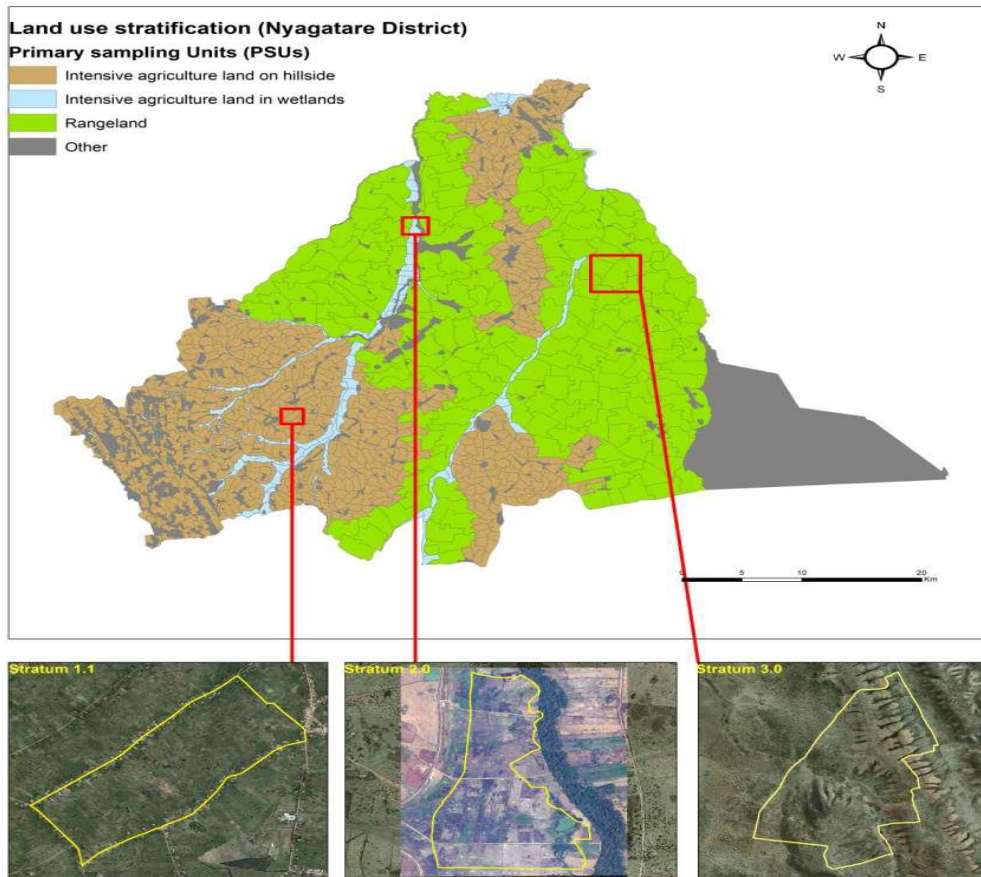
Source: NISR, SAS 2018

2.2 Sampling of segments

Within each stratum, the land can be divided into all the sampling units or segments and then a sample of segments selected for a survey. This would be a very time-consuming activity. To manage time, a multi-stage sampling procedure was used as follows: At the first stage, for each district, the agriculture strata (1.1, 2.0 & 3.0) have been divided into larger sampling units called first-step or primary sampling units (PSUs) (as shown in Figure 2).

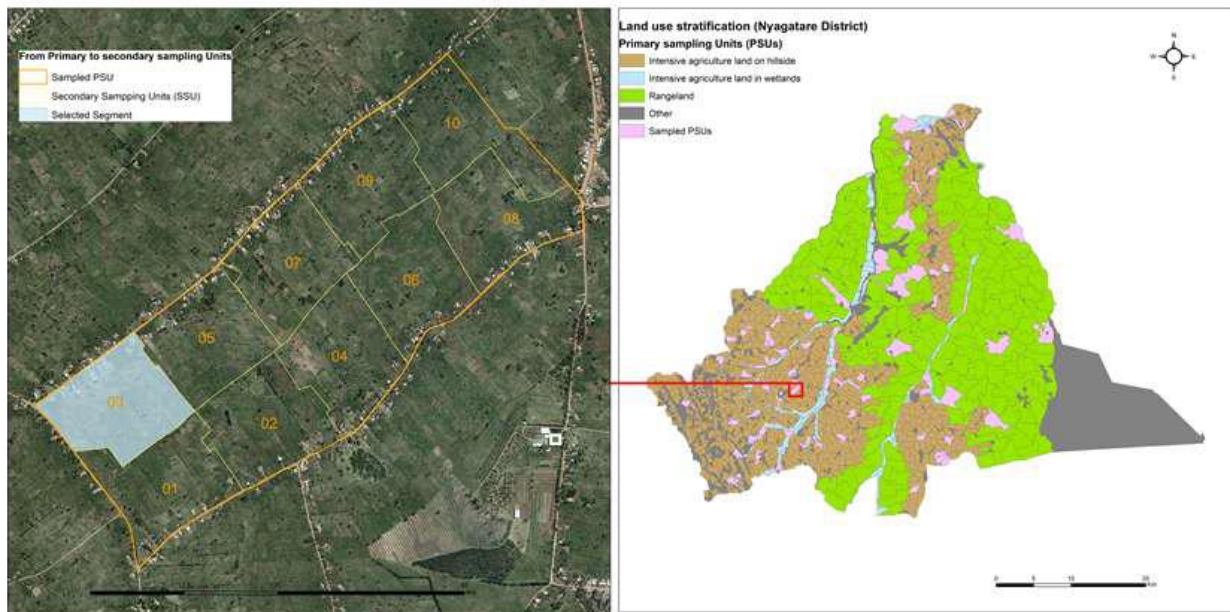
Strata 1.1 and 2.0 have been divided into PSUs of around 100 ha while stratum 3.0 has been divided into PSUs of around 500 ha. Then a given number of PSUs to be selected for each stratum, given its weight (by probability proportional to size), was assigned in every district. The systematic sampling method is applied to determine the PSUs to be considered in the second sampling stage. For 2018 SAS, 780 PSUs were sampled in the entire country and were used in the second stage to sample SSUs.

Figure 2: Construction of PSUs (Example of Nyagatare District)



Source: NISR, SAS 2017

At the second stage, the only the sampled PSUs were divided into second sampling units (SSUs), commonly known as segments (as shown in Figure 3), of around 10 ha for strata 1.1 and 2.0 and around 50 ha for stratum 3.0 For each PSU, only one SSU was selected by random sampling method without replacement. Finally, 780 SSUs were sampled in the whole country.

Figure 3: Construction of SSUs (Example of Nyagatare District)

Source: NISR, SAS 2017

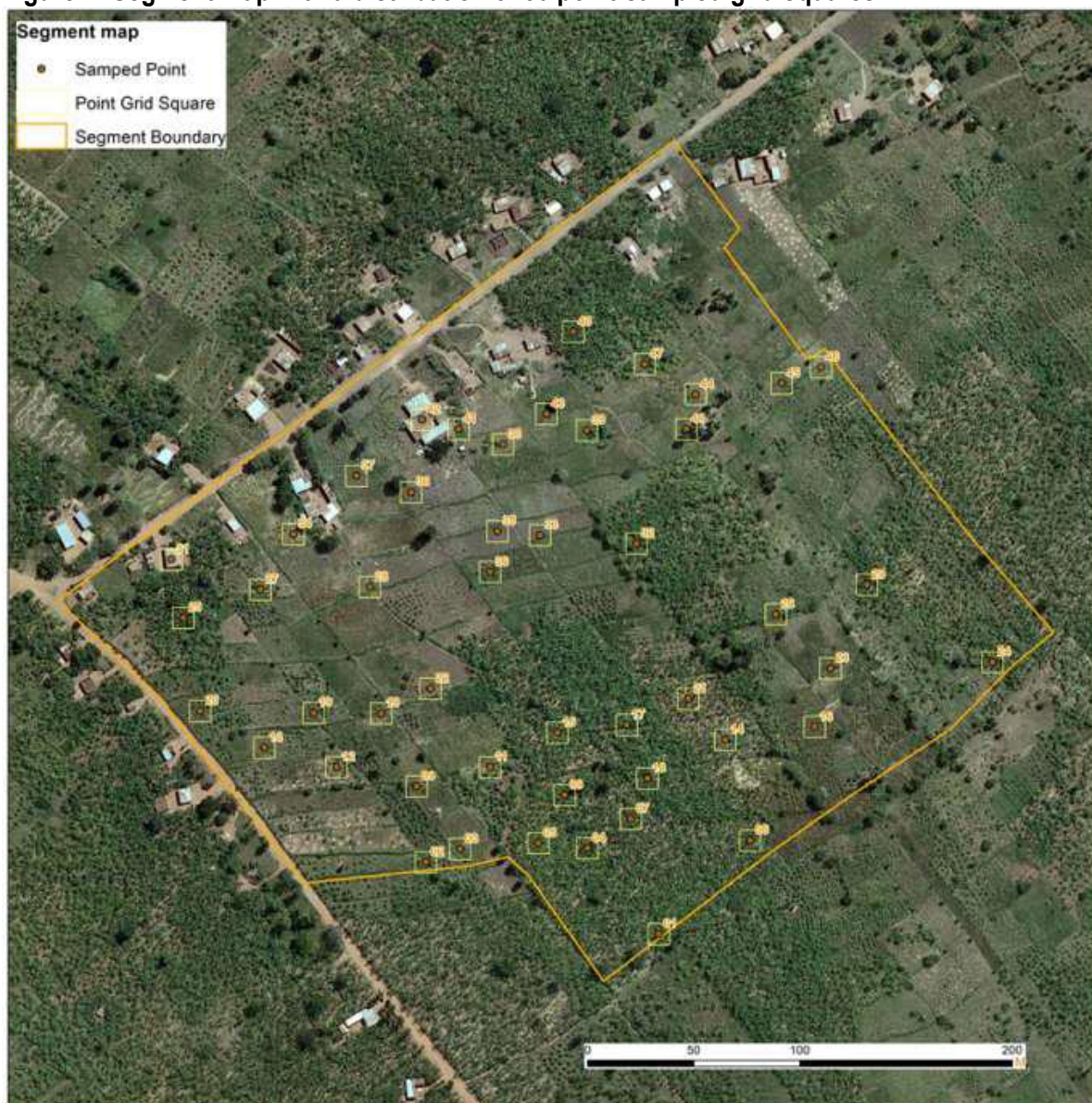
At the last sampling stage, in strata 1.1 and 2.0 each segment of an average size of 10 ha (100,000 Square meters) has been divided into around 1,000 grids squares of 100 Sq. meters each, while for stratum 3.0 around 5,000 grids squares of 100 Sq. meters each have been divided. A point was placed at the center of every grid square and named a grid point (A grid point is a geographical location at the center of every grid square). A random sample of 5% of the total grid points were selected in each segment of strata 1.1 and 2.0 whereas a random sample of 2% of total grid points was selected in each segment of stratum 3.0. Grids points are reporting units within a segment, where enumerators go to every grid point, locate and delineate the plots in which the grid falls, and collect records of land use and related information. The recorded information represents the characteristics of the whole segment which are extrapolated to the stratum level and hence the combination of strata within each district provides district area related statistics.

Table 4 : Number of selected segments per district

| District | Number of segments (Season A& B) | Total area (in ha) | Share (%) | Number of segments (Season C) | Total area (in ha) | Share (%) |
|--------------|-------------------------------------|-----------------------|--------------|----------------------------------|-----------------------|--------------|
| Nyarugenge | 20 | 201.28 | 1.82 | 3 | 29.92 | 1.96 |
| Gasabo | 20 | 198.42 | 1.80 | 3 | 29.33 | 1.93 |
| Kicukiro | 16 | 160.43 | 1.45 | - | - | - |
| Nyanza | 25 | 248.29 | 2.25 | 7 | 67.86 | 4.46 |
| Gisagara | 27 | 270.07 | 2.45 | 11 | 110.93 | 7.29 |
| Nyaruguru | 20 | 199.00 | 1.80 | 4 | 40.29 | 2.65 |
| Huye | 24 | 321.27 | 2.91 | 5 | 48.98 | 3.22 |
| Nyamagabe | 20 | 201.06 | 1.82 | 4 | 39.91 | 2.62 |
| Ruhango | 20 | 200.86 | 1.82 | 4 | 40.20 | 2.64 |
| Muhanga | 20 | 199.86 | 1.81 | 4 | 39.14 | 2.57 |
| Kamonyi | 20 | 203.44 | 1.84 | 3 | 30.52 | 2.00 |
| Karongi | 20 | 200.43 | 1.82 | 4 | 40.14 | 2.64 |
| Rutsiro | 24 | 395.90 | 3.59 | 4 | 40.18 | 2.64 |
| Rubavu | 18 | 263.63 | 2.39 | 10 | 99.00 | 6.50 |
| Nyabihu | 20 | 201.73 | 1.83 | 12 | 122.34 | 8.03 |
| Ngororero | 24 | 405.60 | 3.67 | 4 | 40.23 | 2.64 |
| Rusizi | 22 | 220.78 | 2.00 | 3 | 29.84 | 1.96 |
| Nyamasheke | 20 | 201.42 | 1.82 | 2 | 19.86 | 1.30 |
| Rulindo | 20 | 200.95 | 1.82 | 4 | 40.16 | 2.64 |
| Gakenke | 20 | 198.62 | 1.80 | 4 | 40.02 | 2.63 |
| Musanze | 20 | 198.56 | 1.80 | 13 | 129.67 | 8.52 |
| Burera | 20 | 198.78 | 1.80 | 17 | 169.20 | 11.11 |
| Gicumbi | 20 | 200.77 | 1.82 | 3 | 29.79 | 1.96 |
| Rwamagana | 24 | 240.15 | 2.18 | 4 | 40.20 | 2.64 |
| Nyagatare | 60 | 1,087.72 | 9.85 | 7 | 69.30 | 4.55 |
| Gatsibo | 45 | 1,098.74 | 9.95 | 5 | 55.02 | 3.61 |
| Kayonza | 53 | 1,498.21 | 13.57 | 1 | 9.79 | 0.64 |
| Kirehe | 53 | 1,173.23 | 10.63 | 2 | 20.02 | 1.31 |
| Ngoma | 16 | 160.91 | 1.46 | - | - | - |
| Bugesera | 49 | 488.30 | 4.42 | 5 | 50.81 | 3.34 |
| Total | 780 | 11,038.4 | 100 | 152 | 1,522.6 | 100 |

Source: NISR, SAS 2018

At the last sampling stage, in strata 1.1 and 2.0 each segment of an average size of 10 ha (100,000 Square meters) has been divided into around 1,000 grids squares of 100 Sq. meters each, while for stratum 3.0 around 5,000 grids squares of 100 Sq. meters each have been divided. A point was placed at the center of every grid square and named a grid point (A grid point is a geographical location at the center of every grid square). A random sample of 5% of the total grid points were selected in each segment of strata 1.1 and 2.0 whereas a random sample of 2% of total grid points was selected in each segment of stratum 3.0. Grids points are reporting units within a segment, where enumerators go to every grid point, locate and delineate the plots in which the grid falls, and collect records of land use and related information. The recorded information represents the characteristics of the whole segment which are extrapolated to the stratum level and hence the combination of strata within each district provides district area related statistics.

Figure 4: Segment map with a distribution of 50 point-sampled grid squares

Source: NISR, SAS 2018

2.3. Sample size determination

SAS 2018 design specifically focused on the need to keep providing accurate district level estimates. For SAS 2017 the sample size was 960 PSUs which was a large sample just to cover many indicators including the ones done every seasons and others done every three years. For SAS 2018 whose purpose was to work on indicators that are produced every agricultural season, the sample was downsized from 960 PSUs (sampled in 2017) up to 780 PSUs for the entire country which were allocated across the three main agricultural strata. Tables 4 show the distribution of the selected PSUs in each district. Table 4 shows the distribution of the selected segments in each district.

Previous SAS sample size determination considers that there are L districts in the stratum concerned, for which we seek to determine the numbers of sample segments to allocate within districts, such that

the stratified sample mean has variance no larger than a pre-specified value, V_s , for the given stratum:²

$$\text{Var}(\bar{y}_{st}) \leq V_s \quad (1)$$

where the stratified sample mean of hectares of cultivated land per segment is defined by:

$$\bar{y}_{st} = \sum_{i=1}^L W_i \bar{y}_i \quad (2)$$

where $W_i = (N_i / N)$ denotes the population weight for the i-th district, which is the ratio of the total number of population segments (N_i) in the i-th district ($i=1,2,\dots,L$, where L is the number of districts in given stratum) to the number of segments in the population (N), as specified in the area frame for the specific type of agriculture involved (classified as Strata 1, 2 and 3 by the NISR); and \bar{y}_i is the sample mean of hectares of cultivated land in the n_i sample segments in the i-th district.

The variance of the stratified sample mean is given by:

$$\text{Var}(\bar{y}_{st}) = \sum_{i=1}^L W_i^2 (1 - f_i) \left\{ \frac{S_i^2}{n_i} \right\} \quad (3)$$

where $f_i = (n_i / N_i)$ is the sampling fraction of the number of sample segments for the i-th district; and S_i^2 is the mean square of hectares of cultivated land per segment in all segments of the i-th district, as defined by:

$$S_i^2 = \frac{1}{N_i - 1} \sum_{j=1}^{N_i} (Y_{ij} - \bar{Y}_i)^2$$

where Y_{ij} denotes the number of hectares of cultivated land in the j-th population segment of the i-th district;

and $\bar{Y}_i = N_i^{-1} \sum_{j=1}^{N_i} Y_{ij}$ is the population mean hectares of cultivated land per segment in the i-th district.

It can be shown that the total sample size, n, which satisfies the variance constraint in equation (1), will be such that:

$$n \geq \frac{(\sum_{i=1}^L W_i S_i)^2}{V_s + N^{-1} \sum_{i=1}^L W_i S_i^2} \quad (5)$$

and that the sample sizes in the individual districts in the stratum involved must satisfy:

² For Stratum 1, $L=30$, but in Stratum 3, $L=4$, as noted above.

$$n_i \geq W_i S_i \times \frac{\sum_{j=1}^L W_j S_j}{V_s + N^{-1} \sum_{j=1}^L W_j S_j^2}, \quad i = 1, 2, \dots, L, \quad (6)$$

[cf. Fuller (2009: 21); and Schaeffer, Mendenhall & Ott (1996: equations (5.6) – (5.10)].

2.4 Estimation Methodology

This section discusses the statistical formulation that NISR uses for each level of SAS summarization. The prior SAS required complete measurement of all fields in the segment to obtain the total hectares in the segment for summarization purposes. For 2018 SAS 2018 the initial level of summation for relates to estimation of the area segment crop land based on enumerates using a point-sampling of field plots for crop area enumeration within the area sample segment.

2.4.1 Estimation formulas

i. Estimation of the Mean

The overall mean area of cultivated land per segment is \bar{Y} and is written as follows:

$$\bar{Y} = \sum_{k=1}^K W_k \bar{Y}_k, \text{ where } K \text{ denotes the number of strata;}$$

The unbiased estimator of \bar{Y} is $\bar{y}_{st} = \sum_{i=1}^K W_i \bar{y}_i$

ii. Estimation of the total cultivated area

For stratum i , the total of Y is estimated by $N_i \bar{y}_i$, the unbiased estimate of the total cultivated land Y of

$$\hat{T}(Y) = \sum_{i=1}^K N_i \bar{y}_i$$

the universe is:

The term “ W ” used for data weighting of the sample is called “extrapolation coefficient” or “expansion factor”.

The estimators $\hat{T}(Y)$ and \bar{y}_{st} are unbiased estimators of the total and the mean because they satisfy the following conditions: $E[\hat{T}(Y)] = T(Y)$ and $E[\bar{y}_{st}] = \bar{Y}$

iii. Variance of the estimators

$$Var[\bar{y}_{st}] = \sum_{i=1}^K W_i^2 (1 - f_i) \frac{S_i^2}{n_i} \text{ and } Var[\hat{T}(Y)] = \sum_{i=1}^K N_i^2 (1 - f_i) \frac{S_i^2}{n_i}$$

Estimation of Variances of Estimators

$$\hat{V}ar[\bar{y}_{st}] = \sum_{i=1}^K W_i^2 (1 - f_i) \frac{s_i^2}{n_i} \text{ and } \hat{V}ar[\hat{T}(Y)] = \sum_{i=1}^K N_i^2 (1 - f_i) \frac{s_i^2}{n_i}$$

Estimates of variance estimators of the mean and the total cultivated area are used to calculate the standard deviations of the estimators, defined by the square roots of the variance estimators and, thus, to obtain confidence intervals for the appropriate parameters.

2.4.2 Segment-Level Estimation used

i. Point-sampling plot crop estimation (segment level)

Segments are enumerated using point-sampling for seasonal crop area estimation and the survey design specifies a 5% sampling rate of points. The GIS team in headquarters will determine the area of each sample segment and the number of grid squares which are multiplied by 5% to determine the number of sampled grid squares. By using a random number generator, random point-sample grid-point locations will be generated in each digitized sample segment, each representing the area of the 10m-by-10m grid square or 100 square meters or one-hundredth hectare (.01 ha).

The GIS team for each j th sample segment in the i th stratum that will be point-sampled will need to have determined its point-sample- (or grid square) population size (N_{ij}) which is approximately equal to the segment size total hectares divided by .01 ha/point. The total point-samples in the j th segment of the i th stratum will approximately be equal to (N_{ij}) times 5%. The actual point-sample is the center-point of each randomly selected grid square in the sample segment.

For SAS crop area estimation, the field enumerator team visit each sampled point-sample location and screen the point and determine what crops are being cultivated within the plot that the point-sample is located. The segment level estimator of area for each crop requires the count or number of point-samples within the sample segment indicating the presence of each crop being cultivated in the plot at each point-sample GPS location coordinate, and the count for each k th crop in the n_{ij} segment point-samples in the i th stratum and j th segment can be represented as: $c_{ijk} = \sum_{k=1}^{n_{ij}} (\text{count of point})$. The k th crop area estimate at the segment level becomes: $X_{ijk} = \left(\frac{N_{ij}}{n_{ij}}\right) (.01\text{ha per point – sample})(c_{ijk})$ = in the i th stratum and the j th sample.

Example: The following is a simplified example supposing the entire segment is planted to rice just for illustration purposes of the estimation process at segment-level. Suppose we have a 10-hectare segment and the GIS team determines the sample segment has 1000 grid squares or point-samples which is equivalent to a population size $N_{ij} = 1000$ that are 10m-by-10m or 100sq. m. each or .01 ha each. A 5% sample of 1000 = (1000 times .05) = 50 point-samples (n_{ij}). The area estimator X_{ijk} becomes = $\left(\frac{1000}{50}\right) (.01 \text{ ha per point – sample})(c_{ijk})$. If all point-samples fall in rice plots, then $X_{ij(k=\text{rice})}$ becomes = $\left(\frac{1000}{50}\right) (.01\text{ha per point – sample})(50) = 10$ hectares of rice.

ii. Stratum-level estimation

SAS sample sizes at the stratum level are relatively small and uses a systematic sample to ensure uniform distribution of the sample and provide a representative sample at the district level. The sampling in each stratum used a replicated design of two segments per replicate. A replicated sample is a useful statistical sampling method to allow making adjustments to the sample allocation. Replication will allow for an adjustment in stratum sample sizes for future SAS.

The selection of additional replicates was accomplished to allow rotation of a portion of the replicates in each stratum each survey year to reduce respondent burden. A minimum of two segments per replicate are required and a minimum of two replicates per stratum are necessary for variance calculation. The

replicated design also simplifies the calculation of crop area totals and their variance estimation as follows:

Stratum-level estimator of the population mean μ for each crop area estimate using n_s = number of replicated systematic samples in the stratum,

$\hat{\mu} = \sum_{i=1}^{n_s} \frac{\bar{y}_i}{n_s}$, where \bar{y}_i is the i th replicate mean of the two segments per replicate for each crop area estimate, or variable (X) in the stratum. Thus, each crop stratum mean estimate is simply an average of the replicate averages.

Stratum-level estimator of the population total τ crop area estimate using n_s = number of replicated systematic samples in the stratum,

$\hat{\tau} = N\hat{\mu} = N\sum_{i=1}^{n_s} \frac{\bar{y}_i}{n_s}$, where \bar{y}_i is the i th replicate mean of the two segments per replicate for each crop area estimate, or variable (X) in the stratum, and N = total number of segments in the stratum. Thus, for Stratum I thru IV each crop stratum total area estimate is simply the stratum mean crop area estimate per segment times the number of segments (N) in the stratum.

Stratum-level variance estimator of $\hat{\mu}$ for each crop area estimate using n_s = number of replicated systematic samples in the stratum,

$\hat{V}(\hat{\mu}) = \left(\frac{N-n}{N}\right) \left(\frac{\sum_{i=1}^{n_s} (\bar{y}_i - \hat{\mu})^2}{n_s(n_s-1)}\right)$, where \bar{y}_i is the i th replicate mean of the two segments per replicate for each crop area estimate, or crop area variable (X) in the stratum, and N = total number of segments in the stratum, and n = number of sample segments in the stratum.

Stratum-level variance estimator of $\hat{\tau}$ for each crop area estimate using n_s = number of replicated systematic samples in the stratum,

$\hat{V}(\hat{\tau}) = N^2\hat{V}(\hat{\mu}) = N^2 \left(\frac{N-n}{N}\right) \left(\frac{\sum_{i=1}^{n_s} (\bar{y}_i - \hat{\mu})^2}{n_s(n_s-1)}\right)$, where \bar{y}_i is the i th replicate mean of the two segments per replicate for each crop area estimate, or crop area variable (X) in the stratum, and N = total number of segments in the stratum, and n = number of sample segments in the stratum.

iii. District-Level Estimation used

The district level estimates are simply the summation of all stratum level totals for each crop area ($\hat{\tau}$) and their variance [$\hat{V}(\hat{\tau})$] estimates. For clarification purposes the district level crop total estimate is simply the addition of all three-stratum crop total estimates. There is no district level expansion involved because the district sampling is conducted within each stratum and the crop data is expanded at the stratum level for a district estimate, and thus, the district total is simply the summation of all stratum totals within each district.

This is the primary level of estimation used for publication of questionnaire data including most indicators. It is also the level at which any ratio estimates will be made for publication such as crop yield which is a derived value from the division of crop district total production by the total area for example. It

should be noted that specifically for crop yield based on two different surveys that the ratio estimator variance calculation is inappropriate.

iv. National-Level Estimation used

The national level estimates are simply the summation of all district level totals for each crop area ($\hat{\tau}$) and their variance [$\widehat{V}(\hat{\tau})$] estimates. This is also a primary level of estimation used for publication of questionnaire data including indicators. Also, at the national level the ratio estimates will be made for publication such as crop yield which is a derived value from the division of the summation of all district crop total production estimates by the total summation of area for example. It should be noted that specifically for crop yield based on two different surveys that the ratio estimator variance calculation is inappropriate.

2.5 Data Collection

2.5.1 Data Collection Tools

i. Screening Questionnaire

A Screening questionnaire was used to collect information that enabled identification of a plot and its land use using the plot questionnaire.

ii. Plot Questionnaire

For point-sampling the plot questionnaire is concerned with the collection of data on characteristics of crop identification, inputs (seeds, fertilizers, labor ...), agricultural practices, crop production and use of production.

2.5.2 Data collection activity

Data collection consists of two distinct phases: The first Phase, known as screening activity, consists of visiting all sampled segments and delineating all plots in which the sampled grid points are fallen and thereafter recording the related information using screening questionnaire. The second phase consists of visiting the sub-sampled agricultural plots from screened plots in phase one as well as all Large-Scale Farmers having cultivated plots in the season the survey is being conducted. This phase is conducted in the period of harvesting where farmers are requested to provide information about sowing period and harvesting period, inputs used, agricultural practices done on the plots, the crop production and its use.

For SAS 2018 the NISR employed around 151 field workers in the form of two-person teams to conduct the fieldwork. The fieldwork consisted of a Phase 1 for segment screening and a Phase 2 for plot data collection. Training was provided to all fieldwork personnel on the data collection methodologies associated with the use of GPS for point-sampling and computer tablet questionnaires used for plot data collection and farmer interviews. The tablet computer assisted data collection and interview allowed for very fast and efficient uploading and transfer of the enumerated data from the field to NISR headquarters for processing. The tablet software instruments (electronic version of the paper questionnaires) allowed for instantaneous checking of the respondent data and automatically directed the enumerator questioning to reduce non-sampling errors within the data collection.

The computer assisted personal interview (CAPI) data collection methodology was used based on three different software applications: “Collector” which is GIS based and is used to help identify and navigate the enumerator team to the exact GPS point-sample location and for mapping the plot boundary for GIS area determination, “survey 123” which is an electronic instrument or questionnaire for farmer interview data collection, and “Cs Entry” which is a CPro data entry application used for computer assisted personal interviewing (CAPI) on Android tablets and suite of data processing tools.

i. Teams and Supervision

SAS 2018 used 151 fieldworkers and 30 team leaders. All fieldwork staff in 2018 held a degree in agriculture sciences and were trained by NISR headquarter staff before starting data collection. Higher level supervision staff from NISR visited the field teams during each phase of data collection to ensure data quality control.

ii. Fieldwork Materials

Each enumerator and team leader had adequate materials composed of enumerator’s instruction manual, android tablet, charger, Power banks, measuring tapes, pens, notebooks, pencils, calculator, weighing scales, Global Positioning System (GPS), boots, first aid equipment, etc. Each field enumeration team was assigned a vehicle.

iii. Field data collection procedures

Before proceeding to the field, enumerators and their team leaders have to check if they have required materials for their fieldwork. All field enumeration team members and staff are required to arrive early in the field for both segment and interviews with the LSF. For each segment, enumerators are required to first familiarize themselves with the segment boundaries. They use their tablet GPS to guide them to each of the point-sampled and automatically record the geographical coordinates and the time/date stamp at each point-sample within the segment during the enumeration process to know the actual time of the fieldwork.

iv. Screening Activity of the Segment

After locating and identifying segment boundaries, enumerators team proceeds to let their tablet GPS guide them to locate accurately each of the sampled grid points inside the segment. Enumerators identify plot that each sample point falls within and identify the boundaries of each of these plots. Guidelines of identification and delineation of a plot using the tablet software follow instructions learned from training and set forth in the survey instructions manual. Screening of LSF plots does not have grid points as segments. Instead, the screening is done all over the whole compound of LSF following guidelines defining a plot in Seasonal Agriculture Survey.

v. Farm Interview and data quality assurance

A plot questionnaire is used to conduct an interview with each farmer associated with cultivation of the sampled plot and each farm of the LSF for each season (mainly for agricultural practices, inputs estimation and production).

2.6 Data processing and analysis

The CAPI method of data collection allows the enumerators in the field to collect and enter data with their tablets and then synchronize to the server at headquarters where data are received by NISR staff, checked for consistency at NISR and thereafter transmitted to analysts for tabulation and reporting using STATA and Excel software.

2.7 Computation methods for Key indicators

2.7.1 Physical area estimation

The physical area is the total area of the plot as physically measured. The physical agricultural area in a district is estimated by aggregating all weighted individual agricultural plot areas for that district.

2.7.2 Crop area (cultivated area) estimation

Crop area is the area occupied by a given crop in a plot considering its density or occupation. In context of Rwanda as well as many African countries, mixed cropping system is a general practice in agriculture. This practice makes it complex to estimate area under crop cultivation. In case of pure stands (for crop completely covering a plot), crop area is equal or less than physical plot area (if a crop is partially covering the plot, the share is estimated then applied to the plot area). In case of mixed crops there is a need to estimate each crop share in the plot, which is then applied to physical area to obtain area for each of the crops planted in same plot. In this context, the crop share is eye estimation of crop density or occupation in a plot (in %) basing on spacing between plants. Cultivated area at district level is equal to the total crop areas within a district. Example: In case of pure stands, crop area will be equal to the physical area if the crop entirely covers the whole plot. Otherwise, the crop area will be less than physical area. For example, a plot of 1 hectare in which maize was grown and completely occupies the whole plot (100 % occupied), it means that cultivated area for maize is 1 hectare. On the other side let us assume that the maize crop occupies 80 % of the total plot area. In that case the area of maize equals 0.8 hectares (1hectare times 0.8). In case of mixed cropping system, specifically seasonal crops the crop area is less than physical area.

For example, a plot of 1 hectare grown with maize and beans which occupies 60 % and 40 % of total plot area respectively. The maize area will be 0.6 hectare (1hectare times 0.6), and beans area will be 0.4(1hectare times 0.4). It is important to note that sum of shares of seasonal crops do not exceed one hundred percent. When seasonal and perennial crops are mixed together in same plot, due to the fact that perennial crops are permanent crops in nature, their shares are treated separately from seasonal crops. Seasonal crops share on their part, do not exceed a sum of 100 shares, and for perennial crops shares are given based on density (spacing between trees) and it may exceed 100 percent. For example, a plot of 1 hectare grown with maize, bean and cassava with 60 %, 40 % and 50% shares respectively. The maize area will be 0.6 hectare (1hectare times 0.6), beans area will be 0.4(1hectare times 0.4), while cassava area will be 0.5 hectare (1hectare times 0.5).

2.7.3 Developed area estimation

The developed area is the land covered by crops. Due to mixed cropping (over exploitation of agriculture land) or under exploitation in case pure cropping, developed area can be less or greater than the physical area. Basing on the example provided above of the plot in which maize, beans and

Cassava have been grown, maize has 0.6, beans has 0.4 while cassava has 0.5 ha. The developed area equals the sum of the crop areas which is equivalent to 1.5 ha.

2.7.4 Harvested area estimation

Area harvested is defined as the total number of hectares for all crops that is ready to be harvested in a given agriculture season. In case of crops considered as seasonal, the harvested area is assumed to be equal to the cultivated area. For perennial crops the farmer can decide to harvest a portion of land and stores the remaining production in the farm or harvest the whole plot for commercial purposes. In case of perennial crops, the proportion of harvested area is estimated and applied to the plot area to obtain actual harvested area. For example, cassava crop occupies 0.5 hectare of land has 5000 trees of cassava. In agriculture season B, cassava is mature and ready for producing but the farmers only harvested 1250 trees. In this case, the farmer harvested only a quarter (0.25 hectares) of the cultivated area. The concept of harvested area was introduced in SAS 2018 for the purpose of improving the estimations of yield for perennial crops.

2.7.5 Crop yield estimation

Crop yield, as one of the agriculture indicators, is defined as total amount of harvested crop over the area of that crop; In the previous Season B reports, yield was calculated by production of crop in the plot over cultivated area, but in this year 2018 report there was a change in yield calculation whereby yield is calculated by using harvested area of that plot and this was the reason behind an improvement in yield estimation of perennial crops.

2.7.6 Crop production estimation

Crop production is the product of crop yield and harvested crop area. At district level, crop production is estimated by taking average yield of crop produce times total crop area in the district.

3. Results of SAS 2018

3.1. Farm characteristics

3.1.1. Area

3.1.1.1. Agricultural land use area for potential arable land

Table 5: Agricultural land use for potential arable land per district (Ha)

| District | Agricultural Land | | Pasture | | Fallow | | Non-agricultural land | | Cultivated land (Season C) |
|--------------|-------------------|----------------|----------------|----------------|----------------|----------------|-----------------------|----------------|----------------------------|
| | Season A | Season B | Season A | Season B | Season A | Season B | Season A | Season B | |
| Nyarugenge | 4,205 | 4,739 | 33 | 65 | 1,316 | 892 | 1,991 | 1,853 | 43 |
| Gasabo | 18,778 | 19,219 | 298 | 313 | 3,647 | 3,184 | 5,748 | 5,837 | 100 |
| Kicukiro | 4,218 | 4,543 | 92 | 85 | 1,535 | 1,302 | 1,725 | 1,635 | - |
| Nyanza | 30,249 | 34,724 | 2,029 | 1,618 | 11,271 | 8,520 | 14,130 | 13,493 | 748 |
| Gisagara | 29,100 | 31,690 | 303 | 1,320 | 7,615 | 5,549 | 20,070 | 18,033 | 1,105 |
| Nyaruguru | 13,659 | 15,938 | - | - | 8,788 | 5,739 | 24,717 | 25,458 | 669 |
| Huye | 19,137 | 20,623 | 824 | 902 | 7,406 | 5,929 | 17,545 | 16,537 | 143 |
| Nyamagabe | 18,836 | 21,067 | 8 | 8 | 11,867 | 9,524 | 22,816 | 22,890 | 579 |
| Ruhango | 32,165 | 37,400 | - | 566 | 10,794 | 5,120 | 13,899 | 13,147 | 486 |
| Muhanga | 32,999 | 33,484 | - | - | 6,652 | 6,690 | 11,851 | 11,315 | 345 |
| Kamonyi | 37,074 | 39,987 | 555 | 516 | 6,574 | 5,066 | 13,268 | 11,929 | 531 |
| Karongi | 24,617 | 27,662 | 49 | - | 7,565 | 5,840 | 24,463 | 23,201 | 43 |
| Rutsiro | 26,181 | 24,377 | 5,466 | 5,737 | 4,935 | 6,983 | 18,292 | 17,777 | 150 |
| Rubavu | 15,496 | 15,541 | 1,134 | 1,104 | 2,544 | 2,888 | 8,511 | 8,181 | 1,706 |
| Nyabihu | 25,432 | 22,803 | 885 | 685 | 2,744 | 5,796 | 8,941 | 8,717 | 4,241 |
| Ngororero | 25,277 | 26,082 | 3,037 | 2,737 | 5,299 | 6,713 | 22,166 | 20,209 | 71 |
| Rusizi | 27,001 | 28,257 | - | - | 4,136 | 3,439 | 9,854 | 9,103 | 96 |
| Nyamasheke | 23,307 | 26,185 | - | - | 4,279 | 3,656 | 18,144 | 15,804 | 9 |
| Rulindo | 26,600 | 26,310 | - | - | 2,383 | 2,194 | 14,595 | 15,075 | 176 |
| Gakenke | 38,160 | 38,146 | - | 24 | 2,212 | 3,070 | 16,905 | 16,037 | 124 |
| Musanze | 24,892 | 20,193 | 2,037 | 1,624 | 722 | 5,939 | 7,042 | 6,959 | 3,309 |
| Burera | 29,002 | 30,082 | 107 | 68 | 2,938 | 2,267 | 13,424 | 13,023 | 3,638 |
| Gicumbi | 44,486 | 48,586 | 787 | 645 | 10,056 | 6,629 | 8,209 | 7,678 | 360 |
| Rwamagana | 37,817 | 39,356 | 3,095 | 2,856 | 5,490 | 2,436 | 11,534 | 12,803 | 80 |
| Nyagatare | 71,444 | 70,272 | 73,920 | 75,654 | 2,179 | 5,590 | 12,448 | 8,639 | 75 |
| Gatsibo | 57,986 | 58,698 | 17,969 | 18,315 | 1,747 | 2,975 | 11,220 | 9,018 | 126 |
| Kayonza | 50,462 | 50,967 | 32,309 | 29,459 | 6,681 | 6,313 | 23,519 | 26,351 | 4 |
| Kirehe | 58,794 | 60,564 | 4,694 | 4,787 | 3,562 | 2,806 | 24,299 | 23,209 | 7 |
| Ngoma | 42,552 | 43,267 | 3,886 | 4,780 | 7,781 | 5,101 | 14,331 | 16,051 | - |
| Bugesera | 45,093 | 49,520 | 5,737 | 5,782 | 25,471 | 23,125 | 30,367 | 27,546 | 226 |
| Total | 935,017 | 970,286 | 159,252 | 159,653 | 180,191 | 161,272 | 446,023 | 427,509 | 19,190 |

Source: NISR, SAS 2018

3.1.1.2. Crop area

SAS 2018 results indicated that comparing with Season A 2017 estimates, in season A 2018 there was an increase of cultivated area for maize (4%), wheat (36%), Irish potato (33%), beans 7%, pea (61%) and soybean (8%), while the cultivated area decreased for sorghum (-9%), cassava (-11%), yams and taro (-68%) banana (-6%), groundnut (-18%), vegetables (-31%) and fruits (-9%). Sweet potato cultivated area remained the same. In season B 2018, crops that increased in cultivated area are sorghum and wheat (4%), cassava (15%), Irish potato (32%), banana, peas and groundnuts increased by 3% respectively, while there was a decrease of cultivated area for maize (-8%), paddy rice (-3%),

sweet potato (-6%), yams and taro (-12%), beans (-3%) compared to 2017 season B estimates. (see Tables 6.1, 6.2, 6.3). District level estimates are found in appendix.

Table 6.1: Season A_Cultivated area by crop type and province (ha)

| Crop | Kigali | South | West | North | East | Total 2018A | Total 2017A | Change |
|-----------------------------------|---------------|----------------|----------------|----------------|----------------|------------------|------------------|-------------|
| Cereals | 5,277 | 36,937 | 35,906 | 39,052 | 155,180 | 272,352 | 267,862 | 2% |
| Maize | 5,145 | 26,829 | 31,288 | 33,411 | 121,505 | 218,179 | 210,609 | 4% |
| Sorghum | - | 1,257 | 840 | 3,234 | 21,820 | 27,151 | 29,702 | -9% |
| Paddy rice | 102 | 6,194 | 2,445 | - | 8,198 | 16,938 | 16,922 | 0% |
| Wheat | - | 55 | 1,313 | 2,111 | 1,010 | 4,490 | 3,313 | 36% |
| Other cereals | 30 | 2,603 | 19 | 295 | 2,647 | 5,594 | 7,316 | -24% |
| Tubers and Roots | 6,737 | 106,156 | 105,210 | 52,290 | 74,022 | 344,416 | 381,243 | -10% |
| Cassava | 3,960 | 69,399 | 57,118 | 13,847 | 50,394 | 194,717 | 219,845 | -11% |
| Sweet potatoes | 2,192 | 27,238 | 24,607 | 18,807 | 14,613 | 87,456 | 87,725 | 0% |
| Irish potatoes | 421 | 5,169 | 19,784 | 18,215 | 7,248 | 50,836 | 38,351 | 33% |
| Yams & Taro | 165 | 4,351 | 3,701 | 1,421 | 1,767 | 11,406 | 35,321 | -68% |
| Banana | 4,949 | 53,919 | 33,389 | 31,189 | 100,607 | 224,053 | 237,849 | -6% |
| Cooking banana | 1,643 | 6,496 | 6,664 | 7,935 | 62,787 | 85,524 | 96,571 | -11% |
| Dessert banana | 939 | 10,931 | 3,764 | 6,665 | 7,811 | 30,110 | 35,430 | -15% |
| Banana for beer | 2,368 | 39,286 | 22,961 | 16,589 | 30,009 | 111,213 | 105,847 | 5% |
| Legumes and pulses | 11,436 | 105,556 | 49,000 | 60,630 | 120,202 | 346,824 | 324,740 | 7% |
| Beans | 10,072 | 82,273 | 40,940 | 53,076 | 100,856 | 287,218 | 268,095 | 7% |
| Bush bean | 9,943 | 64,111 | 13,424 | 19,412 | 96,108 | 202,996 | 187,257 | 8% |
| Climbing bean | 130 | 18,162 | 27,517 | 33,664 | 4,749 | 84,222 | 80,838 | 4% |
| Peas | 189 | 4,561 | 3,375 | 5,061 | 1,936 | 15,121 | 9,373 | 61% |
| Ground nuts | 608 | 4,581 | 574 | 792 | 13,918 | 20,474 | 25,004 | -18% |
| Soya beans | 567 | 14,141 | 4,110 | 1,702 | 3,491 | 24,011 | 22,268 | 8% |
| Vegetables and Fruits | 991 | 4,548 | 5,649 | 3,742 | 4,839 | 19,769 | 26,520 | -25% |
| Vegetables | 930 | 3,599 | 3,659 | 2,892 | 2,713 | 13,794 | 19,969 | -31% |
| Fruits | 61 | 948 | 1,989 | 850 | 2,126 | 5,975 | 6,551 | -9% |
| Fodder crops | 1,887 | 2,048 | 1,786 | 1,591 | 1,793 | 9,104 | #N/A | #N/A |
| Other crops | 1,207 | 10,433 | 13,889 | 5,613 | 11,183 | 42,325 | 25,842 | 64% |
| Developed land | 32,486 | 322,390 | 244,827 | 194,106 | 467,826 | 1,261,636 | 1,264,055 | 0% |
| Agricultural Physical land | 27,201 | 213,219 | 167,310 | 163,140 | 364,147 | 935,017 | 906,533 | 3% |
| Fallow land | 6,498 | 70,968 | 31,502 | 18,311 | 52,912 | 180,191 | 218,294 | -17% |

Source: NISR, SAS 2018

Table 6.2: Season B, Cultivated area by crop type and province (ha)

| Crop | Kigali | South | West | North | East | Total 2018B | Total 2017B | Change |
|---------------------------|--------------|----------------|---------------|---------------|----------------|----------------|----------------|------------|
| Cereals | 7,671 | 47,304 | 17,067 | 29,228 | 120,841 | 222,111 | 223,754 | -1% |
| Maize | 2,172 | 10,005 | 8,309 | 8,703 | 48,963 | 78,151 | 85,130 | -8% |
| Sorghum | 5,070 | 28,630 | 3,646 | 17,367 | 62,272 | 116,986 | 112,694 | 4% |
| Paddy rice | 413 | 6,736 | 2,025 | - | 7,566 | 16,739 | 17,283 | -3% |
| Wheat | - | 851 | 2,947 | 3,158 | 779 | 7,735 | 7,448 | 4% |
| Other cereals | 16 | 1,082 | 140 | - | 1,261 | 2,500 | 1,199 | 109% |
| Tubers and Roots | 7,680 | 119,764 | 90,253 | 50,165 | 80,537 | 348,399 | 317,680 | 10% |
| Cassava | 4,083 | 78,170 | 43,729 | 12,226 | 50,277 | 188,485 | 164,529 | 15% |
| Sweet potato | 1,934 | 27,319 | 19,620 | 17,208 | 13,902 | 79,983 | 85,200 | -6% |
| Irish potato | 1,157 | 7,817 | 22,207 | 18,009 | 11,453 | 60,644 | 45,923 | 32% |
| Yams & Taro | 505 | 6,458 | 4,698 | 2,722 | 4,904 | 19,287 | 22,028 | -12% |
| Banana | 5,554 | 57,847 | 32,339 | 32,468 | 104,212 | 232,420 | 226,472 | 3% |
| Cooking banana | 1,919 | 8,235 | 6,531 | 9,037 | 64,453 | 90,175 | 93,549 | -4% |
| Dessert banana | 1,267 | 12,188 | 4,470 | 7,430 | 8,799 | 34,153 | 32,575 | 5% |
| Banana for beer | 2,368 | 37,424 | 21,339 | 16,001 | 30,961 | 108,091 | 100,348 | 8% |
| Legumes and Pulses | 8,011 | 88,245 | 46,906 | 53,968 | 134,002 | 331,131 | 337,671 | -2% |
| Beans | 7,013 | 63,335 | 36,136 | 49,164 | 113,457 | 269,105 | 276,435 | -3% |
| Bush bean | 6,866 | 45,086 | 12,501 | 9,781 | 103,093 | 177,327 | 191,955 | -8% |

| | | | | | | | | |
|-----------------------------------|---------------|----------------|----------------|----------------|----------------|------------------|------------------|-------------|
| Climbing bean | 147 | 18,249 | 23,635 | 39,384 | 10,364 | 91,778 | 84,481 | 9% |
| Pea | 73 | 2,983 | 2,665 | 2,830 | 2,061 | 10,612 | 10,298 | 3% |
| Groundnut | 366 | 4,943 | 1,012 | 563 | 14,098 | 20,983 | 20,451 | 3% |
| Soybean | 559 | 16,984 | 7,093 | 1,410 | 4,385 | 30,431 | 30,486 | 0% |
| Vegetables and Fruits | 777 | 3,867 | 5,544 | 3,790 | 5,179 | 19,157 | 25,854 | -26% |
| Vegetables | 696 | 2,759 | 3,611 | 2,782 | 2,632 | 12,480 | 19,010 | -34% |
| Fruits | 81 | 1,108 | 1,933 | 1,008 | 2,547 | 6,677 | 6,844 | -2% |
| Fodder crops | 1,608 | 2,426 | 2,207 | 1,425 | 2,042 | 9,707 | N/A | N/A |
| Other crops | 1,234 | 10,029 | 13,143 | 4,425 | 11,093 | 39,925 | 62,359 | -36% |
| Developed land | 32,505 | 329,512 | 207,459 | 175,468 | 457,906 | 1,202,851 | 1,193,791 | 1% |
| Agricultural physical land | 28,140 | 228,842 | 168,869 | 163,256 | 361,702 | 970,285 | 915,126 | 6% |
| Fallow land | 5,219 | 50,563 | 35,302 | 20,013 | 46,456 | 16,1271 | 191,120 | -16% |

Source: NISR, SAS 2018

Table 6.3: Season C, Cultivated area by crop type and province (ha)

| Crop | Kigali City | South | West | North | East | Total 2018C | Total 2017C | Change |
|------------------------------|-------------|--------------|--------------|--------------|------------|---------------|---------------|-------------|
| Tubers and Roots | 89 | 3,035 | 3,941 | 6,064 | 293 | 13,422 | 16,135 | -17% |
| Sweet potato | 89 | 2,919 | 547 | 1,842 | 286 | 5,683 | 7,609 | -25% |
| Irish potato | - | 116 | 3,394 | 4,222 | 7 | 7,740 | 8,526 | -9% |
| Legumes and Pulses | 39 | 918 | 111 | 193 | 203 | 1,465 | 3,665 | -60% |
| Beans | 39 | 620 | 19 | 11 | 196 | 885 | 3,256 | -73% |
| Bush bean | 39 | 613 | 19 | 6 | 196 | 873 | 3,209 | -73% |
| Climbing bean | - | 8 | - | 5 | - | 13 | 47 | -73% |
| Pea | - | 34 | 26 | 169 | - | 228 | 103 | 122% |
| Soybean | - | 264 | 66 | 13 | 7 | 351 | 307 | 14% |
| Vegetables and Fruits | 187 | 1,212 | 556 | 705 | 357 | 3,017 | 3,540 | -15% |
| Vegetables | 187 | 1,212 | 556 | 705 | 357 | 3,017 | 3,525 | -14% |
| Fruits/watermelon | - | - | - | - | - | - | 16 | -100% |
| Developed land | 315 | 5,166 | 4,609 | 6,962 | 852 | 17,904 | 23,341 | -23% |
| Total Physical Land | 143 | 4,607 | 6,315 | 7,607 | 518 | 19,190 | 22,404 | -14% |

Source: NISR, SAS 2018

Table 7.1: Season A_Harvested area by crop type and Province (Ha)

| Crop | Kigali City | South | West | North | East | Total 2018A |
|------------------------------|---------------|----------------|---------------|---------------|----------------|----------------|
| Cereals | 5,277 | 36,937 | 35,906 | 39,052 | 155,180 | 272,352 |
| Maize | 5,145 | 26,829 | 31,288 | 33,411 | 121,505 | 218,179 |
| Sorghum | - | 1,257 | 840 | 3,234 | 21,820 | 27,151 |
| Paddy rice | 102 | 6,193 | 2,445 | - | 8,198 | 16,938 |
| Wheat | - | 55 | 1,313 | 2,111 | 1,010 | 4,490 |
| Other Cereals | 30 | 2,603 | 19 | 295 | 2,647 | 5,594 |
| Tubers and Roots | 3,231 | 49,292 | 59,959 | 39,418 | 33,701 | 185,600 |
| Cassava | 452 | 12,534 | 11,867 | 975 | 10,069 | 35,897 |
| Sweet potato | 2,192 | 27,238 | 24,607 | 18,807 | 14,613 | 87,456 |
| Irish potato | 421 | 5,169 | 19,784 | 18,215 | 7,248 | 50,836 |
| Taro | 166 | 4,256 | 3,650 | 1,386 | 1,535 | 10,992 |
| Yam | - | 96 | 52 | 35 | 236 | 419 |
| Banana | 1,368 | 14,827 | 10,287 | 11,024 | 24,470 | 61,976 |
| Cooking Banana | 417 | 1,582 | 1,756 | 2,792 | 14,858 | 21,404 |
| Dessert banana | 203 | 1,305 | 592 | 1,631 | 1,444 | 5,176 |
| Banana for beer | 748 | 11,941 | 7,939 | 6,600 | 8,168 | 35,396 |
| Legumes and Pulses | 11,436 | 105,556 | 49,000 | 60,630 | 120,202 | 346,824 |
| Beans | 10,072 | 82,273 | 40,940 | 53,076 | 100,856 | 287,218 |
| Bush bean | 9,933 | 63,715 | 13,402 | 19,412 | 96,036 | 202,499 |
| Small red bean | 10 | 396 | 21 | - | 71 | 498 |
| Climbing bean | 130 | 18,162 | 27,517 | 33,664 | 4,749 | 84,222 |
| Pea | 189 | 4,561 | 3,375 | 5,061 | 1,936 | 15,121 |
| Groundnut | 608 | 4,581 | 574 | 792 | 13,918 | 20,474 |
| Soybean | 567 | 14,141 | 4,110 | 1,702 | 3,491 | 24,011 |
| Vegetables and Fruits | 984 | 4,189 | 4,668 | 3,595 | 4,476 | 17,911 |

| | | | | | | |
|--------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| Vegetables | 856 | 3,599 | 3,663 | 2,892 | 2,637 | 13,647 |
| Fruits | 128 | 590 | 1,005 | 702 | 1,838 | 4,264 |
| Folder crops | 1,637 | 1,682 | 1,367 | 1,417 | 1,438 | 7,541 |
| Other crops | 270 | 1,069 | 6,085 | 2,893 | 1,010 | 11,327 |
| Total | 24,203 | 213,552 | 167,271 | 158,028 | 340,477 | 903,530 |

Source: NISR, SAS 2018, Season A

Table 7.2: Season B_Harvested area by crop type and Province (Ha)

| Crop | Kigali City | South | West | North | East | 2018 B Total |
|------------------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| Cereals | 7,671 | 47,272 | 16,898 | 29,228 | 120,144 | 221,214 |
| Maize | 2,172 | 10,005 | 8,309 | 8,703 | 48,963 | 78,151 |
| Sorghum | 5,070 | 28,630 | 3,646 | 17,367 | 62,272 | 116,986 |
| Paddy rice | 413 | 6,705 | 1,856 | - | 6,868 | 15,842 |
| Wheat | - | 851 | 2,947 | 3,158 | 779 | 7,735 |
| Other cereals | 16 | 1,082 | 140 | - | 1,261 | 2,500 |
| Tubers and Roots | 4,593 | 61,116 | 67,500 | 40,032 | 42,889 | 216,130 |
| Cassava | 996 | 19,522 | 20,976 | 2,093 | 12,629 | 56,216 |
| Sweet potato | 1,934 | 27,319 | 19,620 | 17,208 | 13,902 | 79,983 |
| Irish potato | 1,157 | 7,817 | 22,207 | 18,009 | 11,453 | 60,644 |
| Yams & Taro | 505 | 6,458 | 4,698 | 2,722 | 4,904 | 19,287 |
| Banana | 2,140 | 15,367 | 9,693 | 7,946 | 27,994 | 63,140 |
| Cooking banana | 549 | 1,224 | 1,005 | 1,299 | 15,690 | 19,767 |
| Dessert banana | 475 | 2,032 | 932 | 1,605 | 2,312 | 7,355 |
| Banana for beer | 1,116 | 12,111 | 7,757 | 5,042 | 9,992 | 36,018 |
| Legumes and Pulses | 8,011 | 88,245 | 46,906 | 53,968 | 134,002 | 331,131 |
| Beans | 7,013 | 63,335 | 36,136 | 49,164 | 113,457 | 269,105 |
| Bush bean | 6,866 | 45,086 | 12,501 | 9,781 | 103,093 | 177,327 |
| Climbing bean | 147 | 18,249 | 23,635 | 39,384 | 10,364 | 91,778 |
| Pea | 73 | 2,983 | 2,665 | 2,830 | 2,061 | 10,612 |
| Groundnut | 366 | 4,943 | 1,012 | 563 | 14,098 | 20,983 |
| Soybean | 559 | 16,984 | 7,093 | 1,410 | 4,385 | 30,431 |
| Vegetables and Fruits | 707 | 3,503 | 5,010 | 3,707 | 4,075 | 17,002 |
| vegetables | 696 | 2,759 | 3,611 | 2,782 | 2,632 | 12,480 |
| Fruits | 11 | 745 | 1,399 | 925 | 1,443 | 4,522 |
| Folder crops | 1,608 | 2,307 | 2,018 | 1,153 | 1,954 | 9,041 |
| Other crops | 1,092 | 8,607 | 8,706 | 3,630 | 7,439 | 29,474 |
| Total | 25,822 | 226,418 | 156,732 | 139,663 | 338,497 | 887,131 |

Source: NISR, SAS 2018, Season B

Table 7.3: Season C, harvested area by crop type and province (ha)

| Crop | Kigali City | South | West | North | East | Total 2018C | Total 2017C | Change |
|------------------------------|-------------|--------------|--------------|--------------|------------|---------------|---------------|-------------|
| Tubers and Roots | 89 | 3,035 | 3,941 | 6,064 | 293 | 13,422 | 16,135 | -17% |
| Sweet potato | 89 | 2,919 | 547 | 1,842 | 286 | 5,683 | 7,609 | -25% |
| Irish potato | - | 116 | 3,394 | 4,222 | 7 | 7,740 | 8,526 | -9% |
| Legumes and Pulses | 39 | 918 | 111 | 193 | 203 | 1,465 | 3,665 | -60% |
| Beans | 39 | 620 | 19 | 11 | 196 | 885 | 3,256 | -73% |
| Bush bean | 39 | 613 | 19 | 6 | 196 | 873 | 3,209 | -73% |
| Climbing bean | - | 8 | - | 5 | - | 13 | 47 | -73% |
| Pea | - | 34 | 26 | 169 | - | 228 | 103 | 122% |
| Soybean | - | 264 | 66 | 13 | 7 | 351 | 307 | 14% |
| Vegetables and Fruits | 187 | 1,212 | 556 | 705 | 357 | 3,017 | 3,540 | -15% |
| Vegetables | 187 | 1,212 | 556 | 705 | 357 | 3,017 | 3,525 | -14% |
| Fruits/watermelon | - | - | - | - | - | - | 16 | -100% |
| Developed land | 315 | 5,166 | 4,609 | 6,962 | 852 | 17,904 | 23,341 | -23% |
| Total Physical Land | 143 | 4,607 | 6,315 | 7,607 | 518 | 19,190 | 22,404 | -14% |

Source: NISR, SAS 2018, Season C

3.1.1.3. Plot Size

In SAS 2018, the survey results show that overall average size of plots for cultivated land in Rwanda was 2,538 square meters for season A, 2,803 square meters for season B and 1,069 square meters for season C for segments, while. Concerning districts, Kayonza, Nyagatare and Gatsibo hold plots with highest average size in general (See table 8).

Table 8. 1: Average plot size by cropping system per district (In sqm)

| District | Plots with pure cropping system | | | Plots with mixed cropping system | | | Overall plot size Season A | Overall plot size Season B | Overall plot size Season C |
|----------------|---------------------------------|--------------|--------------|----------------------------------|--------------|--------------|----------------------------|----------------------------|----------------------------|
| | Season A | Season B | Season C | Season A | Season B | Season C | | | |
| Nyarugenge | 2,509 | 3,128 | 14,651 | 859 | 913 | 1,742 | 1,822 | 1,843 | 6,903 |
| Gasabo | 1,041 | 1,077 | 674 | 938 | 1,033 | 711 | 1,097 | 1,194 | 1,590 |
| Kicukiro | 1,037 | 1,071 | - | 1,110 | 1,084 | - | 1,543 | 1,469 | - |
| Nyanza | 905 | 840 | 1,197 | 730 | 778 | 362 | 1,621 | 1,614 | 1,286 |
| Gisagara | 588 | 1,161 | 396 | 690 | 753 | 548 | 1,075 | 1,453 | 725 |
| Nyaruguru | 340 | 423 | 358 | 374 | 418 | 304 | 874 | 1,058 | 585 |
| Huye | 880 | 1,020 | 331 | 687 | 650 | 344 | 1,956 | 2,012 | 440 |
| Nyamagabe | 362 | 372 | 314 | 352 | 527 | 290 | 715 | 858 | 420 |
| Ruhango | 624 | 667 | 505 | 565 | 723 | 598 | 846 | 918 | 678 |
| Muhanga | 521 | 504 | 315 | 436 | 628 | 342 | 609 | 897 | 893 |
| Kamonyi | 535 | 630 | 329 | 693 | 858 | 363 | 911 | 1,088 | 1,171 |
| Karongi | 532 | 540 | 432 | 466 | 568 | 439 | 908 | 926 | 782 |
| Rutsiro | 659 | 622 | 599 | 582 | 703 | 714 | 3,364 | 3,561 | 1,068 |
| Rubavu | 1,094 | 932 | 960 | 842 | 1,223 | 733 | 3,191 | 3,239 | 1,257 |
| Nyabihu | 750 | 897 | 847 | 576 | 776 | 797 | 988 | 1,253 | 788 |
| Ngororero | 537 | 942 | 854 | 452 | 759 | 354 | 2,693 | 3,003 | 841 |
| Rusizi | 1,008 | 991 | 1,147 | 744 | 857 | 556 | 1,045 | 1,069 | 1,209 |
| Nyamashenge | 597 | 651 | 635 | 472 | 725 | 1,574 | 851 | 993 | 972 |
| Rulindo | 506 | 468 | 710 | 702 | 834 | 409 | 784 | 862 | 592 |
| Gakenke | 388 | 500 | 282 | 580 | 756 | 883 | 670 | 822 | 936 |
| Musanze | 1,026 | 809 | 1,243 | 676 | 687 | 1,012 | 1,163 | 1,279 | 1,243 |
| Burera | 695 | 681 | 658 | 720 | 772 | 910 | 862 | 865 | 787 |
| Gicumbi | 662 | 644 | 852 | 567 | 680 | 1,147 | 699 | 799 | 1,086 |
| Rwamagana | 1,962 | 1,770 | 925 | 1,262 | 1,565 | 421 | 2,005 | 2,209 | 3,252 |
| Nyagatare | 2,469 | 2,143 | 1,421 | 1,767 | 2,403 | - | 4,516 | 5,096 | 2,266 |
| Gatsibo | 1,897 | 1,649 | 684 | 1,476 | 1,955 | 635 | 6,308 | 6,895 | 896 |
| Kayonza | 2,124 | 2,190 | 1,461 | 1,883 | 2,162 | 325 | 9,241 | 9,803 | 1,070 |
| Kirehe | 1,784 | 1,662 | 1,066 | 1,741 | 2,350 | 694 | 6,222 | 6,913 | 1,042 |
| Ngoma | 1,089 | 900 | - | 1,046 | 1,198 | - | 1,387 | 1,527 | - |
| Bugesera | 1,361 | 3,877 | 566 | 1,067 | 1,636 | 1,257 | 3,578 | 5,290 | 3,500 |
| Overall | 1,066 | 1,100 | 818.9 | 990 | 1,249 | 655.2 | 2,538 | 2,803 | 1,069 |

Source: NISR, SAS 2018

3.1.2. Crop Production

The results of Season A 2018 show that compared to Season A 2017 estimates, there was an increase of produce for maize (3%), paddy rice (5%), bean (12%), pea (33%), cassava (8%), sweet potato (15%), Irish potato (16%), vegetables (22%), soybean (14%) and groundnut (6%), while a decrease of production was reported for sorghum (-12%), banana (-3%), yams and taro (-45%). In terms of crop production in Season A, eastern province was the highest producer of crops with 1,100,898 MT, followed by southern province with 897,772 MT and western province with 871,158 MT with the overall increase of 10% from the 2017 season A production estimates. (see table 9.1). District level estimates are found in appendix.

Table 9. 1: Season A, Production of main crops by Province (MT)

| Crop | Kigali City | South | West | North | East | Total 2018 A | Total 2017 A | Change |
|------------------------------|----------------|----------------|----------------|----------------|------------------|------------------|-------------------|------------|
| Cereals | 7,134 | 68,851 | 54,090 | 65,970 | 241,072 | 437,116 | 424,898 | 3% |
| Maize | 6,796 | 46,277 | 42,753 | 55,108 | 181,736 | 332,670 | 324,368 | 3% |
| Sorghum | - | 2,014 | 981 | 7,091 | 26,495 | 36,581 | 41,662 | -12% |
| Paddy rice | 284 | 18,660 | 9,226 | - | 29,764 | 57,934 | 55,217 | 5% |
| Wheat | - | 60 | 1,118 | 3,543 | 1,230 | 5,950 | 3,651 | 63% |
| Other Cereals | 55 | 1,840 | 12 | 227 | 1,847 | 3,981 | - | NA |
| Tubers and Roots | 25,131 | 473,446 | 554,742 | 324,739 | 280,130 | 1,658,188 | 1,534,398 | 8% |
| Cassava | 6,363 | 186,854 | 141,699 | 13,859 | 137,665 | 486,440 | 451,362 | 8% |
| Sweet potatoes | 16,292 | 231,650 | 166,765 | 149,785 | 97,091 | 661,583 | 574,500 | 15% |
| Irish potatoes | 2,026 | 27,629 | 219,040 | 153,973 | 36,844 | 439,512 | 378,906 | 16% |
| Yams & Taro | 449 | 27,313 | 27,239 | 7,122 | 8,530 | 70,653 | 129,630 | -45% |
| Banana | 21,272 | 196,796 | 135,031 | 181,592 | 417,993 | 952,684 | 985,485 | -3% |
| Cooking Banana | 8,268 | 29,709 | 28,355 | 55,789 | 283,923 | 406,044 | 415,868 | -2% |
| Dessert banana | 4,622 | 29,702 | 12,035 | 36,460 | 29,464 | 112,283 | 113,032 | -1% |
| Banana for beer | 8,382 | 137,385 | 94,640 | 89,343 | 104,606 | 434,356 | 456,585 | -5% |
| Legumes and Pulses | 10,541 | 86,014 | 41,936 | 57,851 | 88,549 | 284,891 | 253,560 | 12% |
| Beans | 9,495 | 73,922 | 37,575 | 53,191 | 77,006 | 251,189 | 224,232.92 | 12% |
| Bush bean | 9,390 | 54,760 | 10,281 | 16,390 | 73,190 | 164,011 | 145,446 | 13% |
| Small red bean | 3 | 256 | 15 | - | 39 | 313 | - | NA |
| Climbing bean | 105 | 19,162 | 27,294 | 36,801 | 3,816 | 87,178 | 78,787 | 11% |
| Peas | 120 | 2,784 | 1,482 | 3,584 | 1,031 | 9,001 | 6,768 | 33% |
| Ground nuts | 430 | 2,798 | 228 | 458 | 8,631 | 12,546 | 11,873 | 6% |
| Soya beans | 496 | 6,510 | 2,651 | 619 | 1,881 | 12,156 | 10,686 | 14% |
| Vegetables and Fruits | 11,175 | 50,057 | 53,131 | 41,830 | 42,628 | 198,821 | 188,057 | 6% |
| Vegetables | 9,872 | 45,395 | 43,427 | 36,522 | 27,720 | 162,936 | 133,118 | 22% |
| Fruits | 1,303 | 4,662 | 9,704 | 5,308 | 14,908 | 35,884 | 54,940 | -35% |
| Folder crops | 67,223 | 18,555 | 17,642 | 12,508 | 23,825 | 139,753 | - | NA |
| Other crops | 10,083 | 4,054 | 14,586 | 21,875 | 6,701 | 57,299 | - | NA |
| Total | 152,559 | 897,772 | 871,158 | 706,366 | 1,100,898 | 3,728,752 | 3,386,398 | 10% |

Source: NISR, SAS 2018, Season A

The results of Season B 2018 showed that compared to Season B 2017 estimates, there was an increase of production for maize (7%), wheat (4%), beans (3%), pea (2%), banana (8%), cassava (9%), sweet potato (3%), yams and taro (5%) and groundnut (11%), while a decrease of production was reported for paddy rice (-14%), Irish potato (-1%), vegetables (-7%) and soybean (-19%). SAS Season B 2018, when considering the province, in terms of crop production, eastern province was the highest producer of crops with 1,104,394 MT, followed by southern province with 882,727 MT and western province with 734,453 MT with the overall increase of 12% from the 2017 season B production estimates. In general, when comparing 2018 season B to 2017 season B production estimates, the main crops have recorded an increase in production except fewer crops like Paddy rice which saw a decrease of -14%, Irish potatoes with a decrease of -1%, soybeans by -19% and vegetables by -7%. (see table 9.2). District level estimates are found in appendix.

Table 9.2: Season B, Production of main crops by Province (MT)

| Crop | Kigali City | South | West | North | East | Total 2018 B | Total 2017 B | Change |
|------------------------------|----------------|----------------|----------------|----------------|------------------|------------------|------------------|------------|
| Cereals | 10,382 | 56,676 | 25,231 | 29,446 | 152,594 | 274,330 | 276,161 | -1% |
| Maize | 2,577 | 9,534 | 7,974 | 8,200 | 63,249 | 91,534 | 85,912 | 7% |
| Sorghum | 6,228 | 28,762 | 5,400 | 17,406 | 60,315 | 118,111 | 118,310 | 0% |
| Paddy rice | 1,560 | 17,006 | 9,533 | - | 27,846 | 55,946 | 64,715 | -14% |
| Wheat | - | 623 | 2,324 | 3,841 | 737 | 7,525 | 7,224 | 4% |
| Other Cereals | 17 | 751 | - | - | 447 | 1,214 | - | NA |
| Tubers and Roots | 29,696 | 511,530 | 463,053 | 307,835 | 320,831 | 1,632,944 | 1,566,444 | 4% |
| Cassava | 10,736 | 258,489 | 161,653 | 34,595 | 175,285 | 640,759 | 590,481 | 9% |
| Sweet potatoes | 12,511 | 183,347 | 110,148 | 103,884 | 88,900 | 498,790 | 483,898 | 3% |
| Irish potatoes | 4,290 | 35,647 | 167,925 | 154,718 | 33,485 | 396,064 | 398,934 | -1% |
| Yams & Taro | 2,159 | 34,047 | 23,326 | 14,638 | 23,161 | 97,331 | 93,131 | 5% |
| Banana | 29,850 | 158,400 | 100,816 | 99,756 | 428,192 | 817,013 | 753,522 | 8% |
| Cooking Banana | 10,480 | 16,012 | 15,795 | 25,156 | 286,209 | 353,652 | 315,481 | 12% |
| Dessert banana | 8,345 | 28,198 | 13,781 | 28,965 | 37,767 | 117,057 | 111,312 | 5% |
| Banana for beer | 11,025 | 114,189 | 71,240 | 45,635 | 104,216 | 346,304 | 326,729 | 6% |
| Legumes and Pulses | 5,735 | 54,974 | 33,460 | 49,875 | 115,345 | 259,390 | 253,462 | 2% |
| Beans | 5,197 | 46,064 | 29,033 | 47,529 | 105,717 | 233,540 | 226,131 | 3% |
| Bush bean | 5,053 | 30,329 | 7,632 | 5,106 | 93,957 | 142,077 | 139,343 | 2% |
| Climbing bean | 144 | 15,735 | 21,401 | 42,423 | 11,760 | 91,463 | 86,788 | 5% |
| Peas | 67 | 1,891 | 1,251 | 1,598 | 883 | 5,689 | 5,600 | 2% |
| Ground nuts | 154 | 2,202 | 326 | 262 | 6,789 | 9,734 | 8,805 | 11% |
| Soya beans | 317 | 4,818 | 2,850 | 487 | 1,955 | 10,427 | 12,925 | -19% |
| Vegetables and Fruits | 5,918 | 33,549 | 48,373 | 36,611 | 38,532 | 162,983 | 171,854 | -5% |
| Vegetables | 5,892 | 30,809 | 42,040 | 33,346 | 33,186 | 145,272 | 155,476 | -7% |
| Fruits | 26 | 2,740 | 6,333 | 3,265 | 5,347 | 17,711 | 16,378 | 8% |
| Folder crops | 26,188 | 45,771 | 24,093 | 9,986 | 31,786 | 137,823 | - | NA |
| Other crops | 1,718 | 21,826 | 39,427 | 21,287 | 17,114 | 101,373 | - | NA |
| Total | 109,487 | 882,727 | 734,453 | 554,796 | 1,104,394 | 3,385,856 | 3,021,443 | 12% |

Source: NISR, SAS 2018, Season B

SAS Season C 2018 results show different trend in terms of crop production, northern province was the highest producer of crops with 62,720 MT, followed by western province with 45,844 MT and southern province with 30,126 MT and with the overall increase of 16% from the 2017 season C production estimates. In general, when comparing 2018 season C to 2017 season C production estimates, the main crops have recorded an increase in production except beans which saw a decrease of -73% (see table 9.3). District level estimates are found in appendix.

Table 9.3: Season C, Production of main crops by Province (MT)

| Crop | Kigali City | South | West | North | East | Total 2018C | Total 2017C | Change |
|------------------------------|--------------|---------------|---------------|---------------|--------------|----------------|----------------|-------------|
| Tubers and Roots | 501 | 14,580 | 38,287 | 51,995 | 1,482 | 106,845 | 93,428 | 14% |
| Sweet potatoes | 501 | 13,938 | 2,029 | 8,449 | 1,441 | 26,358 | 23,966 | 10% |
| Irish potatoes | - | 642 | 36,258 | 43,546 | 40 | 80,487 | 69,462 | 16% |
| Legumes and Pulses | 26 | 836 | 96 | 113 | 320 | 1,390 | 4,057 | -66% |
| Beans | 26 | 653 | 17 | 13 | 317 | 1,027 | 3,810 | -73% |
| Bush bean | 26 | 642 | 17 | 10 | 317 | 1,012 | 3,748 | -73% |
| Climbing bean | - | 11 | - | 3 | - | 15 | 62 | -76% |
| Peas | - | 33 | 16 | 88 | - | 137 | 55 | 150% |
| Soya beans | - | 149 | 62 | 12 | 3 | 227 | 192 | 18% |
| Vegetables and Fruits | 2,325 | 14,710 | 7,461 | 10,613 | 5,308 | 40,417 | 30,720 | 32% |
| Vegetables | 2,325 | 14,710 | 7,461 | 10,613 | 5,308 | 40,417 | 30,305 | 33% |
| Fruits | - | - | - | - | - | - | 414 | -100% |
| Total | 2,852 | 30,126 | 45,844 | 62,720 | 7,110 | 148,652 | 128,205 | 16% |

Source: NISR, SAS 2018, Season C

3.1.3. Crop Yield

Crop yield refers to the measure of production of a crop per unit area of land cultivation of that crop and is calculated and presented at province and district levels. In the previous reports yield was calculated by production of crop in the plot over cultivated area, but in SAS 2018 there was a change in yield calculation whereby yield is calculated by using harvested area of that plot and this was the reason behind a high yield in yield of perennial crops. The results of the Season A 2018 indicate that the average yield of main crops in Rwanda were: 1,525 kg/ha for maize, 1,347 kg/ha for sorghum, 3,420 kg/ha for paddy rice, 1,325 kg/ha for wheat, 13,551 kg/ha for cassava, 7,565 kg/ha for sweet potato, 8,646 kg/ha for Irish potato, 6,192 kg/ha for yams and taro, 18,970 kg/ha for cooking banana, 21,693 kg/ha for dessert banana, 12,271 kg/ha for banana for beer, 810 kg/ha for bush bean, 1,035 kg/ha for climbing bean, 613 kg/ha for groundnut, 595 kg/ha for pea, 506 kg/ha for soybean, 11,939 kg/ha for vegetables and 8,416 kg/ha fruits. (see table 10.1). District level estimates are found in appendix.

Table 10. 1 : Season A, Yield of main crops by Province (Kg/Ha)

| Crops | Kigali City | South | West | North | East | National Average yield 2018 A |
|-----------------|-------------|--------|--------|--------|--------|-------------------------------|
| Maize | 1,321 | 1,725 | 1,366 | 1,649 | 1,496 | 1,525 |
| Sorghum | | 1,602 | 1,167 | 2,193 | 1,214 | 1,347 |
| Paddy rice | 2,779 | 3,013 | 3,774 | | 3,631 | 3,420 |
| Wheat | | 1,074 | 851 | 1,678 | 1,217 | 1,325 |
| Cassava | 14,076 | 14,908 | 11,941 | 14,218 | 13,672 | 13,551 |
| Sweet potatoes | 7,433 | 8,505 | 6,777 | 7,964 | 6,644 | 7,565 |
| Irish potatoes | 4,811 | 5,345 | 11,072 | 8,453 | 5,083 | 8,646 |
| Yams & Taro | 2,712 | 6,277 | 7,359 | 5,011 | 4,817 | 6,192 |
| Cooking Banana | 19,834 | 18,782 | 16,151 | 19,980 | 19,109 | 18,970 |
| Dessert banana | 22,758 | 22,761 | 20,316 | 22,352 | 20,400 | 21,693 |
| Banana for beer | 11,200 | 11,506 | 11,921 | 13,536 | 12,808 | 12,271 |
| Bush bean | 945 | 859 | 767 | 844 | 762 | 810 |
| Small red bean | 325 | 646 | 702 | | 553 | 629 |
| Climbing bean | 809 | 1,055 | 992 | 1,093 | 804 | 1,035 |
| Pea | 635 | 610 | 439 | 708 | 533 | 595 |
| Groundnut | 707 | 611 | 398 | 579 | 620 | 613 |
| Soybean | 875 | 460 | 645 | 363 | 539 | 506 |
| Vegetables | 11,538 | 12,613 | 11,856 | 12,627 | 10,511 | 11,939 |
| Fruits | 10,163 | 7,903 | 9,652 | 7,559 | 8,109 | 8,416 |

Source: NISR, SAS 2018, Season A

Results of Season B 2018 indicate that the average yields for of main crops in Rwanda were: 1,171 kg/ha for maize, 1,010 kg/ha for sorghum, 3,532 kg/ha for paddy rice, 973 kg/ha for wheat, 11,398 kg/ha for cassava, 6,236 kg/ha for sweet potato, 6,531 kg/ha for Irish potato, 5,047 kg/ha for yams and taro, 17,891 kg/ha for cooking banana, 15,915 kg/ha for dessert banana, 9,615 kg/ha for banana for beer, 801 kg/ha for bush bean, 997 kg/ha for climbing bean, 464 kg/ha for groundnut, 536 kg/ha for pea, 343 kg/ha for soybean, 11,641 kg/ha for vegetables and 3,916 kg/ha fruits (see table 10.2).

Table 10. 2: Season B, Yield of main crops by Province (Kg/Ha)

| Crop | Kigali City | South | West | North | East | Overall 2018 B |
|-----------------|-------------|--------|--------|--------|--------|----------------|
| Maize | 1,186 | 953 | 960 | 942 | 1,292 | 1,171 |
| Sorghum | 1,228 | 1,005 | 1,481 | 1,002 | 969 | 1,010 |
| Paddy rice | 3,780 | 2,537 | 5,136 | - | 4,054 | 3,532 |
| Wheat | - | 732 | 789 | 1,216 | 946 | 973 |
| Cassava | 10,783 | 13,241 | 7,707 | 16,530 | 13,879 | 11,398 |
| Sweet potatoes | 6,469 | 6,711 | 5,614 | 6,037 | 6,395 | 6,236 |
| Irish potatoes | 3,706 | 4,560 | 7,562 | 8,591 | 2,924 | 6,531 |
| Yams & Taro | 4,270 | 5,272 | 4,966 | 5,378 | 4,723 | 5,047 |
| Cooking banana | 19,098 | 13,080 | 15,718 | 19,363 | 18,242 | 17,891 |
| Dessert banana | 17,569 | 13,876 | 14,793 | 18,050 | 16,338 | 15,915 |
| Banana for beer | 9,879 | 9,429 | 9,184 | 9,051 | 10,430 | 9,615 |
| Bush bean | 736 | 673 | 611 | 522 | 911 | 801 |

| Crop | Kigali City | South | West | North | East | Overall 2018 B |
|---------------|-------------|--------|--------|--------|--------|----------------|
| Climbing bean | 978 | 862 | 905 | 1,077 | 1,135 | 997 |
| Peas | 914 | 634 | 470 | 565 | 428 | 536 |
| Groundnut | 421 | 445 | 322 | 466 | 482 | 464 |
| Soybean | 567 | 284 | 402 | 345 | 446 | 343 |
| Vegetables | 8,462 | 11,168 | 11,642 | 11,986 | 12,610 | 11,641 |
| Fruits | 2,487 | 3,680 | 4,527 | 3,530 | 3,704 | 3,916 |

Source: NISR, SAS 2018, Season B

In regards to Season C 2018, results show that the average yields for of main season C crops in Rwanda were: 4,638 kg/ha for sweet potato, 10,399 kg/ha for Irish potato, 1,160 kg/ha for bush bean, 1,153 kg/ha for climbing bean, 600 kg/ha for pea, 646 kg/ha for soybean and 13,396 kg/ha for vegetables (see table 10.3).

Table 10. 3: Season C, Yield of main crops by Province (Kg/Ha)

| Crop | Kigali City | South | West | North | East | Total 2018C |
|----------------|-------------|--------|--------|--------|--------|-------------|
| Sweet potatoes | 5,646 | 4,775 | 3,706 | 4,588 | 5,039 | 4,638 |
| Irish potatoes | - | 5,528 | 10,683 | 10,313 | 5,710 | 10,399 |
| Bush bean | 658 | 1,048 | 919 | 1,626 | 1,620 | 1,160 |
| Climbing bean | - | 1,467 | - | 655 | - | 1,153 |
| Peas | - | 985 | 607 | 522 | - | 600 |
| Soybean | - | 565 | 944 | 870 | 471 | 646 |
| vegetables | 12,408 | 12,137 | 13,410 | 15,060 | 14,888 | 13,396 |

Source: NISR, SAS 2018, Season C

3.1.4. Sowing Date

SAS 2018 Season A results indicate that, for small scale farmers, 26.9 % of crops were sown before September 2017, 40.8 % of crops were sown September 2017, 27.0 % in October 2017 while the rest of crops have been sown after October 2017. For 2018 season B, 31.6% of the crops have been sown before January 2018, 11.8 % in January 2018, 30.5 % in February 2018, 21.7 % in March 2018 while the rest was sown after 31/3/ 2018. For Season C 2018, 35.6 % of crops were grown in June and 38.3 % in July 2018.

For large scale farmers, in Season A 2018, 41.3 % of crops were grown before September 2017 and 40.8 % in September 2017, while for season B 31.6 % of crops were grown before December 2017 and 30.5 % in January 2018. For Season C 35.6 % of crops were grown in June 2018 and 38.3 % in July 2018.

Table 11. 1 : Sowing dates per crop (Percentage) for Small scale farmers

| Crops | Season A 2018 | | | | | | | Season B 2018 | | | | | | | Season C 2018 | | | | | | | |
|-----------------|---------------|------------------|------------------|------------------|------------------|-------------|------------|---------------|------------------|-------------------|-------------------|-------------------|------------------|------------------|---------------|------------|--------------|-----------------|-----------------|-----------------|-------------|------------|
| | Before 01/09 | Between 01-15/09 | Between 16-30/09 | Between 01-15/10 | Between 16-30/10 | After 31/10 | Total | Before 31/12 | Between 01-15/01 | Between 16- 31/01 | Between 01- 15/02 | Between 16- 28/02 | Between 01-15/03 | Between 16-31/03 | After 31/03 | Total | Before 30/04 | Between 1-31/05 | Between 1-30/06 | Between 1-31/07 | After 31/07 | Total |
| Fruits | 100.0 | - | - | - | - | - | 100 | 89.4 | 1.5 | 1.5 | 1.5 | 1.5 | 4.6 | - | - | 100 | - | - | - | - | - | - |
| Vegetables | 16.9 | 16.9 | 5.5 | 16.9 | 11.0 | 32.7 | 100 | 12.4 | 7.8 | 6.2 | 13.2 | 9.5 | 15.2 | 9.9 | 25.9 | 100 | 2.4 | 21.7 | 38.1 | 32.6 | 5.2 | 100 |
| Other crops | 94.3 | 0.8 | 0.8 | 1.6 | 0.8 | 1.6 | 100 | 96.1 | 0.5 | - | 0.3 | 0.7 | 1.0 | 1.0 | 0.5 | 100 | - | - | - | - | - | - |
| Other cereals | 2.8 | 22.1 | 23.8 | 39.8 | 9.4 | 2.2 | 100 | 0.7 | 2.1 | 1.4 | 27.0 | 35.5 | 29.1 | 4.3 | - | 100 | - | - | - | - | - | - |
| Taro&Yams | 49.5 | 24.8 | 12.4 | 4.8 | 2.4 | 6.2 | 100 | 78.9 | 6.5 | 2.9 | 4.2 | 2.2 | 2.3 | 0.8 | 2.3 | 100 | - | - | - | - | - | - |
| Fodder crops | 81.0 | 3.5 | 2.6 | 2.6 | 2.6 | 7.8 | 100 | 50.6 | 4.5 | 1.3 | 10.3 | 9.0 | 7.1 | 9.0 | 8.3 | - | - | - | - | - | - | - |
| Maize | 6.2 | 30.1 | 27.1 | 26.3 | 7.4 | 3.0 | 100 | 0.4 | 2.5 | 3.3 | 23.8 | 32.9 | 31.3 | 5.0 | 0.8 | 100 | - | - | - | - | - | - |
| Paddy rice | 73.7 | 13.4 | 5.4 | 6.1 | 0.7 | 0.7 | 100 | 5.4 | 12.5 | 8.6 | 27.5 | 28.3 | 11.1 | 5.2 | 1.5 | 100 | - | - | - | - | - | - |
| Sorghum | 19.4 | 49.7 | 23.8 | 6.2 | 0.5 | 0.3 | 100 | 5.6 | 49.4 | 24.9 | 14.6 | 4.5 | 0.8 | 0.1 | - | 100 | - | - | - | - | - | - |
| Wheat | 8.9 | 28.9 | 26.7 | 22.2 | 6.7 | 6.7 | 100 | - | 1.2 | 1.2 | 3.6 | 10.7 | 27.4 | 21.4 | 34.5 | 100 | - | - | - | - | - | - |
| Bush bean | 0.8 | 21.7 | 27.5 | 36.6 | 10.6 | 3.0 | 100 | 0.1 | 0.9 | 1.4 | 21.2 | 33.3 | 36.4 | 5.5 | 1.1 | 100 | - | 3.4 | 10.1 | 62.4 | 24.2 | 100 |
| Climbing bean | 9.0 | 38.2 | 29.5 | 16.6 | 4.9 | 1.9 | 100 | 0.4 | 0.7 | 2.2 | 21.9 | 22.8 | 34.6 | 13.8 | 3.6 | 100 | - | - | 33.3 | 66.7 | - | 100 |
| Pea | 6.3 | 30.3 | 23.9 | 26.3 | 6.8 | 6.3 | 100 | - | 3.6 | 1.8 | 19.5 | 25.2 | 26.1 | 14.7 | 9.3 | 100 | - | 7.6 | 17.0 | 52.8 | 22.6 | 100 |
| Irish potato | 18.1 | 30.2 | 18.8 | 13.4 | 6.2 | 13.3 | 100 | 0.6 | 4.1 | 4.5 | 16.8 | 17.9 | 23.0 | 15.7 | 17.4 | 100 | 1.4 | 21.6 | 28.6 | 39.9 | 8.6 | 100 |
| Sweet potato | 15.7 | 14.0 | 10.0 | 16.1 | 13.3 | 31.1 | 100 | 8.5 | 15.3 | 7.9 | 15.4 | 9.5 | 12.7 | 7.8 | 22.9 | 100 | 1.7 | 16.9 | 43.6 | 34.0 | 3.9 | 100 |
| Soybean | 0.9 | 20.4 | 21.5 | 34.2 | 18.6 | 4.5 | 100 | 0.2 | 2.8 | 4.2 | 33.3 | 30.8 | 22.0 | 5.4 | 1.4 | 100 | - | 1.4 | 72.2 | 23.6 | 2.8 | 100 |
| Groundnut | 2.9 | 35.6 | 26.6 | 24.7 | 8.7 | 1.5 | 100 | - | 1.9 | 2.9 | 26.2 | 34.2 | 30.8 | 3.7 | 0.3 | 100 | - | - | - | - | - | - |
| Small red bean | - | 26.7 | 26.7 | 26.7 | 6.7 | 13.3 | 100 | - | - | - | 25.0 | 25.0 | 50.0 | - | - | 100 | - | - | - | - | - | - |
| Cassava | 91.3 | 3.9 | 2.0 | 1.6 | 1.0 | 0.2 | 100 | 99.5 | 0.3 | - | 0.2 | - | - | - | - | 100 | - | - | - | - | - | - |
| Cooking banan | 99.8 | 0.1 | - | - | - | 0.1 | 100 | 99.8 | - | - | - | 0.1 | - | - | 0.1 | 100 | - | - | - | - | - | - |
| Dessert banana | 99.7 | - | - | - | - | 0.3 | 100 | 99.8 | 0.2 | - | - | - | - | - | - | 100 | - | - | - | - | - | - |
| Banana for beer | 99.9 | - | - | 0.1 | - | - | 100 | 99.9 | - | 0.1 | - | - | - | - | - | 100 | - | - | - | - | - | - |
| Overall | 26.9 | 21.7 | 19.1 | 20.2 | 6.8 | 5.4 | 100 | 31.6 | 7.3 | 4.5 | 14.3 | 16.2 | 16.8 | 4.9 | 4.4 | 100 | 1.4 | 16.6 | 35.6 | 38.3 | 8.1 | 100 |

Source: NISR, SAS 2018

Table 11.2 : Sowing dates per crop (Percentage) for Large scale farmers

| Crops | Season A | | | | | | | Season B | | | | | | | | |
|-----------------|--------------|------------------|------------------|------------------|------------------|------------------|------------|--------------|------------------|-------------------|-------------------|-------------------|------------------|------------------|-------------|------------|
| | Before 01/09 | Between 01-15/09 | Between 16-30/09 | Between 01-15/10 | Between 16-30/10 | After 31/10/2017 | Total | Before 31/12 | Between 01-15/01 | Between 16- 31/01 | Between 01- 15/02 | Between 16- 28/02 | Between 01-15/03 | Between 16-31/03 | After 31/03 | Total |
| Fruits | 92.1 | 0.6 | 0.6 | 1.8 | 1.8 | 3.1 | 100 | 92.7 | 1.1 | 0.6 | 1.7 | 1.1 | 1.1 | - | 1.7 | 100 |
| Vegetables | 9.2 | 19.5 | 19.0 | 20.1 | 13.8 | 18.4 | 100 | 5.0 | 5.8 | 4.1 | 11.6 | 23.1 | 17.4 | 12.4 | 20.7 | 100 |
| Other crops | 97.0 | 1.5 | - | - | - | 1.5 | 100 | 77.9 | 0.8 | 0.8 | 0.8 | 2.9 | 11.1 | 2.5 | 3.3 | 100 |
| Other cereals | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | - | 100 | 100.0 | - | - | - | - | - | - | - | 100 |
| Taro &Yams | 50.0 | 50.0 | - | - | - | - | 100 | 100.0 | - | - | - | - | - | - | - | 100 |
| Fodder crops | 75.4 | 9.7 | 9.0 | 1.5 | - | 4.5 | 100 | - | - | - | - | - | - | - | - | - |
| Maize | 4.6 | 20.2 | 38.4 | 28.3 | 6.9 | 1.5 | 100 | 0.5 | 1.5 | 11.3 | 7.8 | 31.4 | 31.9 | 10.8 | 4.9 | 100 |
| Paddy rice | 94.0 | 3.6 | 1.2 | 1.2 | - | - | 100 | 5.9 | 23.8 | 22.8 | 24.8 | 12.9 | 5.9 | 3.0 | 1.0 | 100 |
| Sorghum | - | 37.5 | 56.3 | 6.3 | - | - | 100 | 9.3 | 9.3 | 5.3 | 18.7 | 40.0 | 13.3 | 2.7 | 1.3 | 100 |
| Wheat | 10.0 | - | 60.0 | 30.0 | - | - | 100 | - | 7.7 | - | - | 15.4 | 53.9 | 23.1 | - | 100 |
| Bush bean | 0.5 | 16.0 | 35.1 | 35.1 | 11.7 | 1.6 | 100 | - | - | 0.5 | 11.4 | 32.8 | 37.8 | 15.9 | 1.5 | 100 |
| Climbing bean | 22.2 | 44.4 | 11.1 | - | 22.2 | - | 100 | - | - | 33.3 | 11.1 | 22.2 | 22.2 | 11.1 | - | 100 |
| Pea | - | 16.7 | 33.3 | 16.7 | - | 33.3 | 100 | - | - | - | 16.7 | 33.3 | 33.3 | - | 16.7 | 100 |
| Irish potato | 13.5 | 32.4 | 18.9 | 21.6 | 10.8 | 2.7 | 100 | - | 4.4 | 2.9 | 17.7 | 27.9 | 23.5 | 11.8 | 11.8 | 100 |
| Sweet potato | 33.3 | 15.6 | 13.3 | 8.9 | 2.2 | 26.7 | 100 | 22.2 | 4.8 | 9.5 | 23.8 | 14.3 | 9.5 | - | 15.9 | 100 |
| Soybean | - | 5.7 | 28.6 | 48.6 | 2.9 | 14.3 | 100 | - | - | 7.1 | 17.9 | 32.1 | 21.4 | 7.1 | 14.3 | 100 |
| Groundnut | - | 25.0 | 43.8 | 12.5 | - | 18.8 | 100 | - | - | - | - | 33.3 | 66.7 | - | - | 100 |
| Cassava | 62.3 | 8.2 | 6.6 | 13.1 | - | 9.8 | 100 | 90.6 | 1.2 | - | 1.2 | 1.2 | 3.5 | 1.2 | 1.2 | 100 |
| Cooking banana | 88.4 | 2.3 | 6.2 | 0.8 | - | 2.3 | 100 | 98.4 | 0.8 | - | - | - | - | - | 0.8 | 100 |
| Dessert banana | 90.3 | - | - | - | - | 9.7 | 100 | 100.0 | - | - | - | - | - | - | - | 100 |
| Banana for beer | 100.0 | - | - | - | - | - | 100 | 100.0 | - | - | - | - | - | - | - | 100 |
| Overall | 41.3 | 12.6 | 19.5 | 15.9 | 5.2 | 5.5 | 100 | 41.3 | 3.4 | 4.5 | 8.2 | 16.1 | 16.1 | 5.9 | 4.7 | 100 |

Source: NISR, SAS 2018

Table 11.3 : Sowing dates per District (Percentage)

| District | Season A | | | | | | | Season B | | | | | | | Season C | | | | | | | |
|-------------|--------------|------------------|------------------|------------------|------------------|-------------|------------|--------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------|------------|--------------|-----------------|-----------------|-----------------|-------------|------------|
| | Before 01/09 | Between 01-15/09 | Between 16-30/09 | Between 01-15/10 | Between 16-30/10 | After 31/10 | Total | Before 31/12 | Between 01-15/01 | Between 16-31/01 | Between 01-15/02 | Between 16-28/02 | Between 01-15/03 | Between 16-31/03 | After 31/03 | Total | Before 30/04 | Between 1-31/05 | Between 1-30/06 | Between 1-31/07 | After 31/07 | Total |
| Nyarugenge | 30.2 | 5.5 | 13.8 | 36.5 | 11.2 | 2.9 | 100 | 41.8 | 7.3 | 4.6 | 14.6 | 13.6 | 14.6 | 2.7 | 0.8 | 100 | - | - | 62.5 | 37.5 | - | 100 |
| Gasabo | 25.8 | 25.6 | 27.4 | 13.4 | 2.6 | 5.3 | 100 | 32.3 | 8.5 | 7.8 | 20.2 | 15.7 | 9.2 | 2.0 | 4.3 | 100 | 8.7 | 56.5 | 26.1 | 8.7 | - | 100 |
| Kicukiro | 30.3 | 1.8 | 14.0 | 23.7 | 18.3 | 12.0 | 100 | 37.9 | 8.2 | 4.5 | 5.4 | 14.7 | 24.0 | 2.7 | 2.5 | 100 | - | - | - | - | - | 100 |
| Nyanza | 18.3 | 12.7 | 9.2 | 39.3 | 14.4 | 6.1 | 100 | 29.8 | 9.8 | 9.0 | 28.4 | 9.6 | 6.1 | 2.4 | 5.1 | 100 | - | 7.7 | 24.4 | 52.6 | 15.4 | 100 |
| Gisagara | 19.0 | 10.7 | 12.0 | 41.3 | 10.7 | 6.4 | 100 | 28.3 | 6.0 | 4.7 | 17.4 | 31.7 | 6.3 | 2.5 | 3.2 | 100 | 0.7 | 15.6 | 31.9 | 42.2 | 9.6 | 100 |
| Nyaruguru | 23.8 | 9.3 | 17.1 | 13.0 | 19.0 | 17.8 | 100 | 33.5 | 15.5 | 3.9 | 10.0 | 12.8 | 10.2 | 5.2 | 8.9 | 100 | - | 1.8 | 14.6 | 78.2 | 5.5 | 100 |
| Huye | 24.6 | 6.6 | 12.5 | 36.1 | 11.0 | 9.1 | 100 | 26.8 | 10.3 | 11.2 | 21.9 | 17.5 | 6.0 | 2.3 | 4.0 | 100 | - | 3.2 | 29.0 | 58.1 | 9.7 | 100 |
| Nyamagabe | 26.4 | 18.6 | 16.4 | 15.3 | 8.9 | 14.4 | 100 | 27.4 | 14.4 | 4.8 | 17.5 | 14.2 | 6.9 | 7.9 | 6.9 | 100 | - | 12.7 | 50.9 | 36.4 | - | 100 |
| Ruhango | 27.3 | 7.2 | 8.6 | 29.6 | 19.4 | 7.9 | 100 | 28.3 | 10.1 | 4.5 | 29.6 | 16.1 | 6.6 | 1.7 | 3.1 | 100 | - | 9.1 | 29.6 | 45.5 | 15.9 | 100 |
| Muhanga | 35.3 | 12.0 | 11.1 | 26.8 | 7.5 | 7.3 | 100 | 39.1 | 7.0 | 4.9 | 21.7 | 13.7 | 7.4 | 2.0 | 4.3 | 100 | 4.9 | 19.8 | 51.9 | 18.5 | 4.9 | 100 |
| Kamonyi | 22.5 | 3.3 | 13.2 | 37.8 | 18.2 | 5.0 | 100 | 33.2 | 7.1 | 6.4 | 16.0 | 21.0 | 9.9 | 1.5 | 5.0 | 100 | - | 17.1 | 37.1 | 45.7 | - | 100 |
| Karongi | 28.3 | 21.7 | 21.5 | 12.8 | 9.2 | 6.5 | 100 | 35.6 | 9.5 | 4.4 | 18.1 | 12.3 | 8.1 | 3.7 | 8.1 | 100 | - | 12.0 | 44.0 | 44.0 | - | 100 |
| Rutsiro | 32.0 | 28.3 | 18.9 | 10.4 | 4.8 | 5.6 | 100 | 37.6 | 2.6 | 2.3 | 24.3 | 9.6 | 11.0 | 4.7 | 7.9 | 100 | 1.0 | 21.0 | 19.0 | 55.0 | 4.0 | 100 |
| Rubavu | 62.1 | 21.1 | 3.0 | 4.2 | 2.4 | 7.2 | 100 | 13.1 | 5.2 | 5.2 | 18.2 | 19.6 | 19.2 | 10.7 | 8.9 | 100 | 6.5 | 17.4 | 28.3 | 45.7 | 2.2 | 100 |
| Nyabihu | 31.0 | 34.8 | 17.4 | 7.6 | 4.0 | 5.1 | 100 | 15.8 | 5.4 | 4.8 | 12.5 | 14.6 | 25.7 | 12.8 | 8.4 | 100 | 1.3 | 20.0 | 30.0 | 33.8 | 15.0 | 100 |
| Ngororero | 27.0 | 20.2 | 17.8 | 12.7 | 7.9 | 14.5 | 100 | 33.1 | 5.7 | 2.6 | 12.4 | 16.5 | 9.3 | 5.4 | 15.0 | 100 | - | 16.9 | 70.8 | 12.3 | - | 100 |
| Rusizi | 22.4 | 25.6 | 25.2 | 19.0 | 4.9 | 2.8 | 100 | 47.7 | 1.4 | 1.0 | 11.7 | 20.6 | 10.3 | 3.6 | 3.8 | 100 | - | 6.1 | 30.6 | 30.6 | 32.7 | 100 |
| Nyamashoke | 33.6 | 15.6 | 19.0 | 13.3 | 8.9 | 9.6 | 100 | 42.8 | 2.3 | 2.5 | 16.4 | 17.8 | 10.9 | 3.5 | 3.9 | 100 | - | - | 20.0 | 80.0 | - | 100 |
| Rulindo | 30.8 | 31.0 | 25.8 | 7.5 | 1.9 | 3.1 | 100 | 37.5 | 8.5 | 3.9 | 16.8 | 6.5 | 15.1 | 4.4 | 7.4 | 100 | 7.4 | 14.8 | 33.3 | 40.7 | 3.7 | 100 |
| Gakenke | 34.3 | 28.9 | 19.5 | 9.0 | 3.0 | 5.2 | 100 | 41.3 | 5.1 | 3.0 | 3.0 | 9.2 | 19.3 | 10.2 | 9.0 | 100 | 2.8 | 22.2 | 50.0 | 25.0 | - | 100 |
| Musanze | 40.4 | 30.3 | 13.1 | 6.0 | 2.3 | 8.0 | 100 | 13.6 | 3.5 | 1.9 | 6.9 | 7.5 | 26.4 | 26.9 | 13.3 | 100 | - | 17.7 | 28.4 | 49.0 | 4.9 | 100 |
| Burera | 21.9 | 42.2 | 17.1 | 6.8 | 4.8 | 7.4 | 100 | 9.8 | 13.9 | 5.5 | 6.0 | 9.6 | 23.0 | 17.5 | 14.7 | 100 | 1.5 | 23.2 | 41.3 | 24.6 | 9.4 | 100 |
| Gicumbi | 22.4 | 32.5 | 27.1 | 10.1 | 2.8 | 5.2 | 100 | 26.2 | 10.8 | 9.9 | 12.4 | 12.4 | 15.8 | 8.7 | 3.9 | 100 | 1.8 | 35.1 | 56.1 | 7.0 | - | 100 |
| Rwamagana | 31.1 | 20.9 | 19.0 | 21.4 | 4.7 | 2.9 | 100 | 46.7 | 9.1 | 3.6 | 15.8 | 12.6 | 7.3 | 1.9 | 3.1 | 100 | 5.0 | 20.0 | 25.0 | 45.0 | 5.0 | 100 |
| Nyagatare | 21.0 | 52.6 | 20.3 | 4.6 | 0.8 | 0.8 | 100 | 17.9 | 2.2 | 4.1 | 12.8 | 24.6 | 32.5 | 4.8 | 1.3 | 100 | 5.9 | 41.2 | 47.1 | 5.9 | - | 100 |
| Gatsibo | 24.8 | 24.7 | 30.6 | 15.8 | 2.7 | 1.4 | 100 | 37.3 | 3.7 | 3.4 | 9.6 | 18.3 | 22.3 | 3.5 | 1.8 | 100 | 2.2 | 13.3 | 51.1 | 28.9 | 4.4 | 100 |
| Kayonza | 17.2 | 16.4 | 26.6 | 31.0 | 5.2 | 3.7 | 100 | 26.6 | 8.8 | 2.8 | 7.9 | 14.8 | 32.9 | 4.6 | 1.7 | 100 | - | 60.0 | - | - | 40.0 | 100 |
| Kirehe | 27.0 | 8.8 | 17.4 | 36.4 | 7.7 | 2.7 | 100 | 37.5 | 9.9 | 4.6 | 15.2 | 17.5 | 13.6 | 1.3 | 0.4 | 100 | - | 10.0 | 70.0 | 20.0 | - | 100 |
| Ngoma | 27.4 | 17.7 | 28.3 | 19.2 | 5.2 | 2.3 | 100 | 41.5 | 5.7 | 1.0 | 9.6 | 19.0 | 14.9 | 5.3 | 2.9 | 100 | - | - | - | - | - | 100 |
| Bugesera | 31.0 | 13.8 | 15.7 | 27.6 | 6.8 | 5.1 | 100 | 28.8 | 8.6 | 4.3 | 8.1 | 11.5 | 33.4 | 4.0 | 1.5 | 100 | - | 3.7 | 14.6 | 58.5 | 23.2 | 100 |
| SSF Overall | 26.9 | 21.7 | 19.1 | 20.2 | 6.8 | 5.4 | 100 | 31.6 | 7.3 | 4.5 | 14.3 | 16.2 | 16.8 | 4.9 | 4.4 | 100 | 1.4 | 16.6 | 35.6 | 38.3 | 8.1 | 100 |
| LSF Overall | 41.3 | 12.6 | 19.5 | 15.9 | 5.2 | 5.5 | 100 | 41.3 | 3.4 | 4.5 | 8.2 | 16.1 | 16.1 | 5.9 | 4.7 | 100 | - | - | - | - | - | - |

Source: NISR, SAS 2018

3.1.5. Cropping system

The overall average number of crops in one plot is 1.8. In general, agricultural operators in many districts used most of their agricultural land to cultivate mixed crops in segments as it is found that only 36.4 % of cultivated plots are pure stand for season A versus 32.5. % for season B while for season C 77.8% of plots were pure stand. LSF devoted most of their agricultural land to cultivate crops in pure stand with 95.3 % for season A versus 96.6% for season B of all cultivated plots and this is confirmed by the average number of crops per plots 2.5 for season A 2.7 for season B and 1.5 for season C for small scale farmers whereas for the large-scale farmers. The summary of cropping system is found in table 12.1 and 12.2.

Table 12. 1: Percentage of plots within number of crops per plot by District

| District | 1 Crop | | | 2 Crops | | | 3 Crops | | | 4 Crops | | | 5 Crops | | | Average number of crops per plot | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|-------------|------------|------------|------------|------------|------------|----------------------------------|------------|------------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 17.3 | 12.2 | 39.5 | 26.7 | 29.3 | 36.8 | 31.1 | 32.2 | 23.7 | 19.2 | 18.8 | - | 5.7 | 7.5 | - | 2.7 | 2.8 | 1.8 |
| Gasabo | 15.3 | 14.2 | 60.5 | 30.5 | 25.6 | 23.7 | 36.1 | 26.5 | 15.8 | 13.3 | 18 | - | 4.8 | 15.7 | - | 2.6 | 3 | 1.6 |
| Kicukiro | 14.5 | 16.5 | - | 32 | 25.3 | - | 31.5 | 27.4 | - | 16.6 | 19 | - | 5.5 | 11.9 | - | 2.7 | 2.8 | - |
| Nyanza | 17.5 | 20.8 | 60.1 | 35.4 | 31.1 | 30.1 | 30.8 | 24.8 | 3.1 | 12.7 | 13.2 | 4.1 | 3.6 | 10.1 | 2.6 | 2.5 | 2.6 | 1.6 |
| Gisagara | 21.3 | 21.4 | 61.1 | 25.7 | 15.3 | 25.7 | 23.9 | 25.5 | 11.7 | 18 | 18.8 | 1.6 | 11.1 | 19 | - | 2.7 | 3 | 1.5 |
| Nyaruguru | 27.6 | 28 | 63.4 | 33.2 | 31.9 | 27.6 | 24.5 | 20.8 | 6.2 | 12.7 | 12.1 | 2.8 | 2 | 7.3 | - | 2.3 | 2.4 | 1.5 |
| Huye | 21.3 | 23.3 | 67.7 | 20.7 | 21.1 | 26.3 | 25 | 22.5 | 3.6 | 18.6 | 17.9 | 2.4 | 14.5 | 15.2 | - | 2.8 | 2.8 | 1.4 |
| Nyamagabe | 25.5 | 16.4 | 42.3 | 33.4 | 28.7 | 43.1 | 26.2 | 24.4 | 4.6 | 10.6 | 20.7 | 6.2 | 4.3 | 9.8 | 3.8 | 2.3 | 2.8 | 1.9 |
| Ruhango | 19.5 | 16.5 | 58.3 | 34.5 | 26 | 34.8 | 28.3 | 25.1 | 6.8 | 14.2 | 21.8 | - | 3.6 | 10.6 | - | 2.5 | 2.8 | 1.5 |
| Muhanga | 19.6 | 19.5 | 33.3 | 32.9 | 28.3 | 23.2 | 28.9 | 28.5 | 28.8 | 15.5 | 17.9 | 12.1 | 3 | 5.8 | 2.5 | 2.5 | 2.6 | 2.3 |
| Kamonyi | 17.9 | 14.4 | 57.3 | 25 | 23.9 | 25.2 | 31.9 | 27.1 | 17.5 | 21.6 | 21.4 | - | 3.6 | 13.2 | - | 2.7 | 2.9 | 1.6 |
| Karongi | 26.1 | 25.6 | 61.4 | 33.9 | 36.7 | 26.8 | 22.8 | 22.7 | 11.8 | 15.6 | 11.4 | - | 1.6 | 3.6 | - | 2.3 | 2.3 | 1.5 |
| Rutsiro | 31.8 | 27.4 | 36 | 32.6 | 32 | 57.6 | 20.9 | 21.7 | 6.5 | 11.6 | 11.1 | - | 3.1 | 7.8 | - | 2.2 | 2.4 | 1.7 |
| Rubavu | 37.8 | 49.8 | 84.1 | 40.7 | 39.5 | 11.9 | 20.2 | 10 | 4 | 1.3 | 0.7 | - | - | - | - | 1.8 | 1.6 | 1.2 |
| Nyabihu | 33.2 | 38.9 | 70.9 | 42.8 | 32.1 | 28.1 | 19 | 12.6 | 1 | 4.4 | 9.5 | - | 0.6 | 7 | - | 2 | 2.1 | 1.3 |
| Ngororero | 25.3 | 32.3 | 43.9 | 36.5 | 27.9 | 34.8 | 24.1 | 20.3 | 21.3 | 13.6 | 10.6 | - | 0.5 | 8.9 | - | 2.3 | 2.4 | 1.8 |
| Rusizi | 23.7 | 37.4 | 56.2 | 22.4 | 28.5 | 15.4 | 35.7 | 19.9 | 16.2 | 15.5 | 10.5 | 12.3 | 2.7 | 3.6 | - | 2.5 | 2.1 | 1.9 |
| Nyamasheke | 24.7 | 29.3 | 84.7 | 25.9 | 27.1 | 10.2 | 28.6 | 24.9 | 5.1 | 15.3 | 12.5 | - | 5.5 | 6.2 | - | 2.5 | 2.4 | 1.2 |
| Rulindo | 19.4 | 21 | 64.4 | 33.6 | 26.7 | 20.3 | 28 | 22.9 | 15.3 | 11.7 | 16.7 | - | 7.3 | 12.7 | - | 2.5 | 2.7 | 1.5 |
| Gakenke | 23.1 | 25.7 | 46.7 | 35.1 | 33.7 | 28 | 29.2 | 24 | 16.8 | 9.4 | 12 | 3.7 | 3.2 | 4.6 | 4.7 | 2.3 | 2.4 | 1.9 |
| Musanze | 41.5 | 37.5 | 64.9 | 45.4 | 38 | 26.1 | 12.1 | 19 | 9 | 1 | 4.9 | - | - | 0.7 | - | 1.7 | 1.9 | 1.4 |
| Burera | 38.4 | 38.6 | 69.6 | 47.3 | 36.9 | 22.3 | 10.4 | 17.7 | 5.9 | 3.4 | 4.7 | 2.2 | 0.5 | 2.1 | - | 1.8 | 1.9 | 1.4 |
| Gicumbi | 27.1 | 28.1 | 64.1 | 26.5 | 30.8 | 33 | 28.7 | 24.2 | 2.9 | 13.7 | 8.3 | - | 4 | 8.6 | - | 2.4 | 2.4 | 1.4 |
| Rwamagana | 9 | 13.6 | 71 | 17 | 23.4 | 19.4 | 29.5 | 26 | 9.7 | 25.7 | 21.1 | - | 18.8 | 15.9 | - | 3.3 | 3 | 1.4 |
| Nyagatare | 20.6 | 13.1 | 100 | 37.8 | 33.1 | - | 30.8 | 33.2 | - | 8.4 | 16.1 | - | 2.3 | 4.6 | - | 2.3 | 2.7 | 1 |
| Gatsibo | 17.4 | 12.6 | 65.1 | 30.7 | 26.4 | 28.2 | 33.1 | 27 | 4 | 14.2 | 20.3 | 2.7 | 4.7 | 13.7 | - | 2.6 | 3 | 1.4 |
| Kayanza | 13.6 | 13.8 | 86.7 | 28.2 | 25.8 | 13.3 | 33.5 | 24.9 | - | 18.7 | 23.4 | - | 5.9 | 12.1 | - | 2.8 | 2.9 | 1.1 |
| Kirehe | 12.5 | 16.4 | 90.8 | 24.6 | 26.1 | 5.3 | 35.5 | 24.4 | 3.9 | 19.6 | 18.5 | - | 7.7 | 14.5 | - | 2.9 | 2.9 | 1.1 |
| Ngoma | 9.9 | 12.9 | - | 24.6 | 23.4 | - | 34.5 | 27.2 | - | 22 | 19.8 | - | 8.9 | 16.6 | - | 3 | 3 | - |
| Bugesera | 25.6 | 15.5 | 39.1 | 34.7 | 38.4 | 42.1 | 32.3 | 28.8 | 15.8 | 6.6 | 11.4 | 3 | 0.8 | 5.8 | - | 2.2 | 2.5 | 1.8 |
| SSF Overall | 21.1 | 20.7 | 60.6 | 30.9 | 28.4 | 27.2 | 28.8 | 25 | 9.4 | 14.1 | 16 | 2.3 | 5.1 | 9.9 | 0.5 | 2.5 | 2.7 | 1.6 |
| LSF Overall | 50.8 | 49.7 | - | 28.8 | 28.5 | - | 13.5 | 12.5 | - | 4.7 | 6.9 | - | 2.2 | 2.5 | - | 1.8 | 1.8 | - |

Source: NISR, SAS 2018

Table 12. 2: Share of plots by cropping system in agricultural land per district (%)

| District | Pure cropping | | | Mixed cropping | | |
|--------------------|---------------|-------------|-------------|----------------|-------------|-------------|
| | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 52.7 | 42.9 | 91.6 | 47.3 | 57.1 | 8.4 |
| Gasabo | 30.4 | 31.6 | 71.4 | 69.6 | 68.4 | 28.6 |
| Kicukiro | 29.9 | 35.2 | - | 70.1 | 64.8 | - |
| Nyanza | 34.8 | 39.0 | 84.2 | 65.2 | 61.0 | 15.8 |
| Gisagara | 28.3 | 23.8 | 76.8 | 71.7 | 76.2 | 23.2 |
| Nyaruguru | 37.8 | 40.8 | 81.3 | 62.2 | 59.2 | 18.7 |
| Huye | 33.0 | 28.2 | 75.9 | 67.0 | 71.8 | 24.1 |
| Nyamagabe | 45.6 | 27.3 | 59.7 | 54.4 | 72.7 | 40.3 |
| Ruhango | 38.8 | 28.3 | 68.5 | 61.2 | 71.7 | 31.5 |
| Muhanga | 40.6 | 32.7 | 58.2 | 59.4 | 67.3 | 41.8 |
| Kamonyi | 30.4 | 25.0 | 72.0 | 69.6 | 75.0 | 28.0 |
| Karongi | 50.5 | 44.3 | 80.9 | 49.5 | 55.7 | 19.1 |
| Rutsiro | 47.8 | 42.5 | 51.2 | 52.2 | 57.5 | 48.8 |
| Rubavu | 64.6 | 65.4 | 93.4 | 35.4 | 34.6 | 6.6 |
| Nyabihu | 57.0 | 60.5 | 81.9 | 43.0 | 39.5 | 18.1 |
| Ngororero | 44.4 | 39.2 | 74.1 | 55.6 | 60.8 | 25.9 |
| Rusizi | 34.5 | 49.5 | 80.9 | 65.5 | 50.5 | 19.1 |
| Nyamasheke | 46.0 | 43.0 | 85.3 | 54.0 | 57.0 | 14.7 |
| Rulindo | 23.1 | 23.6 | 85.7 | 76.9 | 76.4 | 14.3 |
| Gakenke | 31.2 | 35.7 | 47.9 | 68.8 | 64.3 | 52.1 |
| Musanze | 62.9 | 55.8 | 81.5 | 37.1 | 44.2 | 18.5 |
| Burera | 52.2 | 49.7 | 72.2 | 47.8 | 50.3 | 27.8 |
| Gicumbi | 45.1 | 46.7 | 71.7 | 54.9 | 53.3 | 28.3 |
| Rwamagana | 23.5 | 22.3 | 83.3 | 76.5 | 77.7 | 16.7 |
| Nyagatare | 40.2 | 20.9 | 100.0 | 59.8 | 79.1 | - |
| Gatsibo | 25.8 | 14.9 | 71.9 | 74.2 | 85.1 | 28.1 |
| Kayanza | 22.7 | 27.3 | 98.3 | 77.3 | 72.7 | 1.7 |
| Kirehe | 24.9 | 26.0 | 81.4 | 75.1 | 74.0 | 18.6 |
| Ngoma | 23.5 | 24.4 | - | 76.5 | 75.6 | - |
| Bugesera | 35.4 | 20.3 | 42.2 | 64.6 | 79.7 | 57.8 |
| SSF Overall | 36.4 | 32.5 | 77.8 | 63.6 | 67.5 | 22.2 |
| LSF Overall | 95.3 | 96.6 | - | 4.7 | 3.4 | - |

Source: NISR, SAS 2018

3.2. Agricultural inputs

3.2.1. Use of Seeds

In Season A 2018, for small scale farmers, 87.5% of all seeds sown were traditional seeds, while the rest were improved seeds. For Large Scale Farmers 46.9% of all seeds sown were traditional seeds, while the rest were improved seeds. In Season B 2018, for small scale farmers, 94.2% of all seeds sown were traditional seeds, while the rest were improved seeds. For Large Scale Farmers 59.8% of all seeds sown were traditional seeds, while the rest were improved seeds. In Season C 2018, for small scale farmers, 86.7 % of all seeds sown were traditional seeds, while the rest were improved seeds.

Concerning use of seeds by crops and other important details such as type of seeds used by district, type of seeds used by crop in segments, type of seeds used by crop for Large Scale Farmers, Source of improved seeds by district, source of improved seeds by crop in Segments, and Source of improved seeds by crop for Large Scale Farmers are summarized in tables 13.1, 13.2 and 13.3.

Table13. 1: Type of seeds used by district (Percentage)

| District | Traditional seeds | | | Improved seeds | | |
|-------------|-------------------|--------------|-------------|----------------|--------------|-------------|
| | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 91.2 | 95.41 | 93.8 | 8.9 | 4.59 | 6.3 |
| Gasabo | 87.4 | 93.83 | 78.3 | 12.6 | 6.17 | 21.7 |
| Kicukiro | 90.3 | 95.24 | 0.0 | 9.7 | 4.76 | 0.0 |
| Nyanza | 88.8 | 93.52 | 82.1 | 11.2 | 6.48 | 18.0 |
| Gisagara | 73.0 | 92.19 | 89.6 | 27.0 | 7.81 | 10.4 |
| Nyaruguru | 85.5 | 94.76 | 94.6 | 14.5 | 5.24 | 5.5 |
| Huye | 87.4 | 90.69 | 96.8 | 12.6 | 9.31 | 3.2 |
| Nyamagabe | 96.7 | 96.86 | 85.5 | 3.3 | 3.14 | 14.6 |
| Ruhango | 95.1 | 96.71 | 81.8 | 4.9 | 3.29 | 18.2 |
| Muhanga | 95.7 | 97.75 | 100.0 | 4.3 | 2.25 | 0.0 |
| Kamonyi | 90.0 | 92.7 | 85.7 | 10.0 | 7.3 | 14.3 |
| Karongi | 89.0 | 98.37 | 72.0 | 11.1 | 1.63 | 28.0 |
| Rutsiro | 87.3 | 91.36 | 85.9 | 12.7 | 8.64 | 14.1 |
| Rubavu | 82.5 | 83.16 | 71.7 | 17.5 | 16.84 | 28.3 |
| Nyabihu | 88.5 | 90.88 | 95.0 | 11.5 | 9.12 | 5.0 |
| Ngororero | 89.7 | 94.06 | 100.0 | 10.3 | 5.94 | 0.0 |
| Rusizi | 89.4 | 89.9 | 85.7 | 10.6 | 10.1 | 14.3 |
| Nyamasheke | 92.8 | 92.8 | 20.0 | 7.2 | 7.2 | 80.0 |
| Rulindo | 87.9 | 97.6 | 59.3 | 12.1 | 2.4 | 40.7 |
| Gakenke | 77.2 | 94.66 | 83.3 | 22.8 | 5.34 | 16.7 |
| Musanze | 80.9 | 94.12 | 86.3 | 19.1 | 5.88 | 13.7 |
| Burera | 86.0 | 96.8 | 98.5 | 14.0 | 3.2 | 1.5 |
| Gicumbi | 90.6 | 94.32 | 87.7 | 9.4 | 5.68 | 12.3 |
| Rwamagana | 83.7 | 92.04 | 65.0 | 16.3 | 7.96 | 35.0 |
| Nyagatare | 87.4 | 92.89 | 76.5 | 12.6 | 7.11 | 23.5 |
| Gatsibo | 88.1 | 92.98 | 53.3 | 11.9 | 7.02 | 46.7 |
| Kayonza | 91.5 | 97.72 | 20.0 | 8.5 | 2.28 | 80.0 |
| Kirehe | 89.8 | 96.65 | 55.6 | 10.2 | 3.35 | 44.4 |
| Ngoma | 81.9 | 98.57 | 0.0 | 18.1 | 1.43 | 0.0 |
| Bugesera | 80.8 | 91.6 | 92.7 | 19.2 | 8.4 | 7.3 |
| SSF Overall | 87.5 | 94.22 | 86.7 | 12.5 | 5.78 | 13.3 |
| LSF Overall | 46.9 | 59.82 | - | 53.1 | 40.18 | - |

Source: NISR, SAS 2018

Table13. 2: Type of seeds used by crop (Percentage) for Small scale farmers

| Crop | Traditional seeds | | | Improved seeds | | |
|---------------|-------------------|----------|----------|----------------|----------|----------|
| | Season A | Season B | Season C | Season A | Season B | Season C |
| Fruits | 88.24 | 87.88 | - | 11.76 | 12.12 | - |
| Vegetables | 63.24 | 61.98 | - | 36.76 | 38.02 | 52.60 |
| Other crops | 83.61 | 66.42 | - | 16.39 | 33.58 | - |
| Other cereals | 100 | 100 | - | 0 | 0 | - |
| Taro &Yams | 99.52 | 100 | 97.99 | 0.48 | 0 | - |
| Fodder crops | 96.55 | 98.72 | 100.00 | 3.45 | 1.28 | - |
| Maize | 67.2 | 82.11 | - | 32.8 | 17.89 | - |
| Paddy rice | 27.79 | 43.22 | 100.00 | 72.21 | 56.78 | - |
| Sorghum | 100 | 99.81 | 95.95 | 0 | 0.19 | - |
| Wheat | 62.22 | 79.76 | 99.18 | 37.78 | 20.24 | - |
| Bush bean | 98.77 | 99.45 | 100.00 | 1.23 | 0.55 | 2.01 |
| Climbing bean | 98.63 | 98.96 | - | 1.37 | 1.04 | - |
| Pea | 99.3 | 99.7 | - | 0.7 | 0.3 | - |
| Irish potato | 95.94 | 97.47 | - | 4.06 | 2.53 | 4.05 |

| Crop | Traditional seeds | | | Improved seeds | | |
|-----------------|-------------------|--------------|--------------|----------------|-------------|--------------|
| | Season A | Season B | Season C | Season A | Season B | Season C |
| Sweet potato | 99.3 | 99.64 | - | 0.7 | 0.36 | 0.82 |
| Soybean | 99.32 | 99.8 | - | 0.68 | 0.2 | - |
| Groundnut | 99.64 | 100 | - | 0.36 | 0 | - |
| Small red bean | 100 | 100 | - | 0 | 0 | - |
| Cassava | 99.8 | 98.26 | - | 0.2 | 1.74 | - |
| Cooking banana | 99.9 | 99.41 | 47.40 | 0.1 | 0.59 | - |
| Dessert banana | 93.21 | 97.03 | - | 6.79 | 2.97 | - |
| Banana for beer | 99.57 | 99.19 | - | 0.43 | 0.81 | - |
| Total | 87.54 | 94.22 | 86.70 | 12.46 | 5.78 | 13.30 |

Source: NISR, SAS 2018

Table 13. 3: Type of seeds used by crop (%) for Large Scale Farmers

| Crop | Traditional seeds | | Improved seeds | | |
|-----------------|-------------------|-------------|----------------|-------------|-------------|
| | Season A | Season B | Season A | Season B | |
| Fruits | | 38.2 | 25.7 | 61.8 | 74.3 |
| Vegetables | | 22.4 | 25.0 | 77.7 | 75.0 |
| Other crops | | 24.0 | 19.6 | 76.0 | 80.4 |
| Other cereals | | 40.0 | - | 60.0 | 100.0 |
| Taro & Yams | | 100.0 | 100.0 | - | - |
| Fodder crops | | 72.7 | 80.6 | 27.3 | 19.4 |
| Maize | | 17.4 | 35.3 | 82.6 | 64.7 |
| Paddy rice | | 21.3 | 27.7 | 78.7 | 72.3 |
| Sorghum | | 100.0 | 100.0 | - | - |
| Wheat | | 20.0 | 53.9 | 80.0 | 46.2 |
| Bush bean | | 87.2 | 71.8 | 12.8 | 28.2 |
| Climbing bean | | 77.8 | 66.7 | 22.2 | 33.3 |
| Pea | | 83.3 | 100.0 | 16.7 | - |
| Irish potato | | 69.4 | 84.9 | 30.6 | 15.2 |
| Sweet potato | | 95.6 | 98.4 | 4.4 | 1.6 |
| Soybean | | 48.6 | 67.9 | 51.4 | 32.1 |
| Groundnut | | 100.0 | 100.0 | - | - |
| Cassava | | 54.2 | 91.8 | 45.8 | 8.2 |
| Cooking banana | | 60.5 | 76.1 | 39.5 | 23.9 |
| Dessert banana | | 45.8 | 64.7 | 54.2 | 35.3 |
| Banana for beer | | 57.9 | 77.3 | 42.1 | 22.7 |
| Total | | 46.9 | 59.8 | 53.1 | 40.2 |

Source: NISR, SAS 2018

Table13. 4: Source of improved seeds by district (Percentage)

| District | Government | | | Recognized seed multipliers | | | Agro dealers | | | NGOs | | | Market | | | Agriculture cooperatives | | | Other Source | | |
|---------------|-------------|-------------|------------|-----------------------------|-------------|------------|--------------|-------------|-------------|-------------|-------------|------------|------------|------------|-------------|--------------------------|-------------|------------|--------------|------------|----------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 44.1 | 13.6 | - | 2.9 | - | - | 47.1 | 77.3 | 28.6 | - | 4.6 | - | 5.9 | - | - | - | - | - | - | 4.6 | - |
| Gasabo | 14.5 | 13.5 | - | 2.9 | 8.1 | - | 58.0 | 70.3 | - | - | - | - | 24.6 | 8.1 | 20.0 | - | - | - | - | - | - |
| Kicukiro | 39.5 | 19.1 | - | 7.9 | - | - | 44.7 | 14.3 | - | 2.6 | 4.8 | - | 5.3 | 4.8 | - | - | 52.4 | - | - | 4.8 | - |
| Nyanza | 7.8 | 36.4 | 14.3 | - | 18.2 | - | 7.8 | 9.1 | 28.6 | 72.6 | 18.2 | - | 2.0 | 9.1 | 7.1 | 9.8 | 6.1 | - | - | 3.0 | - |
| Gisagara | 23.2 | 29.8 | 7.1 | 0.6 | 5.3 | - | 12.2 | 7.0 | - | 32.9 | 12.3 | - | 3.1 | 1.8 | - | 27.4 | 43.9 | - | 0.6 | - | - |
| Nyaruguru | 15.4 | 55.0 | 33.3 | 2.6 | 5.0 | - | 51.3 | - | 28.6 | 23.1 | 10.0 | - | 5.1 | 20.0 | - | - | 10.0 | - | 2.6 | - | - |
| Huye | 5.1 | 11.3 | - | 20.3 | 35.9 | - | 10.2 | 1.9 | - | 37.3 | 24.5 | 100.0 | 6.8 | 1.9 | - | 20.3 | 22.6 | - | - | 1.9 | - |
| Nyamagabe | - | - | - | - | - | - | 58.3 | 40.0 | 62.5 | 33.3 | 40.0 | - | 8.3 | 6.7 | 12.5 | - | 13.3 | 25.0 | - | - | - |
| Ruhango | 23.8 | 15.8 | - | 4.8 | 15.8 | - | 33.3 | 47.4 | 25.0 | 9.5 | 5.3 | - | 23.8 | - | - | 4.8 | 15.8 | - | - | - | - |
| Muhanga | 5.0 | 72.7 | - | 35.0 | 9.1 | - | 40.0 | 18.2 | - | 10.0 | - | - | 10.0 | - | - | - | - | - | - | - | - |
| Kamonyi | 25.0 | 20.5 | - | 7.7 | 13.6 | - | 40.4 | 34.1 | - | 25.0 | 2.3 | - | 1.9 | 9.1 | 20.0 | - | - | - | - | 20.5 | - |
| Karongi | 11.9 | 42.9 | - | 2.4 | 14.3 | - | 16.7 | - | - | 61.9 | 42.9 | - | 7.1 | - | 71.4 | - | - | - | - | - | - |
| Rutsiro | 27.7 | 13.5 | - | 10.6 | 21.6 | 42.9 | 14.9 | 18.9 | 28.6 | 36.2 | 21.6 | - | 10.6 | 24.3 | 7.1 | - | - | 7.1 | - | - | - |
| Rubavu | 17.2 | 14.3 | - | 3.5 | 6.1 | 23.1 | 37.9 | 42.9 | 53.9 | - | - | - | 39.7 | 36.7 | 23.1 | - | - | - | 1.7 | - | - |
| Nyabihu | 5.9 | 13.3 | - | 13.7 | 16.7 | - | 60.8 | 56.7 | - | 3.9 | - | - | 9.8 | 10.0 | 75.0 | - | - | - | 5.9 | 3.3 | - |
| Ngororero | 53.2 | 39.1 | - | 14.9 | 8.7 | - | 23.4 | 34.8 | - | 6.4 | 13.0 | - | 2.1 | 4.4 | - | - | - | - | - | - | - |
| Rusizi | 3.6 | 51.0 | - | 19.6 | 31.4 | - | 58.9 | 11.8 | 100.0 | 14.3 | - | - | 3.6 | 5.9 | - | - | - | - | - | - | - |
| Nyamasheke | 3.5 | 54.3 | - | - | 2.9 | - | 3.5 | - | 28.6 | 62.1 | 14.3 | 25.0 | - | 8.6 | 50.0 | 31.0 | 17.1 | 25.0 | - | 2.9 | - |
| Rulindo | 4.8 | 30.8 | - | 7.9 | 15.4 | 9.1 | 81.0 | 15.4 | 25.0 | - | 15.4 | - | 6.4 | 15.4 | 18.2 | - | - | 27.3 | - | 7.7 | - |
| Gakenke | 20.5 | 25.9 | - | 4.5 | 22.2 | - | 68.8 | 48.2 | - | 1.8 | - | - | 3.6 | 3.7 | 33.3 | 0.9 | - | - | - | - | - |
| Musanze | 34.9 | 18.2 | 7.1 | 3.6 | 18.2 | 14.3 | 39.8 | 22.7 | - | - | - | - | 21.7 | 40.9 | 28.6 | - | - | - | - | - | - |
| Burera | 20.0 | - | - | 5.7 | - | - | 60.0 | 66.7 | - | 2.9 | - | - | 7.1 | 26.7 | 100.0 | 1.4 | - | - | 2.9 | 6.7 | - |
| Gicumbi | 8.0 | 7.1 | - | 4.0 | 10.7 | 42.9 | 70.0 | 64.3 | - | - | - | - | 16.0 | 17.9 | 28.6 | - | - | - | 2.0 | - | - |
| Rwamagana | 9.0 | 11.8 | - | - | 37.3 | - | 60.4 | 41.2 | 57.1 | 9.9 | 3.9 | 14.3 | 2.7 | 3.9 | 28.6 | 11.7 | - | - | 6.3 | 2.0 | - |
| Nyagatare | 28.6 | 18.9 | - | 4.4 | 8.1 | - | 24.2 | 14.4 | - | 8.8 | 18.9 | - | 3.9 | 9.9 | 50.0 | 30.2 | 27.9 | - | - | 1.8 | - |
| Gatsibo | 9.2 | 11.4 | - | 4.6 | 15.9 | - | 45.0 | 22.7 | - | 29.8 | 40.9 | 4.8 | 4.6 | 5.7 | 71.4 | 5.3 | 1.1 | - | 1.5 | 2.3 | - |
| Kayonza | 8.6 | - | - | 5.4 | 11.1 | - | 23.7 | 40.7 | - | 18.3 | 14.8 | - | 4.3 | - | - | 35.5 | 29.6 | - | 4.3 | 3.7 | - |
| Kirehe | 11.4 | 33.3 | - | 2.4 | - | - | 30.1 | 2.4 | - | - | 4.8 | - | 7.3 | 4.8 | 100.0 | 47.2 | 50.0 | - | 1.6 | 4.8 | - |
| Ngoma | 12.5 | 42.9 | - | 2.5 | 14.3 | - | 58.8 | 28.6 | - | 18.8 | - | - | 5.0 | - | - | 2.5 | - | - | - | 14.3 | - |
| Bugesera | 12.5 | 5.9 | - | 10.7 | 3.9 | - | 26.8 | 51.0 | - | 3.6 | - | - | 3.6 | 2.0 | 83.3 | 42.9 | 33.3 | 16.7 | - | 3.9 | - |
| Rwanda | 17.3 | 21.5 | 2.6 | 5.7 | 13.5 | 7.7 | 39.2 | 27.7 | 53.6 | 15.4 | 11.9 | 2.1 | 7.5 | 9.3 | 29.9 | 13.8 | 13.5 | 4.1 | 1.1 | 2.7 | - |

Source: NISR, SAS 2018

The table 13.4 indicates the sources of improved seeds used throughout 2018 year. For Small Scale Farmers rely primarily on three main sources for their improved seed: Agro dealers' contribution was 39.2 % followed by government agencies (referred to as Minagri/RAB/Districts) with 17.3 % and NGOs with 15.4 %. For season B, Agro dealers' contribution was 27.7 % followed by government agencies (referred to as Minagri/RAB/Districts) with 21.5 % and recognized seed multipliers with 13.5 %. For season C the main source was Agro dealers with 53.6%, Market source with 29.9% and recognized seed multipliers with 7.7%. While for Large Scale farmers, their main sources were Government agencies with 32.4 %, followed by agro dealers with 26.0 %, and recognized seed multipliers with 19.9 %, whereas for season B their seed suppliers were Government agencies with 42.0 %, followed by recognized seed multipliers with 22.5 % and agro dealers with 12.2 %.

Table 13.5: Source of improved seeds by crop (Percentage) in Segments

| Crop | Government | | | Recognized seed multipliers | | | Agro-dealers | | | NGOs | | | Market | | | Agriculture cooperatives | | | Other source | | | |
|-----------------|-------------|-------------|------------|-----------------------------|-------------|------------|--------------|-------------|-------------|-------------|-------------|------------|------------|------------|-------------|--------------------------|-------------|------------|--------------|------------|------------|---|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | |
| Fruits | 16.7 | - | - | 66.7 | 37.5 | - | - | 12.5 | - | 16.7 | 25.0 | - | - | - | - | - | - | - | - | - | 25.0 | - |
| Vegetables | - | 4.4 | 1.2 | 3.2 | 1.1 | - | 37.6 | 43.5 | 2.3 | 2.2 | 5.4 | 32.6 | 55.9 | 40.2 | 32.6 | - | - | 3.5 | 1.1 | 5.4 | - | |
| Other crops | 45.0 | 77.9 | - | 15.0 | 18.4 | - | - | 0.7 | - | 25.0 | - | - | - | 0.7 | - | - | 0.7 | - | 15.0 | 1.5 | - | |
| Taro & Yams | - | - | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - | - | - | - | - | - | - | |
| Fodder crops | 50.0 | - | - | - | - | - | 25.0 | 100.0 | - | 25.0 | - | - | - | - | - | - | - | - | - | - | - | |
| Maize | 20.1 | 12.5 | - | 2.2 | 3.4 | - | 49.6 | 47.4 | - | 18.1 | 23.0 | - | 5.5 | 10.5 | - | 3.5 | 1.1 | - | 1.0 | 2.0 | - | |
| Paddy rice | 1.0 | 10.2 | - | 11.7 | 23.5 | - | 0.7 | 5.3 | - | 5.5 | 0.9 | - | - | 1.3 | - | 81.1 | 58.4 | - | - | 0.4 | - | |
| Wheat | 52.9 | 100.0 | - | - | - | - | 47.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Bush bean | 28.2 | 11.8 | 66.7 | 2.6 | - | - | 23.1 | 64.7 | - | 33.3 | - | - | 7.7 | 5.9 | - | - | 11.8 | 33.3 | 5.1 | 5.9 | - | |
| Climbing bean | 21.4 | 28.6 | - | 14.3 | 14.3 | - | 7.1 | 35.7 | - | 14.3 | 14.3 | - | 35.7 | 7.1 | - | - | - | - | 7.1 | - | - | |
| Pea | 33.3 | 16.7 | - | 33.3 | 8.3 | - | - | 25.0 | - | - | 33.3 | - | 33.3 | 8.3 | - | - | 8.3 | - | - | - | - | |
| Irish potato | 8.1 | 100.0 | 6.7 | 51.4 | - | 73.3 | 10.8 | - | - | 2.7 | - | 13.3 | 27.0 | - | - | - | - | 6.7 | - | - | - | |
| Sweet potato | 37.5 | 8.3 | - | 25.0 | 75.0 | 100 | 12.5 | 4.2 | - | 12.5 | 4.2 | - | 12.5 | 8.3 | - | - | - | - | - | - | - | |
| Soybean | 33.3 | 50.0 | - | - | 33.3 | - | 33.3 | - | - | 33.3 | 16.7 | - | - | - | - | - | - | - | - | - | - | |
| Groundnut | - | - | - | - | - | - | - | - | - | 100 | 100 | - | - | - | - | - | - | - | - | - | - | |
| Cassava | 100.0 | 50.0 | - | - | 18.2 | - | - | 4.6 | - | - | 9.1 | - | - | 9.1 | - | - | - | - | - | - | 9.1 | |
| Cooking banana | - | - | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - | |
| Dessert banana | 23.1 | 29.4 | - | 61.5 | 35.3 | - | 3.9 | 5.9 | - | 7.7 | 5.9 | - | - | - | - | - | - | - | 3.9 | 23.5 | - | |
| Banana for beer | 40.0 | 27.3 | - | 40.0 | 36.4 | - | - | - | - | 20.0 | - | - | - | 18.2 | - | - | - | - | - | 18.2 | - | |
| Overall | 17.3 | 21.5 | 2.6 | 5.7 | 13.5 | 7.7 | 39.2 | 27.8 | 53.6 | 15.4 | 11.9 | 2.1 | 7.5 | 9.3 | 29.9 | 13.8 | 13.5 | 4.1 | 1.1 | 2.7 | 100 | |

Source: NISR, SAS 2018

Table 13. 6: Source of improved seeds by crop (Percentage) for Large Scale Farmers

| Crop | Government (MINAGRI/RAB/District) | | Recognized seed multipliers | | Agro dealers | | NGOs | | Market | | Agriculture cooperatives | | Other sources | |
|-----------------|-----------------------------------|-------------|-----------------------------|-------------|--------------|-------------|------------|------------|-------------|-------------|--------------------------|----------|---------------|------------|
| | Season A | Season B | Season A | Season B | Season A | Season B | Season A | Season B | Season A | Season B | Season A | Season B | Season A | Season B |
| Fruits | 59.5 | 43.6 | 40.5 | 41.0 | - | 5.1 | - | 1.3 | - | 7.7 | - | - | - | 1.3 |
| Vegetables | - | 3.3 | 0.8 | 2.2 | 22.7 | 15.6 | 0.8 | 22.2 | 57.6 | 56.7 | - | - | 18.2 | - |
| Other crops | 57.9 | 65.9 | 5.3 | 26.8 | 5.3 | 2.4 | - | - | 15.8 | 4.9 | - | - | 15.8 | - |
| Other cereals | - | - | - | - | - | - | - | - | - | 100 | - | - | 100 | - |
| Fodder crops | 50.0 | 72.7 | 16.7 | 3.0 | 16.7 | 21.2 | - | 3.0 | 11.1 | - | - | - | 5.6 | - |
| Maize | 42.1 | 64.4 | 8.4 | 0.8 | 46.3 | 27.3 | 1.8 | 0.8 | - | 4.6 | 1.4 | - | - | 2.3 |
| Paddy rice | 10.2 | 5.9 | 79.7 | 82.4 | 6.8 | 1.5 | - | - | - | - | 3.4 | - | - | 10.3 |
| Wheat | - | 100 | - | - | 87.5 | - | - | - | - | - | - | - | 12.5 | - |
| Bush bean | 29.2 | 34.6 | 4.2 | 20.0 | 8.3 | 9.1 | 50.0 | 10.9 | - | - | - | - | 8.3 | 25.5 |
| Climbing bean | 50.0 | 100.0 | 50.0 | - | - | - | - | - | - | - | - | - | - | - |
| Pea | - | - | - | - | - | - | - | - | 100 | - | - | - | - | - |
| Irish potato | 27.3 | 20.0 | 18.2 | 10.0 | - | - | 9.1 | - | - | - | - | - | 45.5 | 70.0 |
| Sweet potato | - | 100 | 100 | - | - | - | - | - | - | - | - | - | - | - |
| Soybean | 72.2 | 55.6 | - | - | 5.6 | - | - | 33.3 | - | 11.1 | - | - | 22.2 | - |
| Cassava | 100.0 | 100.0 | - | - | - | - | - | - | - | - | - | - | - | - |
| Cooking banana | 10.0 | 71.4 | 90.0 | 19.1 | - | 4.8 | - | 4.8 | - | - | - | - | - | - |
| Dessert banana | 30.8 | 50.0 | 69.2 | 41.7 | - | - | - | 8.3 | - | - | - | - | - | - |
| Banana for beer | 75.0 | 20.0 | 25.0 | 80.0 | - | - | - | - | - | - | - | - | - | - |
| Overall | 32.4 | 42.0 | 19.9 | 22.5 | 26.0 | 12.1 | 2.7 | 6.0 | 11.9 | 11.8 | 0.9 | - | 6.3 | 5.6 |

Source: NISR, SAS 2018

3.2.2 Use of fertilizers

In 2018 Season A, for small scale farmers, organic fertilizers were applied in 48.2 % of all cultivated plots and inorganic fertilizers were applied in 24.8 % of all cultivated plots. For Large Scale Farmers organic fertilizers and inorganic fertilizers were applied in 50.2 % and 42.8% of all cultivated plots respectively. Among inorganic fertilizer types, Urea was most used for both small- and large-scale farmers at 37.2% and 37.7% respectively. In 2018 Season B, for small scale farmers, organic fertilizers were applied in 38.6% % of all cultivated plots and inorganic fertilizers were applied in 18.5% of all cultivated plots. For Large Scale Farmers organic fertilizers and inorganic fertilizers were applied in 34.6 % and 33 % of all cultivated plots respectively. Among inorganic fertilizer types, Urea was most used for both small- and large-scale farmers at 33.1% and 36.6% respectively. In 2018 Season C, for small scale farmers, organic fertilizers were applied in 62.8% of all cultivated plots and inorganic fertilizers were applied in 44.7 % of all cultivated plots. (See table 14.1, 14.2, 14.3).

Table 14. 1: Percentage of plots with organic fertilizer use per district

| District | Used | | | Not used | | |
|--------------------|--------------|-------------|--------------|--------------|--------------|--------------|
| | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 36.24 | 34.50 | 23.08 | 63.76 | 65.50 | 76.92 |
| Gasabo | 43.49 | 39.30 | 85.71 | 56.51 | 60.70 | 14.29 |
| Kicukiro | 35.05 | 25.48 | - | 64.95 | 74.52 | - |
| Nyanza | 44.33 | 27.70 | 46.97 | 55.67 | 72.30 | 53.03 |
| Gisagara | 42.43 | 18.72 | 32.46 | 57.57 | 81.28 | 67.54 |
| Nyaruguru | 69.07 | 64.41 | 89.36 | 30.93 | 35.59 | 10.64 |
| Huye | 47.00 | 32.69 | 50.00 | 53.00 | 67.31 | 50.00 |
| Nyamagabe | 58.61 | 66.40 | 86.36 | 41.39 | 33.60 | 13.64 |
| Ruhango | 39.07 | 30.89 | 65.71 | 60.93 | 69.11 | 34.29 |
| Muhanga | 65.02 | 58.15 | 79.37 | 34.98 | 41.85 | 20.63 |
| Kamonyi | 55.13 | 49.49 | 64.29 | 44.87 | 50.51 | 35.71 |
| Karongi | 56.03 | 47.57 | 45.45 | 43.97 | 52.43 | 54.55 |
| Rutsiro | 56.90 | 51.00 | 69.70 | 43.10 | 49.00 | 30.30 |
| Rubavu | 31.72 | 33.95 | 36.96 | 68.28 | 66.05 | 63.04 |
| Nyabihu | 59.73 | 68.16 | 74.36 | 40.27 | 31.84 | 25.64 |
| Ngororero | 71.24 | 64.37 | 60.00 | 28.76 | 35.63 | 40.00 |
| Rusizi | 43.17 | 26.36 | 70.27 | 56.83 | 73.64 | 29.73 |
| Nyamasheke | 54.26 | 49.01 | 80.00 | 45.74 | 50.99 | 20.00 |
| Rulindo | 62.58 | 59.39 | 95.00 | 37.42 | 40.61 | 5.00 |
| Gakenke | 79.41 | 72.33 | 96.55 | 20.59 | 27.67 | 3.45 |
| Musanze | 57.05 | 59.68 | 88.12 | 42.95 | 40.32 | 11.88 |
| Burera | 72.81 | 67.09 | 67.16 | 27.19 | 32.91 | 32.84 |
| Gicumbi | 72.76 | 65.68 | 90.74 | 27.24 | 34.32 | 9.26 |
| Rwamagana | 38.61 | 17.55 | 57.89 | 61.39 | 82.45 | 42.11 |
| Nyagatare | 28.99 | 21.73 | 11.76 | 71.01 | 78.27 | 88.24 |
| Gatsibo | 46.23 | 27.93 | 67.57 | 53.77 | 72.07 | 32.43 |
| Kayonza | 30.26 | 19.63 | 40.00 | 69.74 | 80.37 | 60.00 |
| Kirehe | 41.31 | 20.63 | 71.43 | 58.69 | 79.37 | 28.57 |
| Ngoma | 47.62 | 17.57 | - | 52.38 | 82.43 | - |
| Bugesera | 20.30 | 17.09 | 8.11 | 79.70 | 82.91 | 91.89 |
| SSF Overall | 48.15 | 38.6 | 62.79 | 51.85 | 61.42 | 37.21 |
| LSF Overall | 50.26 | 34.6 | - | 49.74 | 65.44 | - |

Source: NISR, SAS 2018

Table 14. 2: Table Percentage of plots with inorganic fertilizer use per district

| District | Used | | | Not used | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 5.2 | 4.8 | 7.69 | 94.8 | 95.2 | 76.9 |
| Gasabo | 11.0 | 10.5 | 76.19 | 89.0 | 89.5 | 14.3 |
| Kicukiro | 16.4 | 13.0 | - | 83.6 | 87.0 | - |
| Nyanza | 17.0 | 12.8 | 18.18 | 83.0 | 87.2 | 53.0 |
| Gisagara | 36.5 | 22.6 | 28.07 | 63.5 | 77.4 | 67.5 |
| Nyaruguru | 34.0 | 23.7 | 8.51 | 66.0 | 76.3 | 10.6 |
| Huye | 29.3 | 23.4 | 21.43 | 70.7 | 76.6 | 50.0 |
| Nyamagabe | 19.3 | 24.8 | 20.45 | 80.7 | 75.2 | 13.6 |
| Ruhango | 2.7 | 7.3 | 28.57 | 97.4 | 92.7 | 34.3 |
| Muhanga | 8.6 | 3.0 | 11.11 | 91.4 | 97.0 | 20.6 |
| Kamonyi | 8.0 | 1.7 | 25 | 92.0 | 98.3 | 35.7 |
| Karongi | 24.5 | 17.2 | 27.27 | 75.5 | 82.8 | 54.6 |
| Rutsiro | 30.6 | 30.7 | 77.27 | 69.4 | 69.3 | 30.3 |
| Rubavu | 45.4 | 52.6 | 86.96 | 54.6 | 47.4 | 63.0 |
| Nyabihu | 43.7 | 46.6 | 75.64 | 56.3 | 53.4 | 25.6 |
| Ngororero | 20.3 | 19.4 | 4.44 | 79.7 | 80.6 | 40.0 |
| Rusizi | 45.1 | 33.3 | 62.16 | 54.9 | 66.7 | 29.7 |
| Nyamashoke | 38.2 | 40.1 | 20 | 61.8 | 59.9 | 20.0 |
| Rulindo | 24.8 | 12.6 | 45 | 75.2 | 87.4 | 5.0 |
| Gakenke | 42.7 | 30.7 | 41.38 | 57.4 | 69.3 | 3.5 |
| Musanze | 39.3 | 33.6 | 77.23 | 60.7 | 66.4 | 11.9 |
| Burera | 29.0 | 20.3 | 50.75 | 71.1 | 79.8 | 32.8 |
| Gicumbi | 19.2 | 16.5 | 59.26 | 80.8 | 83.5 | 9.3 |
| Rwamagana | 33.9 | 22.2 | 78.95 | 66.1 | 77.8 | 42.1 |
| Nyagatare | 26.1 | 16.7 | 41.18 | 73.9 | 83.3 | 88.2 |
| Gatsibo | 22.3 | 11.9 | 43.24 | 77.7 | 88.1 | 32.4 |
| Kayanza | 16.4 | 9.5 | 60 | 83.7 | 90.5 | 60.0 |
| Kirehe | 17.8 | 9.2 | 71.43 | 82.2 | 90.8 | 28.6 |
| Ngoma | 30.7 | 6.3 | - | 69.3 | 93.7 | - |
| Bugesera | 15.5 | 14.2 | 40.54 | 84.5 | 85.8 | 91.9 |
| SSF Overall | 24.8 | 18.5 | 44.7 | 75.2 | 81.5 | 37.2 |
| LSF Overall | 42.8 | 33.0 | - | 57.2 | 67.0 | - |

Source: NISR, SAS 2018

Table 14. 3: Types of inorganic fertilizers use per district (in percentage)

| Districts | NPK 17-17-17 | | | NPK 20-10-10 | | | NPK 25-5-5 | | | Urea | | |
|------------|--------------|----------|----------|--------------|----------|----------|------------|----------|----------|----------|----------|----------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 4.8 | 13.3 | 50.0 | - | - | - | - | - | - | 42.9 | 46.7 | - |
| Gasabo | 20.0 | 23.7 | 64.7 | - | - | - | - | - | - | 44.4 | 42.1 | 23.5 |
| Kicukiro | 29.8 | 35.4 | - | - | - | - | - | - | - | 36.2 | 39.6 | - |
| Nyanza | 10.1 | 25.5 | 25.0 | 2.5 | 5.5 | - | 1.3 | - | - | 41.8 | 34.6 | 50.0 |
| Gisagara | 26.3 | 40.6 | 33.3 | 0.5 | 2.1 | - | 0.9 | - | - | 42.4 | 45.5 | 25.0 |
| Nyaruguru | 16.1 | 18.8 | - | 3.2 | - | - | 1.1 | 4.4 | - | 35.5 | 21.7 | 75.0 |
| Huye | 41.4 | 38.9 | 42.9 | 2.1 | - | - | 0.7 | - | - | 42.1 | 47.8 | 28.6 |
| Nyamagabe | 17.1 | 17.4 | 53.9 | 1.4 | - | - | - | 1.1 | - | 38.6 | 33.7 | 38.5 |
| Ruhango | 44.4 | 34.3 | 10.0 | - | - | - | - | - | 10.0 | 11.1 | 57.1 | 80.0 |
| Muhanga | 18.2 | 22.2 | - | 9.1 | - | - | - | 33.3 | - | 45.5 | 22.2 | 28.6 |
| Kamonyi | 4.9 | 20.0 | - | 2.4 | 20.0 | - | - | - | 14.3 | 43.9 | 20.0 | 42.9 |
| Karongi | 5.0 | 5.5 | 33.3 | 3.0 | - | 16.7 | - | - | - | 40.6 | 27.3 | 33.3 |
| Rutsiro | 24.2 | 21.6 | 72.9 | 10.9 | 0.9 | - | - | - | - | 27.3 | 31.0 | 17.0 |
| Rubavu | 70.2 | 56.0 | 82.5 | - | - | - | - | - | - | 13.0 | 15.1 | 7.5 |
| Nyabihu | 56.5 | 63.4 | 74.6 | - | 1.6 | - | - | - | - | 24.5 | 18.7 | 3.4 |
| Ngororero | 23.9 | 35.1 | 50.0 | 1.1 | - | - | - | - | - | 35.2 | 29.8 | 50.0 |
| Rusizi | 23.4 | 39.0 | 51.7 | 3.2 | - | - | 0.7 | - | - | 39.2 | 39.6 | 20.7 |
| Nyamashoke | 24.3 | 32.8 | - | 4.5 | 3.5 | - | - | - | - | 31.6 | 26.3 | - |

| Districts | NPK 17-17-17 | | | NPK 20-10-10 | | | NPK 25-5-5 | | | Urea | | |
|-------------|--------------|----------|----------|--------------|----------|----------|------------|----------|----------|----------|----------|----------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Rulindo | 5.6 | 42.2 | 27.3 | 5.6 | - | - | - | - | - | 47.2 | 28.9 | 36.4 |
| Gakenke | 1.2 | 5.9 | 38.5 | 0.8 | 3.4 | - | - | - | - | 46.2 | 28.0 | 15.4 |
| Musanze | 35.3 | 53.2 | 79.8 | - | - | - | - | - | - | 32.3 | 24.8 | 7.6 |
| Burera | 53.9 | 67.1 | 91.2 | - | - | - | - | - | 1.5 | 11.7 | 12.9 | 4.4 |
| Gicumbi | 42.7 | 42.6 | 81.3 | 1.3 | - | 6.3 | - | - | - | 33.3 | 34.4 | 6.3 |
| Rwamagana | 12.3 | 29.6 | 33.3 | 9.0 | 9.3 | - | - | - | - | 32.3 | 37.0 | 40.0 |
| Nyagatare | 16.2 | 21.2 | 14.3 | 0.3 | 0.9 | - | - | 0.9 | - | 50.6 | 48.5 | 28.6 |
| Gatsibo | 3.1 | 23.9 | 22.2 | 2.7 | 3.3 | - | - | - | - | 44.9 | 31.5 | 55.6 |
| Kayonza | 34.0 | 29.6 | - | 2.1 | 2.8 | - | - | - | - | 36.8 | 33.8 | 100.0 |
| Kirehe | 4.6 | 3.0 | 37.5 | 4.0 | 4.0 | - | 0.6 | - | - | 31.6 | 35.0 | 37.5 |
| Ngoma | 2.5 | 10.5 | - | 0.8 | 10.5 | - | - | - | - | 41.2 | 36.8 | - |
| Bugesera | 46.2 | 39.1 | 26.5 | - | - | - | - | - | - | 44.3 | 34.8 | 34.8 |
| SSF Overall | 22.9 | 32.8 | 59.6 | 2.3 | 1.7 | 0.5 | 0.2 | 0.4 | 0.5 | 37.7 | 33.1 | 19.5 |
| LSF Overall | 25.0 | 26.0 | - | 0.4 | 1.2 | - | 0.1 | - | - | 37.2 | 36.6 | - |

Source: NISR, SAS 2018

Types of inorganic fertilizers use per district (%) Cont'd

| Districts | Liquid urea | | | DAP | | | TSP | | | KCL/MOP | | | Other Fertilizers | | |
|-------------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------------|----------|----------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | - | 6.7 | - | 9.5 | 33.3 | 50.0 | 19.1 | - | - | 19.1 | - | - | 4.8 | - | - |
| Gasabo | - | - | 23.5 | 35.6 | 34.2 | 11.8 | - | - | - | - | - | - | - | - | - |
| Kicukiro | - | - | - | 34.0 | 25.0 | - | - | - | - | - | - | - | - | - | - |
| Nyanza | - | - | 50.0 | 43.0 | 32.7 | 25.0 | - | - | - | - | - | - | 1.3 | 1.8 | - |
| Gisagara | - | - | 25.0 | 30.0 | 11.9 | 38.9 | - | - | - | - | - | - | - | - | - |
| Nyaruguru | - | - | 75.0 | 44.1 | 53.6 | 25.0 | - | - | - | - | - | - | - | 1.5 | - |
| Huye | - | - | 28.6 | 11.4 | 12.4 | 28.6 | - | - | - | - | 0.9 | - | 2.1 | - | - |
| Nyamagabe | - | - | 38.5 | 42.9 | 46.7 | 7.7 | - | - | - | - | - | - | - | 1.1 | - |
| Ruhango | - | - | 80.0 | 44.4 | 8.6 | - | - | - | - | - | - | - | - | - | - |
| Muhanga | - | 11.1 | 28.6 | 27.3 | 11.1 | 71.4 | - | - | - | - | - | - | - | - | - |
| Kamonyi | 2.4 | - | 42.9 | 46.3 | 40.0 | 42.9 | - | - | - | - | - | - | - | - | - |
| Karongi | - | - | 33.3 | - | 67.3 | 16.7 | - | - | - | - | - | - | - | - | - |
| Rutsiro | 0.8 | 1.7 | 17.0 | 32.8 | 44.0 | 10.2 | - | - | - | - | - | - | 3.9 | 0.9 | - |
| Rubavu | 9.2 | 13.3 | 7.5 | 7.6 | 15.1 | 7.5 | - | - | - | - | - | - | - | 0.6 | - |
| Nyabihu | 2.0 | 1.6 | 3.4 | 17.0 | 11.4 | 17.0 | - | - | - | - | - | - | - | 3.3 | 5 |
| Ngororero | - | - | 50.0 | 39.8 | 33.3 | - | - | - | - | - | - | - | - | 1.8 | - |
| Rusizi | - | - | 20.7 | 32.4 | 20.9 | 27.6 | - | - | - | - | - | - | 1.1 | 0.5 | - |
| Nyamasheke | - | - | - | 39.0 | 30.4 | 100.0 | - | - | - | - | - | - | 0.6 | 7.0 | - |
| Rulindo | 0.8 | - | 36.4 | 40.8 | 24.4 | 36.4 | - | - | - | - | - | - | - | 4.4 | - |
| Gakenke | - | - | 15.4 | 51.8 | 62.7 | 46.2 | - | - | - | - | - | - | - | - | - |
| Musanze | - | - | 7.6 | 28.7 | 18.4 | 11.4 | - | - | - | - | - | - | 3.6 | 3.7 | 1 |
| Burera | 0.8 | 1.4 | 4.4 | 26.6 | 15.7 | 2.9 | - | - | - | - | - | - | 7.0 | 2.9 | - |
| Gicumbi | - | - | 6.3 | 22.7 | 23.0 | 6.3 | - | - | - | - | - | - | - | - | - |
| Rwamagana | - | - | 40.0 | 45.8 | 21.3 | 26.7 | - | - | - | - | - | - | 0.7 | 2.8 | - |
| Nyagatare | - | - | 28.6 | 32.9 | 28.6 | 57.1 | - | - | - | - | - | - | - | - | - |
| Gatsibo | - | - | 55.6 | 45.3 | 32.6 | 22.2 | - | - | - | 4.0 | - | - | - | 8.7 | - |
| Kayonza | - | - | 100.0 | 27.1 | 33.8 | - | - | - | - | - | - | - | - | - | - |
| Kirehe | 1.7 | - | 37.5 | 39.7 | 42.0 | 25.0 | - | - | - | 8.6 | 6.0 | - | 9.2 | 10.0 | - |
| Ngoma | - | - | - | 51.3 | 42.1 | - | - | - | - | - | - | - | 4.2 | - | - |
| Bugesera | - | - | 34.8 | 8.5 | 24.6 | 24.6 | - | - | - | - | - | - | 0.9 | 1.5 | - |
| SSF Overall | 0.6 | 1.1 | 19.5 | 34.2 | 28.7 | 18.5 | 0.1 | - | - | 0.7 | 0.3 | - | 1.3 | 2.1 | 1 |
| LSF Overall | - | 0.2 | - | 28.8 | 26.6 | - | - | - | - | 1.0 | 1.9 | - | 7.5 | 7.4 | - |

Source: NISR, SAS 2018

3.2.3 Use of pesticides

In 2018 Season A, for small scale farmers, pesticides were applied in 19.5% of all cultivated plots while for Large Scale Farmers pesticides were applied in 67.7 % of all cultivated plots. Among pesticides types, Rocket was most used for both small- and large-scale famers at 34.6% and 38.5% respectively. In 2018 Season B, for small scale farmers, pesticides were applied in 14.3 % of all cultivated plots while for Large Scale Farmers pesticides were applied in 58.8 % of all cultivated plots. Among pesticides types, cypermethrin was most used for both small-and large-scale famers at 27.9% and 30.4% respectively. In 2018 Season C, for small scale farmers, pesticides were applied in 46.1% of all cultivated plots. Among pesticides types, Dithane was mostly used at 54.6%. (Tables 15.1, 15.2, 15.3).

Table 15. 1: Percentage of plots with pesticides use per district

| District | Used | | | Not used | | |
|--------------------|-------------|--------------|-------------|-------------|--------------|-------------|
| | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 7.0 | 6.25 | 38.5 | 93.0 | 93.75 | 61.5 |
| Gasabo | 11.3 | 15 | 76.2 | 88.7 | 85 | 23.8 |
| Kicukiro | 15.9 | 18.75 | - | 84.1 | 81.25 | - |
| Nyanza | 16.0 | 9.52 | 28.8 | 84.0 | 90.48 | 71.2 |
| Gisagara | 31.6 | 12 | 41.2 | 68.4 | 88 | 58.8 |
| Nyaruguru | 14.4 | 10 | 4.3 | 85.6 | 90 | 95.7 |
| Huye | 11.7 | 17.39 | 14.3 | 88.3 | 82.61 | 85.7 |
| Nyamagabe | 10.7 | 15 | 11.4 | 89.3 | 85 | 88.6 |
| Ruhango | 4.0 | 10 | 31.4 | 96.0 | 90 | 68.6 |
| Muhanga | 4.6 | - | - | 95.4 | 100 | 100.0 |
| Kamonyi | 9.9 | - | 46.4 | 90.1 | 100 | 53.6 |
| Karongi | 15.6 | - | 50.0 | 84.4 | 100 | 50.0 |
| Rutsiro | 26.3 | 40.91 | 86.4 | 73.7 | 59.09 | 13.6 |
| Rubavu | 50.7 | 46.67 | 87.0 | 49.3 | 53.33 | 13.0 |
| Nyabihu | 42.7 | 47.06 | 69.2 | 57.3 | 52.94 | 30.8 |
| Ngororero | 10.1 | 5 | - | 89.9 | 95 | 100.0 |
| Rusizi | 15.9 | 9.09 | 37.8 | 84.2 | 90.91 | 62.2 |
| Nyamasheke | 14.8 | 10 | - | 85.2 | 90 | 100.0 |
| Rulindo | 22.0 | 5 | 50.0 | 78.0 | 95 | 50.0 |
| Gakenke | 29.4 | 30 | 37.9 | 70.6 | 70 | 62.1 |
| Musanze | 45.6 | 31.58 | 82.2 | 54.4 | 68.42 | 17.8 |
| Burera | 36.0 | 35 | 56.0 | 64.0 | 65 | 44.0 |
| Gicumbi | 18.9 | 10 | 42.6 | 81.1 | 90 | 57.4 |
| Rwamagana | 22.8 | 18.18 | 63.2 | 77.2 | 81.82 | 36.8 |
| Nyagatare | 25.2 | 18.18 | 41.2 | 74.8 | 81.82 | 58.8 |
| Gatsibo | 14.6 | 4.88 | 48.7 | 85.4 | 95.12 | 51.4 |
| Kayonza | 9.4 | 6.52 | 80.0 | 90.6 | 93.48 | 20.0 |
| Kirehe | 15.1 | 7.5 | 42.9 | 84.9 | 92.5 | 57.1 |
| Ngoma | 19.1 | - | - | 81.0 | 100 | - |
| Bugesera | 17.3 | 14.81 | 46.0 | 82.7 | 85.19 | 54.1 |
| SSF Overall | 19.5 | 14.29 | 46.1 | 80.5 | 85.71 | 53.9 |
| LSF Overall | 67.7 | 58.8 | - | 32.3 | 41.2 | - |

Source: NISR, SAS 2018

Table 15. 2: Type of pesticides used by District (in percentage)

| District | Dithane | | | Ridomil | | | Dimethoate | | | Cypermethrine | | |
|--------------------|-------------|-------------|-------------|------------|-------------|------------|------------|------------|------------|---------------|-------------|-------------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 39.3 | 33.3 | 40.0 | - | 6.7 | - | 10.7 | - | - | - | 13.3 | - |
| Gasabo | 20.9 | 28.6 | 52.9 | - | - | - | - | - | - | 9.3 | 21.4 | 11.8 |
| Kicukiro | 2.6 | 18.6 | - | - | 4.7 | - | - | - | - | 10.5 | 18.6 | - |
| Nyanza | - | 12.0 | 50.0 | - | - | - | - | - | - | 23.9 | 8.0 | - |
| Gisagara | 2.1 | 4.8 | 26.0 | - | - | - | 0.7 | - | - | 30.8 | 67.7 | 34.0 |
| Nyaruguru | 14.3 | 27.8 | - | - | 5.6 | - | - | - | - | 46.4 | 38.9 | 50.0 |
| Huye | 11.1 | 5.0 | 50.0 | - | - | - | - | - | - | 50.0 | 60.0 | - |
| Nyamagabe | 44.8 | 55.6 | 16.7 | - | - | - | - | - | - | 31.0 | 22.2 | 50.0 |
| Ruhango | 7.7 | 23.1 | 35.7 | - | - | - | 7.7 | - | - | 15.4 | 23.1 | 7.1 |
| Muhanga | 7.1 | - | - | - | - | - | - | - | - | 28.6 | 50.0 | - |
| Kamonyi | 20.5 | 37.5 | 40.0 | 2.6 | 12.5 | - | 10.3 | - | - | 7.7 | - | 13.3 |
| Karongi | 13.3 | 46.2 | 15.4 | - | 15.4 | - | - | - | - | 68.9 | 15.4 | 38.5 |
| Rutsiro | 34.3 | 42.2 | 72.3 | 13.9 | 20.7 | 4.6 | - | 0.9 | - | 26.9 | 15.5 | 10.8 |
| Rubavu | 36.4 | 35.2 | 90.0 | 27.6 | 28.4 | 2.5 | 4.8 | 7.1 | - | 26.9 | 25.3 | 7.5 |
| Nyabihu | 36.8 | 35.5 | 72.7 | 25.6 | 31.2 | 7.3 | 8.0 | 2.6 | 1.8 | 24.8 | 23.9 | 10.9 |
| Ngororero | 30.3 | 57.1 | - | 3.0 | - | - | - | - | - | 15.2 | 23.8 | - |
| Rusizi | 5.3 | 8.6 | 58.8 | - | - | 5.9 | 2.7 | 4.3 | - | 40.0 | 20.0 | - |
| Nyamasheke | 6.7 | 11.6 | - | 1.7 | 3.0 | - | - | - | - | 18.3 | 22.6 | - |
| Rulindo | 10.3 | 56.4 | 10.0 | - | 10.3 | - | 1.3 | - | - | 11.5 | 10.3 | 60.0 |
| Gakenke | 3.0 | 11.6 | 27.3 | - | 2.3 | - | 2.0 | 4.7 | - | 12.9 | 46.5 | 54.6 |
| Musanze | 38.1 | 40.1 | 64.3 | 6.9 | 18.1 | - | 5.5 | 5.5 | 1.2 | 27.7 | 26.4 | 22.6 |
| Burera | 39.1 | 39.1 | 68.4 | 9.2 | 18.9 | 2.6 | 2.2 | 4.7 | 4.0 | 32.6 | 26.6 | 23.7 |
| Gicumbi | 40.9 | 53.7 | 75.0 | 1.5 | 5.6 | - | - | - | - | 6.1 | 14.8 | - |
| Rwamagana | 6.9 | 11.3 | 33.3 | - | 1.4 | - | - | - | - | 24.1 | 33.8 | 25.0 |
| Nyagatare | 3.8 | 8.8 | 42.9 | - | 1.9 | - | 1.0 | 2.5 | - | 31.4 | 28.8 | 14.3 |
| Gatsibo | 2.0 | 17.5 | 26.3 | - | - | - | 2.0 | - | - | 11.2 | 25.0 | 21.1 |
| Kayanza | 2.5 | 9.4 | 50.0 | - | - | - | 3.7 | - | - | 35.8 | 56.3 | - |
| Kirehe | 3.4 | 3.3 | 33.3 | 0.9 | - | - | 5.1 | 3.3 | - | 22.9 | 50.0 | 66.7 |
| Ngoma | 2.1 | - | - | - | - | - | - | - | - | 12.8 | 100.0 | - |
| Bugesera | 0.9 | 2.4 | 18.9 | - | - | 2.7 | - | - | 2.7 | 35.5 | 33.3 | 24.3 |
| SSF Overall | 19.0 | 27.9 | 54.6 | 7.0 | 13.4 | 2.0 | 2.8 | 2.8 | 1.0 | 26.1 | 27.9 | 18.9 |
| LSF Overall | 10.1 | 9.9 | - | 5.0 | 3.1 | - | 0.8 | 0.5 | - | 20.9 | 30.4 | - |

Source: NISR, SAS 2018

Table 15. 3: Type of pesticides used by District (in percentage) cont'd

| District | Dursiban | | | Tilt | | | Rocket | | | Other Pesticides | | |
|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|------------------|----------|----------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | - | - | 20.0 | - | - | - | 39.3 | 40.0 | 40.0 | 10.7 | 6.7 | - |
| Gasabo | - | - | - | - | - | - | 58.1 | 46.4 | 23.5 | 11.6 | 3.6 | 11.8 |
| Kicukiro | - | - | - | - | - | - | 60.5 | 41.9 | - | 26.3 | 16.3 | - |
| Nyanza | - | - | - | - | - | - | 63.0 | 64.0 | 5.0 | 13.0 | 16.0 | 5.0 |
| Gisagara | - | 1.6 | - | - | - | - | 49.3 | 21.0 | - | 17.1 | 4.8 | - |
| Nyaruguru | - | - | 50.0 | - | - | - | 39.3 | 22.2 | - | - | 5.6 | - |
| Huye | - | - | - | - | - | - | 30.6 | 17.5 | - | 8.3 | 17.5 | - |
| Nyamagabe | - | - | - | - | - | - | 24.1 | 19.4 | - | - | 2.8 | - |
| Ruhango | - | - | - | - | - | - | 69.2 | 53.9 | - | - | - | - |
| Muhanga | - | - | - | - | - | - | 64.3 | 50.0 | - | - | - | - |
| Kamonyi | - | - | - | - | - | - | 56.4 | 37.5 | - | 2.6 | 12.5 | - |
| Karongi | - | - | - | - | - | - | 15.6 | 23.1 | 30.8 | 2.2 | - | 30.8 |
| Rutsiro | - | - | - | - | - | - | 20.4 | 12.1 | 9.2 | 4.6 | 8.6 | 9.2 |
| Rubavu | - | - | - | 0.7 | - | - | 1.7 | 2.2 | - | 2.0 | 1.9 | - |
| Nyabihu | - | - | - | - | - | - | 4.8 | 6.8 | 7.3 | - | - | 7.3 |
| Ngororero | - | - | - | - | - | - | 48.5 | 19.1 | - | 3.0 | - | - |
| Rusizi | - | 7.1 | - | - | - | - | 36.0 | 47.1 | 5.9 | 16.0 | 12.9 | 5.9 |

| | | | | | | | | | | | | |
|--------------------|------------|------------|------------|------------|---|---|-------------|-------------|------------|-------------|-------------|------------|
| Nyamasheke | 3.3 | - | - | - | - | - | 55.0 | 31.9 | - | 15.0 | 29.0 | - |
| Rulindo | - | - | - | - | - | - | 73.1 | 23.1 | - | 3.9 | - | - |
| Gakenke | - | - | - | - | - | - | 82.2 | 34.9 | - | - | - | - |
| Musanze | - | - | - | - | - | - | 18.3 | 6.6 | 3.6 | 3.5 | 3.3 | 3.6 |
| Burera | - | - | - | - | - | - | 15.8 | 7.1 | 1.3 | 1.1 | 3.6 | 1.3 |
| Gicumbi | - | - | - | - | - | - | 51.5 | 24.1 | 4.2 | - | 1.9 | 4.2 |
| Rwamagana | 1.2 | - | - | - | - | - | 46.0 | 19.7 | 16.7 | 21.8 | 33.8 | 16.7 |
| Nyagatare | - | - | - | - | - | - | 43.0 | 36.9 | 14.3 | 20.8 | 21.3 | 14.3 |
| Gatsibo | - | - | - | - | - | - | 77.6 | 42.5 | 5.3 | 7.1 | 15.0 | 5.3 |
| Kayonza | - | - | - | - | - | - | 25.9 | 12.5 | 25.0 | 32.1 | 21.9 | 25.0 |
| Kirehe | - | - | - | - | - | - | 40.7 | 20.0 | - | 27.1 | 23.3 | - |
| Ngoma | - | - | - | - | - | - | 74.5 | - | - | 10.6 | - | - |
| Bugesera | - | - | - | - | - | - | 26.4 | 21.4 | 8.1 | 37.3 | 42.9 | 8.1 |
| SSF Overall | 0.1 | 0.3 | 0.3 | 0.1 | - | - | 34.6 | 18.5 | 5.1 | 10.4 | 9.2 | 5.1 |
| LSF Overall | - | 0.2 | - | 0.2 | - | - | 38.5 | 27.7 | - | 24.5 | 28.2 | - |

Source: NISR, SAS 2018

3.3 Agricultural practices

3.3.1 Irrigation practices

In 2018 season A, for small scale farmers, irrigation was practiced in 5% of all cultivated plots and in 18.5% of all cultivated plots for Large Scale Farmers. In 2018 Season B, for small scale farmers, irrigation was practiced in 4.8% of all cultivated plots and in 17.7 % of all cultivated plots for Large Scale Farmers. In 2018 Season C, for small scale farmers, irrigation was practiced in 28.0% of all cultivated plots (See table 16.1).

Table 16. 1: Use of Irrigation per district (Percentage)

| District | Used | | | Not Used | | |
|------------|----------|----------|----------|----------|----------|----------|
| | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 3.1 | 0.9 | 37.5 | 96.9 | 99.1 | 62.5 |
| Gasabo | 3.8 | 2.1 | 87.0 | 96.2 | 97.9 | 13.0 |
| Kicukiro | 4.2 | 10.1 | - | 95.8 | 89.9 | - |
| Nyanza | 6.0 | 6.1 | 43.6 | 94.0 | 93.9 | 56.4 |
| Gisagara | 18.9 | 19.3 | 29.6 | 81.1 | 80.7 | 70.4 |
| Nyaruguru | 2.1 | 1.7 | 10.9 | 97.9 | 98.3 | 89.1 |
| Huye | 17.3 | 16.4 | 32.3 | 82.7 | 83.7 | 67.7 |
| Nyamagabe | 2.1 | 1.2 | 32.7 | 98.0 | 98.8 | 67.3 |
| Ruhango | 2.3 | 4.9 | 31.8 | 97.7 | 95.1 | 68.2 |
| Muhanga | 0.7 | 0.4 | 12.4 | 99.3 | 99.6 | 87.7 |
| Kamonyi | 1.9 | 2.7 | 82.9 | 98.1 | 97.3 | 17.1 |
| Karongi | 0.8 | 0.4 | 52.0 | 99.2 | 99.6 | 48.0 |
| Rutsiro | 0.3 | 0.4 | 11.0 | 99.7 | 99.6 | 89.0 |
| Rubavu | 0.4 | 0.0 | - | 99.6 | 100.0 | 100.0 |
| Nyabihu | - | 0.0 | 1.3 | 100.0 | 100.0 | 98.8 |
| Ngororero | 0.7 | 0.0 | 3.1 | 99.4 | 100.0 | 96.9 |
| Rusizi | 13.7 | 18.8 | 34.7 | 86.3 | 81.2 | 65.3 |
| Nyamasheke | 10.7 | 14.6 | 60.0 | 89.3 | 85.4 | 40.0 |
| Rulindo | 1.6 | 5.8 | 74.1 | 98.4 | 94.2 | 25.9 |
| Gakenke | 1.2 | 0.3 | 44.4 | 98.8 | 99.7 | 55.6 |
| Musanze | 0.7 | 0.0 | 21.6 | 99.3 | 100.0 | 78.4 |
| Burera | - | 0.3 | 0.7 | 100.0 | 99.7 | 99.3 |
| Gicumbi | 1.6 | 0.7 | 68.4 | 98.5 | 99.3 | 31.6 |
| Rwamagana | 7.0 | 9.3 | 80.0 | 93.0 | 90.7 | 20.0 |
| Nyagatare | 6.2 | 5.5 | 47.1 | 93.8 | 94.5 | 52.9 |
| Gatsibo | 1.3 | 0.2 | 57.8 | 98.7 | 99.8 | 42.2 |
| Kayonza | 6.3 | 1.7 | 100.0 | 93.7 | 98.4 | - |
| Kirehe | 6.9 | 5.1 | 90.0 | 93.1 | 94.9 | 10.0 |
| Ngoma | - | 1.4 | - | 100.0 | 98.7 | - |
| Bugesera | 15.3 | 7.6 | 17.1 | 84.7 | 92.4 | 82.9 |

| | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| SSF Overall | 5.0 | 4.8 | 28.0 | 95.0 | 95.2 | 72.0 |
| LSF Overall | 18.5 | 27.7 | - | 81.5 | 82.3 | - |

| District | Surface irrigation | | | Flood irrigation | | | Drip irrigation | | | Sprinkler irrigation | | | Traditional irrigation | | |
|-------------|--------------------|----------|----------|------------------|----------|----------|-----------------|----------|----------|----------------------|----------|----------|------------------------|----------|----------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | - | - | 33.3 | - | 50.0 | - | - | - | - | - | - | - | 100.0 | 50.0 | 66.7 |
| Gasabo | 73.3 | - | 20.0 | - | - | - | - | - | 10.0 | - | - | - | 26.7 | 100.0 | 70.0 |
| Kicukiro | 40.0 | 14.3 | - | - | 52.4 | - | - | - | - | - | - | - | 60.0 | 33.3 | - |
| Nyanza | 5.6 | 5.6 | 5.9 | 33.3 | 72.2 | - | - | - | - | - | - | - | 61.1 | 22.2 | 94.1 |
| Gisagara | 4.3 | - | 7.5 | 78.6 | 92.8 | - | - | - | - | - | - | - | 17.1 | 7.3 | 92.5 |
| Nyaruguru | 25.0 | - | 33.3 | - | - | - | - | - | - | - | - | - | 75.0 | 100.0 | 66.7 |
| Huye | 46.0 | 51.0 | 10.0 | 36.0 | 41.2 | - | - | - | - | 2.0 | - | - | 16.0 | 7.8 | 90.0 |
| Nyamagabe | 33.3 | 33.3 | - | - | - | - | - | - | - | - | - | - | 66.7 | 66.7 | 100.0 |
| Ruhango | 57.1 | 12.5 | - | 28.6 | 81.3 | - | - | - | - | - | - | - | 14.3 | 6.3 | 100.0 |
| Muhanga | 33.3 | 100.0 | - | - | - | - | - | - | - | - | - | - | 66.7 | - | 100.0 |
| Kamonyi | - | 12.5 | 6.9 | - | - | - | - | - | - | - | - | - | 100.0 | 87.5 | 93.1 |
| Karongi | 50.0 | - | 15.4 | - | - | - | - | - | - | - | - | - | 50.0 | 100.0 | 84.6 |
| Rutsiro | - | - | - | - | - | - | - | - | - | - | - | - | 100.0 | 100.0 | 100.0 |
| Rubavu | - | - | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - |
| Ngororero | - | - | - | - | - | - | - | - | - | - | - | - | 100.0 | - | 100.0 |
| Rusizi | 13.7 | 1.6 | 23.5 | 82.4 | 91.9 | - | - | - | - | - | - | - | 3.9 | 6.5 | 76.5 |
| Nyamasheke | 2.9 | 4.6 | - | 94.1 | 84.1 | - | - | - | - | - | - | - | 2.9 | 11.4 | 100.0 |
| Rulindo | - | - | 35.0 | - | - | - | - | - | - | - | - | - | 100.0 | 100.0 | 65.0 |
| Gakenke | 25.0 | - | 25.0 | - | - | - | - | - | - | - | - | - | 75.0 | 100.0 | 75.0 |
| Musanze | 66.7 | - | - | - | - | - | - | - | - | - | - | - | 33.3 | - | 100.0 |
| Gicumbi | - | - | 20.5 | - | - | - | - | - | - | - | - | - | 100.0 | 100.0 | 79.5 |
| Rwamagana | 22.7 | 57.1 | 50.0 | 31.8 | 35.7 | - | - | - | - | - | - | - | 45.5 | 7.1 | 50.0 |
| Nyagatare | 13.2 | 25.0 | - | 69.8 | 61.4 | - | - | - | - | 9.4 | 4.6 | - | 7.6 | 9.1 | 100.0 |
| Gatsibo | 8.3 | - | 7.7 | 66.7 | 100.0 | - | - | - | - | - | - | - | 25.0 | - | 92.3 |
| Kayonza | 11.1 | 22.2 | - | 72.2 | 66.7 | - | - | - | - | 5.6 | 11.1 | - | 11.1 | - | 100.0 |
| Kirehe | 10.9 | 6.3 | - | 78.3 | 87.5 | - | - | - | - | - | - | - | 10.9 | 6.3 | 100.0 |
| Bugesera | 11.3 | 4.2 | 42.9 | 88.7 | 95.8 | - | - | - | - | - | - | - | - | - | 57.1 |
| SSF Overall | 16.02 | 30.35 | 14.2 | 62 | 35.82 | - | - | - | 0.5 | 1.5 | 15.4 | - | 20.46 | 12.44 | 85.4 |
| LSF Overall | 19.4 | 30.4 | - | 33.2 | 35.8 | - | 7.11 | 6.0 | - | 19.4 | 15.4 | - | 20.85 | 12.4 | - |

Source: NISR, SAS 2018

Table 16. 2: Types of irrigation used by district (in percentage)

Source: NISR, SAS 2018

Table 16. 3: Types of irrigation used by crop type (%) for small scale farmers

| Crops | Surface irrigation | | | Flood irrigation | | | Drip irrigation | | | Sprinkler irrigation | | | Traditional irrigation | | |
|-----------------|--------------------|----------|----------|------------------|----------|----------|-----------------|----------|----------|----------------------|----------|----------|------------------------|----------|----------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Fruits | 66.7 | 50.0 | - | - | - | - | - | - | - | - | - | - | 33.33 | - | - |
| Vegetables | 31.3 | 25.0 | 15.8 | - | 1.3 | - | - | - | 0.7 | 3.13 | 4.0 | - | 65.63 | 69.7 | 83 |
| Other crops | 100 | - | - | - | - | - | - | - | - | - | - | - | 0 | - | - |
| Maize | 28.9 | 50.0 | - | - | - | - | - | - | - | 8.3 | - | - | 62.22 | 50.0 | - |
| Paddy rice | 11.1 | 13.3 | - | 87 | 86.4 | - | - | - | - | 0.3 | - | - | 1.63 | 0.3 | - |
| Bush bean | - | 100.0 | 20.0 | - | - | - | - | - | - | - | - | - | 100 | - | 80 |
| Pea | - | - | - | - | - | - | - | - | - | - | - | - | 100 | - | 100 |
| Irish potato | - | - | 11.5 | - | - | - | - | - | - | - | - | - | 100 | 100.0 | 89 |
| Sweet potato | 20.0 | - | 8.0 | - | - | - | - | - | - | - | - | - | 80 | 100.0 | 92 |
| Groundnut | 16.7 | - | - | - | - | - | - | - | - | - | - | - | 83.33 | 50.0 | - |
| Taro | - | 50.0 | - | - | - | - | - | - | - | - | - | - | 0 | 50.0 | - |
| Cooking banana | - | - | - | - | - | - | - | - | - | - | - | - | 100 | - | - |
| Dessert banana | - | - | - | - | - | - | - | - | - | 50.0 | - | - | 50 | - | - |
| Banana for beer | - | - | - | - | - | - | - | - | - | - | - | - | 100 | - | - |
| SSF Overall | 16 | 15.35 | 14.2 | 62 | 66.5 | - | - | - | 0.5 | 1.5 | 0.6 | - | 20.46 | 17.48 | 85 |

Source: NISR, SAS 2018

Table 16.4: Types of irrigation used by crop type (in percentage) for Large Scale Farmers

| Crop | Surface irrigation | | Flood irrigation | | Drip irrigation | | Sprinkler irrigation | | Tradition irrigation | |
|--------------------|--------------------|-------------|------------------|-------------|-----------------|------------|----------------------|-------------|----------------------|-------------|
| | Season A | Season B | Season A | Season B | Season A | Season B | Season A | Season B | Season A | Season B |
| Fruits | 35.7 | 22.2 | - | - | 35.7 | 38.9 | 7.1 | 22.2 | 21.4 | 16.7 |
| Vegetables | 33.3 | 29.0 | - | - | 5.6 | 10.5 | 29.2 | 21.1 | 31.9 | 39.5 |
| Other crops | 100.0 | 88.9 | - | - | - | 11.1 | - | - | - | - |
| Other cereals | - | - | - | - | - | - | 100.0 | - | - | - |
| Fodder crops | 100.0 | - | - | - | - | - | - | - | - | - |
| Maize | 18.5 | 50.0 | - | - | - | - | 37.0 | 28.6 | 44.4 | 21.4 |
| Paddy rice | - | 19.1 | 97.2 | 80.9 | - | - | - | - | 2.8 | - |
| Wheat | - | - | - | - | - | - | 100.0 | 100.0 | - | - |
| Bush bean | 33.3 | 100.0 | - | - | - | - | 66.7 | - | - | - |
| Pea | - | 25.0 | - | - | - | - | 100.0 | 75.0 | - | - |
| Irish potato | - | - | - | - | - | - | 100.0 | 50.0 | - | 50.0 |
| Sweet potato | - | - | - | - | - | - | - | 75.0 | 100.0 | 25.0 |
| Soybean | - | - | - | - | - | - | 100.0 | 100.0 | - | - |
| Cooking banana | 40.0 | 60.0 | - | - | - | - | - | - | 60.0 | 40.0 |
| Dessert banana | 100.0 | 100.0 | - | - | - | - | - | - | - | - |
| Banana for beer | - | 100.0 | - | - | 100.0 | - | - | - | - | - |
| LSF Overall | 19.4 | 30.4 | 33.2 | 35.8 | 7.1 | 6.0 | 19.4 | 15.4 | 20.9 | 12.4 |

Source: NISR, SAS 2018

Table 16.5 : Source of water used for irrigation per district (in percentage)

| District | Rainwater harvesting | | | Water treatment plant | | | Underground water | | | Lake / stream water | | | Water catchment (dam) | | | Other source | | |
|--------------------|----------------------|------------|------------|-----------------------|------------|------------|-------------------|-------------|-------------|---------------------|-------------|-------------|-----------------------|-------------|------------|--------------|------------|------------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | - | - | - | 22.2 | - | - | - | 100.0 | - | 77.8 | - | 100.0 | - | - | - | - | - | - |
| Gasabo | - | - | - | - | - | - | - | 50.0 | 35.0 | 100.0 | 50.0 | 65.0 | - | - | - | - | - | - |
| Kicukiro | - | - | - | - | - | - | - | 4.8 | - | 100.0 | 38.1 | - | - | 52.4 | - | - | 4.8 | - |
| Nyanza | - | - | - | - | - | - | 11.1 | 22.2 | 82.4 | 55.6 | 55.6 | 17.7 | 33.3 | 22.2 | - | - | - | - |
| Gisagara | - | - | 17.5 | - | - | - | 28.6 | 44.9 | 55.0 | 71.4 | 55.1 | 17.5 | - | - | 10.0 | - | - | - |
| Nyaruguru | - | - | - | - | - | - | 50.0 | 100.0 | - | 25.0 | - | 100.0 | - | - | - | 25.0 | - | - |
| Huye | - | - | - | 2.0 | - | - | 74.0 | 54.9 | 10.0 | 16.0 | 45.1 | 90.0 | 8.0 | - | - | - | - | - |
| Nyamagabe | - | - | - | - | - | - | 33.3 | 100.0 | 94.4 | 66.7 | - | 5.6 | - | - | - | - | - | - |
| Ruhango | - | - | - | 14.3 | - | - | 71.4 | 87.5 | 78.6 | - | 12.5 | 21.4 | 14.3 | - | - | - | - | - |
| Muhanga | - | - | - | - | - | - | 100.0 | 100.0 | 40.0 | - | - | 60.0 | - | - | - | - | - | - |
| Kamonyi | - | - | - | - | - | 3.5 | 87.5 | 62.5 | - | 12.5 | 25.0 | 93.1 | - | - | 3.5 | - | 12.5 | - |
| Karongi | - | - | - | 50.0 | - | - | - | - | - | 50.0 | 100.0 | 100.0 | - | - | - | - | - | - |
| Rutsiro | - | - | - | - | - | - | 100.0 | - | 9.1 | - | 100.0 | 90.9 | - | - | - | - | - | - |
| Rubavu | 100.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ngororero | - | - | - | - | - | - | - | - | 100.0 | 100.0 | - | - | - | - | - | - | - | - |
| Rusizi | - | - | - | 21.6 | 3.2 | - | 3.9 | - | 17.7 | 62.8 | 88.7 | 82.4 | 11.8 | 8.1 | - | - | - | - |
| Nyamashoke | - | - | - | - | - | - | - | - | - | 100.0 | 100.0 | 100.0 | - | - | - | - | - | - |
| Rulindo | - | - | - | - | - | - | 16.7 | - | 75.0 | 83.3 | 100.0 | 25.0 | - | - | - | - | - | - |
| Gakenke | - | - | - | - | - | - | - | 100.0 | 93.8 | 100.0 | - | 6.3 | - | - | - | - | - | - |
| Musanze | - | - | - | 33.3 | - | - | - | - | - | 66.7 | - | 100.0 | - | - | - | - | - | - |
| Gicumbi | - | - | - | - | - | - | - | - | 59.0 | 100.0 | 100.0 | 41.0 | - | - | - | - | - | - |
| Rwamagana | - | - | - | - | 7.1 | - | 45.5 | 3.6 | 56.3 | 4.6 | 64.3 | 12.5 | 50.0 | 25.0 | 31.3 | - | - | - |
| Nyagatare | - | - | - | 17.0 | 9.1 | - | 1.9 | 22.7 | - | 69.8 | 38.6 | 100.0 | 11.3 | 29.6 | - | - | - | - |
| Gatsibo | - | - | - | - | - | 3.9 | 41.7 | - | 50.0 | 50.0 | - | 42.3 | 8.3 | 100.0 | 3.9 | - | - | - |
| Kayanza | 2.8 | - | - | - | - | - | 8.3 | 33.3 | - | 55.6 | - | 100.0 | 33.3 | 66.7 | - | - | - | - |
| Kirehe | - | - | - | - | - | - | 82.6 | 50.0 | 88.9 | 15.2 | 50.0 | - | - | - | 11.1 | 2.2 | - | - |
| Bugesera | - | - | - | - | - | 14.3 | 21.0 | - | - | 79.0 | 95.8 | 85.7 | - | 4.2 | - | - | - | - |
| SSF Overall | 0.4 | 0 | 1.7 | 5.02 | 1.7 | 1.0 | 28.1 | 27.3 | 43.7 | 57.14 | 60.3 | 50.5 | 9.07 | 10.2 | 2.9 | 0.4 | 0.4 | 0.2 |
| LSF Overall | 6.16 | 2.5 | 1.7 | 1.9 | 1.5 | - | 14.22 | 17.9 | - | 61.14 | 57.7 | - | 15.6 | 13.4 | - | 0.95 | 7.0 | - |

Source: NISR, SAS 2018

3.3.2 Erosion control measures

Table 17. 1: Percentage of plot with Anti-erosion activities use per District

| District | Used | | | Not Used | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 72.5 | 70.7 | 100.0 | 27.5 | 29.3 | - |
| Gasabo | 73.0 | 67.7 | 95.2 | 27.1 | 32.3 | 4.8 |
| Kicukiro | 25.7 | 46.2 | - | 74.3 | 53.9 | - |
| Nyanza | 67.4 | 77.4 | 97.0 | 32.6 | 22.6 | 3.0 |
| Gisagara | 69.2 | 72.1 | 86.0 | 30.8 | 27.9 | 14.0 |
| Nyaruguru | 79.4 | 66.1 | 46.8 | 20.6 | 33.9 | 53.2 |
| Huye | 73.1 | 68.9 | 60.7 | 26.9 | 31.1 | 39.3 |
| Nyamagabe | 89.3 | 91.2 | 84.1 | 10.7 | 8.8 | 15.9 |
| Ruhango | 77.5 | 82.6 | 94.3 | 22.5 | 17.4 | 5.7 |
| Muhanga | 76.2 | 68.5 | 100.0 | 23.8 | 31.5 | - |
| Kamonyi | 92.6 | 93.9 | 82.1 | 7.4 | 6.1 | 17.9 |
| Karongi | 88.3 | 83.5 | 90.9 | 11.7 | 16.5 | 9.1 |
| Rutsiro | 86.9 | 80.9 | 92.4 | 13.1 | 19.1 | 7.6 |
| Rubavu | 93.8 | 90.7 | 95.7 | 6.2 | 9.3 | 4.4 |
| Nyabihu | 76.8 | 83.9 | 88.5 | 23.2 | 16.1 | 11.5 |
| Ngororero | 64.4 | 85.0 | 95.6 | 35.6 | 15.0 | 4.4 |
| Rusizi | 42.6 | 47.0 | 81.1 | 57.4 | 53.0 | 18.9 |
| Nyamasheke | 70.4 | 67.6 | 100.0 | 29.7 | 32.5 | - |
| Rulindo | 85.2 | 85.7 | 90.0 | 14.8 | 14.3 | 10.0 |
| Gakenke | 94.7 | 97.3 | 100.0 | 5.3 | 2.7 | - |
| Musanze | 80.3 | 82.6 | 94.1 | 19.7 | 17.4 | 5.9 |
| Burera | 92.4 | 79.8 | 81.3 | 7.6 | 20.3 | 18.7 |
| Gicumbi | 88.5 | 93.1 | 96.3 | 11.5 | 6.9 | 3.7 |
| Rwamagana | 66.5 | 59.6 | 79.0 | 33.5 | 40.4 | 21.1 |
| Nyagatare | 51.4 | 50.5 | 70.6 | 48.6 | 49.5 | 29.4 |
| Gatsibo | 63.0 | 61.1 | 89.2 | 37.1 | 38.9 | 10.8 |
| Kayanza | 37.6 | 31.6 | 100.0 | 62.4 | 68.4 | - |
| Kirehe | 43.5 | 41.4 | 100.0 | 56.6 | 58.6 | - |
| Ngoma | 56.3 | 63.5 | - | 43.7 | 36.5 | - |
| Bugesera | 65.2 | 42.1 | 27.0 | 34.8 | 57.9 | 73.0 |
| SSF Overall | 68.3 | 67.4 | 84.2 | 31.7 | 32.6 | 15.8 |
| LSF Overall | 63.5 | 61.2 | - | 36.5 | 38.8 | - |

Source: NISR, SAS 2018

In 2018 season A, for small scale farmers 68.3 % of all cultivated plots anti-erosion activities have been done, while for Large Scale Farmers, 63.5 % of all plots are protected against anti-erosion. In 2018 season B 2018, for small scale farmers 67.4% of all cultivated plots anti-erosion activities have been done, while for Large Scale Farmers, 61.2 % of all plots are protected against anti-erosion. In 2018 Season C, for small scale farmers, anti-erosion was practiced in 84.2% of all cultivated plots. The methods of erosion control vary widely but in Season A 2018 cover plants/grasses were most used at 51.6% for small scale farmers and at 32.5% for large scale farmers, followed by ditches which were used at 12.2% for small scale farmers and at 29.4% for large scale farmers. In Season B 2018. In Season B 2018 cover plants/grasses were most used at 52.0% for small scale farmers and at 28.4 % for large scale farmers, followed by ditches which were used at 11.4% for small scale farmers and at 22.1% for large scale farmers. In Season C 2018 bed/bridges were most used at 49.7% f, followed by water drainage which were used at 32.7 % for small scale farmers (see table 17.2).

The methods of erosion control vary widely but cover plants/grasses and ditches are the major erosion control methods practiced by both SSF and LSF at 51.6% versus 32.5% and 12.2% versus 29.4% of the cropland reported utilizing erosion control method. Looking across districts the methods used by SSF for erosion control vary widely based on which method is most applicable to local conditions.

Cover plants/grasses are widely used across all districts. The same can be said for the ditches method and water drainage as well (See tables 17.2 and 17.3).

Table 17. 2: Types of anti-erosion activities by district (Percentage)

| District | Ditches | | | Trees/Windbreak/ shelterbelt | | | Bench terraces | | | Progressive terraces | | | Cover plants/ grasses | | |
|--------------------|-------------|-------------|------------|---------------------------------|------------|------------|----------------|------------|------------|-------------------------|------------|------------|--------------------------|-------------|------------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 22.5 | 19.6 | - | 1.7 | 2.2 | 7.7 | - | - | - | 11.9 | 19.6 | - | 56.8 | 50.4 | - |
| Gasabo | 13.1 | 5.1 | - | 1.9 | 3.8 | - | 2.3 | 3.4 | - | 2.7 | 8.5 | - | 67.6 | 66.4 | 5.0 |
| Kicukiro | 7.1 | 2.5 | - | 2.9 | 0.8 | - | - | 1.7 | - | 28.6 | 16.7 | - | 52.9 | 60.8 | - |
| Nyanza | 16.3 | 8.0 | - | 0.9 | 1.5 | - | 0.5 | 1.5 | - | 1.8 | 1.9 | - | 57.0 | 58.6 | 7.6 |
| Gisagara | 10.3 | 12.1 | 2.0 | 1.3 | 4.1 | 1.0 | 6.6 | 4.1 | - | 4.0 | 4.5 | - | 28.8 | 32.8 | 2.0 |
| Nyaruguru | 6.5 | 24.1 | - | 0.4 | - | - | 3.0 | - | - | 25.2 | 12.2 | - | 50.9 | 45.2 | 22.7 |
| Huye | 19.1 | 29.3 | - | 8.8 | 5.4 | - | - | - | - | 0.4 | 0.3 | - | 43.4 | 36.7 | - |
| Nyamagabe | 9.2 | 6.2 | 2.4 | 2.1 | 0.7 | - | 7.1 | 5.6 | - | 2.8 | 7.9 | - | 60.3 | 61.0 | 2.4 |
| Ruhango | 6.1 | 10.7 | - | 0.4 | - | - | - | - | - | 3.4 | 0.3 | - | 64.0 | 64.5 | 8.3 |
| Muhanga | 17.2 | 13.6 | 2.9 | - | - | - | 7.9 | 8.7 | - | - | 1.7 | - | 64.4 | 60.7 | 1.4 |
| Kamonyi | 29.7 | 18.2 | 4.2 | 0.2 | 1.6 | - | - | - | - | 5.8 | 16.1 | - | 56.1 | 52.3 | 8.3 |
| Karongi | 7.8 | 3.9 | - | 2.3 | 3.6 | - | 2.9 | 2.1 | - | 27.4 | 34.4 | 15.0 | 45.8 | 45.2 | - |
| Rutsiro | 3.5 | 3.1 | - | 7.5 | 7.2 | 5.6 | 11.9 | 9.9 | - | 7.5 | 14.0 | 2.8 | 46.3 | 51.4 | 5.6 |
| Rubavu | 6.0 | 6.9 | - | 12.3 | 13.3 | - | 1.9 | 0.8 | - | 6.0 | 3.6 | - | 20.5 | 16.9 | 2.3 |
| Nyabihu | 0.3 | 2.7 | 7.3 | 1.4 | 1.2 | 1.5 | 7.2 | 8.5 | 24.6 | 14.3 | 12.4 | 2.9 | 45.7 | 42.9 | 24.6 |
| Ngororero | 19.1 | 12.2 | - | 1.3 | 1.2 | - | 10.4 | 7.6 | - | 0.9 | 0.4 | - | 55.8 | 61.1 | 4.7 |
| Rusizi | 12.1 | 12.7 | - | 1.7 | 1.7 | 3.2 | - | - | - | 1.2 | 5.0 | - | 48.3 | 40.9 | 6.5 |
| Nyamasheke | 4.5 | 4.9 | - | 2.8 | 2.3 | - | 5.9 | 6.7 | - | 15.3 | 15.0 | - | 50.2 | 44.6 | - |
| Rulindo | 15.0 | 9.9 | - | 1.1 | 0.7 | - | 2.6 | 2.3 | - | 2.8 | 3.3 | - | 60.6 | 67.0 | 38.1 |
| Gakenke | 13.0 | 8.2 | - | 1.0 | 0.5 | - | 4.6 | 4.1 | - | 1.5 | 1.9 | - | 73.9 | 73.8 | 36.4 |
| Musanze | 1.9 | 0.4 | - | 2.2 | 0.8 | - | 6.4 | 9.5 | - | 1.9 | 0.8 | 1.1 | 27.8 | 22.4 | 10.5 |
| Burera | 0.9 | 1.6 | 5.5 | 9.7 | 7.5 | - | 7.3 | 6.4 | - | 16.2 | 20.8 | 7.3 | 36.1 | 40.0 | 16.4 |
| Gicumbi | 8.9 | 3.0 | 1.9 | 0.5 | 0.7 | - | 8.9 | 7.1 | - | 13.2 | 19.9 | - | 60.7 | 63.1 | 9.4 |
| Rwamagana | 7.9 | 25.0 | - | 0.4 | 2.0 | - | 8.7 | 4.4 | - | 2.5 | 0.4 | - | 66.1 | 44.8 | 6.7 |
| Nyagatare | 23.7 | 20.1 | 16.7 | 1.7 | 2.7 | - | 0.4 | 0.2 | - | 6.8 | 3.7 | - | 51.4 | 60.8 | - |
| Gatsibo | 9.1 | 12.3 | - | 1.5 | 1.7 | - | - | - | - | 5.3 | 4.0 | - | 60.3 | 61.0 | - |
| Kayonza | 18.7 | 14.5 | - | 2.6 | 2.7 | - | 15.0 | 18.1 | - | 4.1 | 1.4 | - | 40.8 | 43.4 | - |
| Kirehe | 26.0 | 18.3 | 14.3 | 1.5 | 0.3 | - | - | - | - | - | - | - | 46.7 | 54.9 | - |
| Ngoma | 7.6 | 23.1 | - | 1.3 | 1.8 | - | - | - | - | 11.5 | 1.8 | - | 74.5 | 64.5 | - |
| Bugesera | 11.9 | 9.4 | - | 1.5 | 0.7 | - | - | - | - | 16.5 | 24.8 | - | 45.0 | 44.3 | - |
| SSF Overall | 12.2 | 11.4 | 1.9 | 2.6 | 2.5 | 0.7 | 4.2 | 3.7 | 1.6 | 7.7 | 8.6 | 1.5 | 51.6 | 52.0 | 9.1 |
| LSF Overall | 29.4 | 22.1 | - | 5.7 | 8.0 | - | 3.1 | 5.0 | - | 0.4 | 2.0 | - | 32.5 | 28.4 | - |

Source: NISR, SAS 2018

Table 17. 3: Types of anti-erosion activities by district (Percentages) cont'd

| District | Water drainage | | | Mulching | | | Beds/ridges | | | Others | | |
|--------------------|----------------|-------------|-------------|------------|------------|------------|-------------|------------|-------------|------------|------------|------------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 2.5 | - | 53.9 | 2.5 | 7.8 | 15.4 | 2.1 | 0.4 | 23.1 | - | - | - |
| Gasabo | 5.8 | 5.5 | 70.0 | 0.4 | 2.1 | 5.0 | 6.2 | 5.1 | 20.0 | - | - | - |
| Kicukiro | 4.3 | 10.8 | - | 4.3 | 5.0 | - | - | 1.7 | - | - | - | - |
| Nyanza | 8.6 | 20.9 | 42.4 | 1.4 | 2.7 | 1.5 | 13.6 | 4.9 | 48.5 | - | - | - |
| Gisagara | 35.4 | 26.9 | 46.0 | 0.3 | 1.0 | 1.0 | 13.3 | 14.5 | 48.0 | - | - | - |
| Nyaruguru | 8.3 | 16.0 | 50.0 | 1.3 | 0.8 | - | 4.4 | 1.7 | 27.3 | - | - | - |
| Huye | 17.7 | 19.4 | 35.3 | 3.7 | 1.0 | - | 7.0 | 7.8 | 58.8 | - | - | 6 |
| Nyamagabe | 7.1 | 9.8 | 61.0 | 1.8 | 1.3 | 2.4 | 9.6 | 7.5 | 31.7 | - | - | - |
| Ruhango | 8.7 | 11.3 | 44.4 | 0.4 | 0.6 | 5.6 | 17.1 | 12.6 | 41.7 | - | - | - |
| Muhanga | 0.7 | 3.3 | 21.4 | 2.0 | 2.5 | - | 7.9 | 9.5 | 74.3 | - | - | - |
| Kamonyi | 3.6 | 1.8 | 58.3 | 1.8 | 3.2 | 4.2 | 2.9 | 6.7 | 25.0 | - | - | - |
| Karongi | - | 7.5 | 85.0 | 1.7 | 0.9 | - | 3.2 | 2.1 | - | - | 0.3 | - |
| Rutsiro | 12.2 | 11.0 | 58.3 | 3.5 | 2.7 | 1.4 | 7.7 | 0.7 | 26.4 | - | - | - |
| Rubavu | 0.8 | 1.6 | - | 0.4 | - | - | 52.2 | 56.9 | 97.7 | - | - | - |
| Nyabihu | - | 1.5 | 1.5 | 0.7 | 1.2 | - | 30.4 | 29.7 | 37.7 | - | - | - |
| Ngororero | 2.6 | 1.9 | 9.3 | 2.6 | 1.9 | - | 7.4 | 13.7 | 86.1 | - | - | - |
| Rusizi | 25.9 | 32.6 | 25.8 | 5.2 | 2.8 | 12.9 | 5.8 | 4.4 | 51.6 | - | - | - |
| Nyamasheke | 15.3 | 18.4 | 40.0 | 5.2 | 7.5 | - | 0.7 | 0.8 | 60.0 | - | - | - |
| Rulindo | 13.0 | 14.5 | 61.9 | 3.4 | 2.3 | - | 1.4 | - | - | - | - | - |
| Gakenke | 3.1 | 7.4 | 57.6 | 2.3 | 3.8 | 3.0 | 0.5 | 0.3 | 3.0 | - | - | - |
| Musanze | 2.2 | 3.3 | 13.7 | 0.3 | - | 1.1 | 56.6 | 62.7 | 73.7 | 0.6 | - | - |
| Burera | 3.5 | 3.2 | 5.5 | - | - | - | 26.4 | 20.5 | 65.5 | - | - | - |
| Gicumbi | 5.0 | 2.7 | 67.9 | 1.0 | 0.7 | - | 1.9 | 2.7 | 20.8 | - | - | - |
| Rwamagana | 9.1 | 12.1 | - | 3.7 | 8.5 | 13.3 | 1.7 | 2.8 | 80.0 | - | - | - |
| Nyagatare | 11.7 | 8.1 | - | 1.5 | 2.9 | - | 2.8 | 1.5 | 41.7 | 0.2 | - | 42 |
| Gatsibo | 5.5 | 4.3 | 24.2 | 7.2 | 8.3 | - | 11.2 | 8.5 | 75.8 | - | - | - |
| Kayonza | 15.0 | 12.7 | 80.0 | 3.0 | 6.8 | 20.0 | 0.8 | 0.5 | - | - | - | - |
| Kirehe | 12.2 | 12.0 | 28.6 | 9.0 | 12.6 | - | 4.7 | 1.9 | 57.1 | - | - | - |
| Ngoma | 3.2 | 1.8 | - | 1.3 | 7.1 | - | - | - | - | 0.6 | - | - |
| Bugesera | 18.4 | 16.1 | 10.0 | 3.4 | 2.0 | 30.0 | 3.4 | 2.7 | 60.0 | - | - | - |
| SSF Overall | 8.9 | 9.4 | 32.7 | 2.5 | 3.3 | 2.3 | 10.3 | 9.2 | 49.7 | 0.0 | 0.0 | 1.0 |
| LSF Overall | 18.5 | 23.4 | - | 4.7 | 5.5 | - | 5.4 | 5.7 | - | 0.3 | - | - |

Source: NISR, SAS 2018

According to SAS 2018 findings, the degree of erosion within our fields is low dominated by splash erosion and wind erosion, whereas in season A, the land was eroded by low erosion at 88.5%, season B at 87.6% and season C at 88.8%, while the land eroded with moderate erosion was 10.0 % in season A, 10.5% in season B and 6.5% in season C. concerning severe erosion 1.5% of our land was recorded in season A, 1.9% in season B and 4.6% in season C. For the severe erosion across the districts in all the seasons, the SSF land at the district level with the most severely eroded land was Gicumbi at 29.6% followed by Gasabo at 23% and Ngororero at 15%. The degree of SSF land across districts with moderate erosion varies considerably across 30 districts with the highest observed moderate erosion in Rutsiro at 40.6%, Karongi at 28%, and Muhanga at 27% (see Table 17.4).

Table 17. 4 : Degree of erosion per district (Percentage)

| District | Severe erosion | | | Moderate erosion | | | Low erosion | | |
|--------------------|----------------|------------|------------|------------------|-------------|------------|-------------|-------------|-------------|
| | Season A | Season B | Season C | Season A | Season B | Season C | Season A | Season B | Season C |
| Nyarugenge | 0.4 | 0.9 | 7.7 | 8.7 | 7.9 | - | 90.8 | 91.3 | 92.3 |
| Gasabo | - | 2.8 | 23.8 | 10.3 | 5.3 | 4.8 | 89.7 | 91.9 | 71.4 |
| Kicukiro | - | - | - | 7.0 | - | - | 93.0 | 100.0 | - |
| Nyanza | 1.8 | 0.7 | 6.1 | 12.1 | 12.8 | 10.6 | 86.2 | 86.5 | 83.3 |
| Gisagara | - | 4.2 | 14.9 | 1.6 | 9.8 | 6.1 | 98.4 | 86.0 | 79.0 |
| Nyaruguru | 3.1 | 1.3 | - | 7.7 | 5.5 | 14.9 | 89.2 | 93.2 | 85.1 |
| Huye | 1.4 | 1.9 | 3.6 | 4.2 | 5.8 | 25.0 | 94.4 | 92.3 | 71.4 |
| Nyamagabe | - | 3.6 | - | 13.1 | 8.0 | - | 86.9 | 88.4 | 100.0 |
| Ruhango | 3.0 | 1.2 | - | 16.6 | 8.0 | 2.9 | 80.5 | 90.8 | 97.1 |
| Muhanga | 1.7 | 1.1 | 1.6 | 4.6 | 27.0 | 6.4 | 93.7 | 71.9 | 92.1 |
| Kamonyi | 0.3 | 2.1 | - | 6.1 | 10.2 | - | 93.6 | 87.7 | 100.0 |
| Karongi | 2.7 | 5.2 | - | 28.0 | 27.0 | 9.1 | 69.3 | 67.8 | 90.9 |
| Rutsiro | 1.0 | 3.2 | 1.5 | 36.7 | 40.6 | 7.6 | 62.3 | 56.2 | 90.9 |
| Rubavu | 0.4 | 0.5 | - | 9.3 | 6.5 | 15.2 | 90.3 | 93.0 | 84.8 |
| Nyabihu | 0.7 | 3.6 | 14.1 | 6.1 | 4.5 | 14.1 | 93.2 | 91.9 | 71.8 |
| Ngororero | 11.8 | 15.0 | - | 20.9 | 11.7 | - | 67.3 | 73.3 | 100.0 |
| Rusizi | 7.4 | 1.5 | - | 13.7 | 6.7 | 2.7 | 79.0 | 91.8 | 97.3 |
| Nyamasheke | 1.6 | 0.3 | - | 13.3 | 10.3 | - | 85.2 | 89.4 | 100.0 |
| Rulindo | 0.3 | 0.7 | - | 12.6 | 11.6 | 10.0 | 87.1 | 87.7 | 90.0 |
| Gakenke | 1.2 | 0.7 | - | 23.2 | 21.3 | 6.9 | 75.6 | 78.0 | 93.1 |
| Musanze | 0.3 | 1.2 | - | 3.6 | 13.4 | 2.0 | 96.1 | 85.4 | 98.0 |
| Burera | 1.5 | 2.5 | - | 10.8 | 9.5 | 4.5 | 87.7 | 88.0 | 95.5 |
| Gicumbi | 2.2 | 4.6 | 29.6 | 18.9 | 22.4 | - | 79.0 | 72.9 | 70.4 |
| Rwamagana | - | 0.7 | - | 2.5 | 3.0 | - | 97.5 | 96.4 | 100.0 |
| Nyagatare | 1.1 | 2.4 | 5.9 | 6.2 | 7.3 | 41.2 | 92.7 | 90.3 | 52.9 |
| Gatsibo | 0.2 | 0.5 | - | 2.5 | 9.0 | 5.4 | 97.4 | 90.5 | 94.6 |
| Kayonza | 1.0 | 0.4 | - | 9.0 | 12.3 | 20.0 | 89.9 | 87.3 | 80.0 |
| Kirehe | 1.1 | 0.3 | - | 4.9 | 3.8 | - | 94.1 | 95.9 | 100.0 |
| Ngoma | - | - | - | 3.0 | 5.9 | - | 97.0 | 94.1 | - |
| Bugesera | 1.0 | - | - | 4.8 | 1.0 | - | 94.2 | 99.1 | 100.0 |
| SSF Overall | 1.5 | 1.9 | 4.6 | 10.0 | 10.5 | 6.5 | 88.5 | 87.6 | 88.8 |
| LSF Overall | 1.7 | 0.8 | | 10.5 | 8.8 | | 87.8 | 90.4 | |

Source: NISR, SAS 2018

3.4 Gross Added value

Table 18.1 shows the gross added value of different crops. It is revealed that in 2018 the gross added value of almost all crops was increased comparing to the 2017 year.

Table 18. 1 : Gross Added value (Rwf per ha) by crop and year

| Crops | 2015 | 2016 | 2017 |
|-----------------|-----------|-----------|-----------|
| Sorghum | 287,157 | 290,457 | 405,456 |
| Maize | 240,241 | 274,620 | 275,805 |
| Wheat | 286,658 | 245,098 | 296,963 |
| Paddy rice | 2,269,385 | 2,165,030 | 2,932,325 |
| Irish potatoes | 1,083,057 | 1,449,409 | 1,787,205 |
| Sweet potatoes | 658,185 | 766,847 | 936,594 |
| Cassava | 279,090 | 384,400 | 849,635 |
| Beans | 343,667 | 352,404 | 357,121 |
| Peas | 330,864 | 545,926 | 477,748 |
| Vegetables | 4,592,197 | 5,427,444 | 5,017,178 |
| Banana for beer | 414,587 | 492,776 | 837,380 |
| Cooking banana | 735,558 | 779,767 | 1,272,422 |
| Dessert banana | 720,062 | 836,628 | 1,222,897 |
| Fruits | 870,907 | 1,120,767 | 2,985,040 |
| Groundnuts | 191,745 | 202,714 | 223,864 |
| Soybeans | 105,788 | 94,058 | 101,512 |

Source: NISR, National Accounts 2015, 2016 and 2017

APPENDIX

Appendix 1: Season A 2018_Cultivated area by crop type and district (Ha)

| Crop/ District | Nyarugenge | Gasabo | Kicukiro | Nyanza | Gisagara | Nyaruguru | Huye | Nyamagabe | Ruhango | Muhanga |
|-----------------------------------|--------------|---------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Cereals | 398 | 3,898 | 982 | 5,925 | 11,129 | 2,482 | 4,540 | 2,356 | 2,346 | 3,019 |
| Maize | 397 | 3,768 | 980 | 4,449 | 7,272 | 2,304 | 2,278 | 2,294 | 1,386 | 1,866 |
| Sorghum | - | - | - | 1,064 | 140 | 33 | 19 | - | - | - |
| Paddy rice | - | 102 | - | 153 | 2,999 | 0 | 1,899 | - | 846 | 136 |
| Wheat | - | - | - | - | - | 55 | - | - | - | - |
| Other cereals | 1 | 27 | 2 | 259 | 718 | 88 | 344 | 62 | 115 | 1,016 |
| Tubers and Roots | 1,284 | 4,316 | 1,137 | 13,650 | 7,044 | 10,990 | 6,090 | 13,073 | 24,738 | 14,188 |
| Cassava | 911 | 2,615 | 434 | 10,587 | 4,061 | 4,198 | 3,830 | 5,255 | 21,824 | 8,208 |
| Sweet potato | 267 | 1,301 | 624 | 2,349 | 2,483 | 4,987 | 1,786 | 5,613 | 2,066 | 4,276 |
| Irish potato | 18 | 358 | 45 | 578 | 302 | 1,245 | 411 | 1,785 | 401 | 162 |
| Taro & Yams | 87 | 43 | 35 | 136 | 198 | 560 | 64 | 420 | 446 | 1,543 |
| Banana | 1,449 | 2,263 | 1,237 | 4,899 | 7,134 | - | 3,958 | 4,465 | 7,609 | 15,986 |
| Cooking banana | 262 | 951 | 429 | 541 | 1,087 | 736 | 576 | 468 | 629 | 1,385 |
| Dessert banana | 128 | 598 | 213 | 1,904 | 933 | 424 | 1,343 | 468 | 1,342 | 2,626 |
| Banana for beer | 1,059 | 714 | 595 | 2,454 | 5,113 | 1,634 | 2,039 | 3,529 | 5,638 | 11,975 |
| Legumes and pulses | 1,223 | 8,624 | 1,590 | 16,918 | 13,921 | 5,975 | 10,894 | 10,496 | 16,745 | 13,790 |
| Beans | 1,125 | 7,513 | 1,434 | 14,150 | 11,755 | 4,385 | 8,922 | 7,400 | 12,145 | 10,152 |
| Bush bean | 1,112 | 7,422 | 1,409 | 12,294 | 10,833 | 1,191 | 7,107 | 2,790 | 9,953 | 7,262 |
| Climbing bean | 13 | 92 | 25 | 1,855 | 922 | 3,194 | 1,815 | 4,610 | 2,193 | 2,889 |
| Pea | 1 | 178 | 10 | 560 | 89 | 610 | 431 | 1,801 | 304 | 155 |
| Groundnut | 41 | 504 | 64 | 1,205 | 480 | - | 159 | - | 1,390 | 123 |
| Soybean | 56 | 428 | 82 | 1,003 | 1,599 | 981 | 1,382 | 1,295 | 2,907 | 3,360 |
| Vegetables and Fruits | 272 | 528 | 192 | 302 | 816 | 169 | 663 | 373 | 509 | 547 |
| Vegetables | 248 | 523 | 159 | 170 | 669 | 169 | 590 | 320 | 164 | 528 |
| Fruits | 23 | 5 | 33 | 132 | 147 | - | 72 | 53 | 345 | 19 |
| Fodder crops | 408 | 1,381 | 98 | 194 | 272 | 430 | 51 | 268 | 288 | 206 |
| Other crops | 719 | 434 | 54 | 2,479 | 1,196 | 1,239 | 1,013 | 603 | 1,527 | 827 |
| Developed land | 5,752 | 21,443 | 5,291 | 44,368 | 41,512 | 24,079 | 27,209 | 31,634 | 53,763 | 48,562 |
| Agricultural physical land | 4,205 | 18,778 | 4,218 | 30,249 | 29,100 | 13,659 | 19,137 | 18,836 | 32,165 | 32,999 |
| Fallow land | 1,316 | 3,647 | 1,535 | 11,271 | 7,615 | 8,788 | 7,406 | 11,867 | 10,794 | 6,652 |

Source: NISR, SAS 2018, Season A

Appendix 1 : Season A 2018_Cultivated area by crop type and district (Ha) cont'd

| Crop/ District | Kamonyi | Karongi | Rutsiro | Rubavu | Nyabihu | Ngororero | Rusizi | Nyamasheke | Rulindo | Gakenke | Musanze |
|-----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Cereals | 5,140 | 4,928 | 8,018 | 3,430 | 3,218 | 5,014 | 7,596 | 3,701 | 5,363 | 9,937 | 9,384 |
| Maize | 4,979 | 4,920 | 7,567 | 3,396 | 2,235 | 4,393 | 5,651 | 3,127 | 5,214 | 9,716 | 5,993 |
| Sorghum | - | 8 | 240 | 34 | 263 | 221 | 9 | 66 | - | - | 1,654 |
| Paddy rice | 160 | - | - | - | - | - | 1,936 | 509 | - | - | - |
| Wheat | - | - | 198 | - | 720 | 395 | - | - | 144 | - | 1,736 |
| Other cereals | - | - | 13 | - | - | 6 | - | - | 5 | 221 | - |
| Tubers and Roots | 16,383 | 16,143 | 10,075 | 6,136 | 11,506 | 14,630 | 19,809 | 26,910 | 9,799 | 13,683 | 7,061 |
| Cassava | 11,436 | 9,069 | 3,163 | 32 | 999 | 5,283 | 17,389 | 21,183 | 5,525 | 5,199 | 70 |
| Sweet potato | 3,678 | 5,339 | 2,796 | 769 | 3,046 | 6,102 | 1,438 | 5,117 | 3,410 | 5,460 | 1,297 |
| Irish potato | 284 | 1,035 | 3,686 | 5,301 | 7,370 | 2,257 | 116 | 19 | 693 | 2,119 | 5,574 |
| Taro & Yams | 985 | 700 | 430 | 34 | 92 | 987 | 866 | 592 | 171 | 905 | 121 |
| Banana | 9,868 | 7,686 | 5,394 | 797 | 1,371 | 8,954 | 4,055 | 5,133 | 7,307 | 12,186 | 871 |
| Cooking banana | 1,073 | 659 | 777 | 636 | 441 | 568 | 1,891 | 1,692 | 1,273 | 2,117 | 81 |
| Dessert banana | 1,892 | 648 | 1,692 | 54 | 328 | 531 | 123 | 388 | 1,405 | 2,383 | 220 |
| Banana for beer | 6,903 | 6,379 | 2,925 | 107 | 602 | 7,854 | 2,041 | 3,053 | 4,628 | 7,686 | 570 |
| Legumes and pulses | 16,816 | 7,364 | 6,914 | 3,722 | 7,400 | 8,733 | 7,922 | 6,945 | 13,484 | 11,818 | 2,901 |
| Beans | 13,365 | 6,550 | 5,603 | 3,593 | 5,641 | 7,181 | 7,567 | 4,805 | 12,440 | 10,315 | 2,738 |
| Bush bean | 12,681 | 3,228 | 848 | 7 | 290 | 1,375 | 5,568 | 2,108 | 9,565 | 1,770 | 144 |
| Climbing bean | 684 | 3,322 | 4,755 | 3,587 | 5,351 | 5,806 | 2,000 | 2,696 | 2,875 | 8,545 | 2,593 |
| Pea | 612 | 325 | 384 | 129 | 1,731 | 683 | 104 | 19 | 259 | 562 | 154 |
| Groundnut | 1,225 | 70 | - | - | - | - | 30 | 474 | 139 | 63 | - |
| Soybean | 1,615 | 419 | 927 | - | 28 | 869 | 221 | 1,647 | 646 | 877 | 10 |
| Vegetables and Fruits | 1,170 | 807 | 814 | 606 | 843 | 786 | 1,278 | 515 | 517 | 830 | 898 |
| Vegetables | 990 | 580 | 387 | 579 | 696 | 514 | 536 | 367 | 499 | 385 | 728 |
| Fruits | 180 | 227 | 427 | 27 | 147 | 271 | 742 | 148 | 18 | 444 | 170 |
| Fodder crops | 339 | 229 | 555 | 25 | 37 | 405 | 126 | 409 | 255 | 591 | 151 |
| Other crops | 1,547 | 725 | 3,118 | 994 | 2,212 | 480 | 2,399 | 3,962 | 1,160 | 1,605 | 1,539 |
| Developed land | 51,263 | 37,880 | 34,889 | 15,710 | 26,587 | 39,000 | 43,185 | 47,575 | 37,885 | 50,649 | 22,804 |
| Agricultural physical land | 37,074 | 24,617 | 26,181 | 15,496 | 25,432 | 25,277 | 27,001 | 23,307 | 26,600 | 38,160 | 24,892 |
| Fallow land | 6,574 | 7,565 | 4,935 | 2,544 | 2,744 | 5,299 | 4,136 | 4,279 | 2,383 | 2,212 | 722 |

Source: NISR, SAS 2018, Season A

Appendix 1 : Season A 2018_Cultivated area by crop type and district (Ha)

| Crop/ District | Burera | Gicumbi | Rwamagana | Nyagatare | Gatsibo | Kayanza | Kirehe | Ngoma | Bugesera | National |
|-------------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Cereals | 7,986 | 6,381 | 10,778 | 46,142 | 25,630 | 18,260 | 20,424 | 18,974 | 14,972 | 272,352 |
| Maize | 6,782 | 5,705 | 10,292 | 30,806 | 21,179 | 14,292 | 18,081 | 17,961 | 8,895 | 218,179 |
| Sorghum | 1,109 | 471 | - | 12,010 | 1,937 | 2,434 | 1,001 | - | 4,438 | 27,151 |
| Paddy rice | - | - | 300 | 2,635 | 1,358 | 768 | 938 | 777 | 1,421 | 16,938 |
| Wheat | 95 | 136 | - | 58 | 889 | 63 | - | - | - | 4,490 |
| Other cereals | - | 69 | 187 | 633 | 267 | 702 | 404 | 236 | 217 | 5,594 |
| Tubers and Roots | 7,808 | 13,940 | 8,732 | 8,960 | 7,849 | 13,073 | 13,506 | 10,704 | 11,198 | 344,416 |
| Cassava | 266 | 2,787 | 5,571 | 5,784 | 4,516 | 9,631 | 10,508 | 7,920 | 6,464 | 194,717 |
| Sweet potato | 2,488 | 6,152 | 1,535 | 1,513 | 2,160 | 1,543 | 1,943 | 2,063 | 3,855 | 87,456 |
| Irish potato | 4,966 | 4,863 | 1,348 | 1,480 | 1,018 | 1,671 | 963 | 595 | 172 | 50,836 |
| Taro & Yams | 88 | 137 | 278 | 182 | 154 | 228 | 92 | 126 | 707 | 11,406 |
| Banana | 1,822 | 9,004 | 10,544 | 9,511 | 19,754 | 15,918 | 17,666 | 14,226 | 12,987 | 224,053 |
| Cooking banana | 657 | 3,807 | 7,237 | 6,704 | 8,812 | 12,086 | 11,812 | 11,394 | 4,741 | 85,524 |
| Dessert banana | 210 | 2,446 | 996 | 350 | 2,488 | 1,536 | 203 | 553 | 1,685 | 30,110 |
| Banana for beer | 955 | 2,750 | 2,311 | 2,456 | 8,454 | 2,297 | 5,652 | 2,279 | 6,560 | 111,213 |

Rwanda Seasonal Agricultural Survey 2107/2018

| | | | | | | | | | | |
|-----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------------|
| Legumes and pulses | 11,727 | 20,700 | 12,385 | 18,998 | 18,023 | 20,427 | 23,043 | 11,812 | 15,514 | 346,824 |
| Beans | 9,710 | 17,874 | 11,060 | 13,769 | 16,094 | 18,457 | 20,324 | 9,881 | 11,272 | 287,218 |
| Bush bean | 1,270 | 6,663 | 10,765 | 12,693 | 14,452 | 18,249 | 19,138 | 9,731 | 11,081 | 202,996 |
| Climbing bean | 8,440 | 11,211 | 294 | 1,076 | 1,642 | 208 | 1,187 | 151 | 191 | 84,222 |
| Pea | 1,968 | 2,117 | 148 | 601 | 141 | 345 | 382 | 314 | 4 | 15,121 |
| Groundnut | - | 590 | 842 | 3,965 | 1,330 | 1,339 | 1,514 | 1,321 | 3,607 | 20,474 |
| Soybean | 50 | 119 | 335 | 663 | 458 | 285 | 823 | 295 | 631 | 24,011 |
| Vegetables and Fruits | 472 | 1,026 | 1,521 | 392 | 284 | 564 | 145 | 996 | 937 | 19,769 |
| Vegetables | 377 | 903 | 736 | 349 | 249 | 523 | 98 | 285 | 472 | 13,794 |
| Fruits | 95 | 122 | 784 | 43 | 35 | 41 | 46 | 711 | 464 | 5,975 |
| Fodder crops | 438 | 155 | 902 | 99 | 161 | 125 | 62 | 140 | 303 | 9,104 |
| Other crops | 470 | 840 | 2,259 | 955 | 3,270 | 896 | 1,894 | 1,765 | 146 | 42,325 |
| Developed land | 30,722 | 52,046 | 47,121 | 85,057 | 74,970 | 69,263 | 76,740 | 58,618 | 56,057 | 1,261,636 |
| Agricultural physical land | 29,002 | 44,486 | 37,817 | 71,444 | 57,986 | 50,462 | 58,794 | 42,552 | 45,093 | 935,017 |
| Fallow land | 2,938 | 10,056 | 5,490 | 2,179 | 1,747 | 6,681 | 3,562 | 7,781 | 25,471 | 180,191 |

Source: NISR, SAS 2018, Season A

Appendix 2: Season B 2018_Cultivated area by crop type and district (Ha)

| Crop/District | Nyarugenge | Gasabo | Kicukiro | Nyanza | Gisagara | Nyaruguru | Huye | Nyamagabe | Ruhango | Muhanga |
|------------------------------|--------------|---------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Cereals | 831 | 5,473 | 1,367 | 8,436 | 9,451 | 3,286 | 7,803 | 5,264 | 4,983 | 1,126 |
| Maize | 286 | 1,496 | 391 | 1,724 | 2,599 | 277 | 875 | 650 | 1,390 | 577 |
| Sorghum | 546 | 3,813 | 712 | 6,090 | 2,912 | 2,678 | 5,461 | 3,869 | 2,534 | 225 |
| Paddy rice | - | 150 | 262 | 576 | 3,384 | - | 1,337 | - | 953 | 305 |
| Wheat | - | - | - | - | - | 271 | - | 580 | - | - |
| Other cereals | - | 14 | 2 | 46 | 556 | 60 | 131 | 165 | 106 | 19 |
| Tubers and Roots | 1,066 | 5,819 | 795 | 16,361 | 9,763 | 10,457 | 7,788 | 12,146 | 28,420 | 14,700 |
| Cassava | 649 | 3,087 | 347 | 12,106 | 6,534 | 5,018 | 4,606 | 5,441 | 23,493 | 7,367 |
| Sweet potato | 270 | 1,406 | 258 | 3,070 | 2,348 | 3,265 | 2,065 | 3,290 | 3,785 | 5,086 |
| Irish potato | 18 | 1,093 | 46 | 736 | 496 | 1,341 | 860 | 2,715 | 334 | 314 |
| Taro&Yams | 129 | 233 | 143 | 448 | 385 | 834 | 258 | 700 | 808 | 1,933 |
| Banana | 1,445 | 2,960 | 1,148 | 5,596 | 7,772 | 2,871 | 4,187 | 4,670 | 6,770 | 14,917 |
| Cooking banana | 282 | 1,210 | 427 | 1,178 | 1,469 | 1,036 | 619 | 537 | 470 | 1,531 |
| Dessert banana | 123 | 876 | 268 | 2,631 | 1,372 | 912 | 1,339 | 766 | 1,957 | 1,747 |
| Banana for beer | 1,040 | 874 | 452 | 1,786 | 4,931 | 923 | 2,229 | 3,367 | 4,343 | 11,640 |
| Legumes and Pulses | 1,247 | 5,499 | 1,266 | 12,702 | 14,706 | 5,885 | 7,750 | 7,194 | 15,805 | 11,528 |
| Beans | 1,043 | 4,841 | 1,129 | 9,473 | 11,216 | 4,455 | 5,699 | 5,042 | 10,873 | 7,522 |
| Bush bean | 1,008 | 4,755 | 1,103 | 8,052 | 9,810 | 1,032 | 3,400 | 1,125 | 8,302 | 4,983 |
| Climbing bean | 35 | 86 | 26 | 1,421 | 1,406 | 3,423 | 2,299 | 3,917 | 2,571 | 2,539 |
| Pea | 4 | 69 | 1 | 263 | 138 | 398 | 225 | 1,167 | 154 | 314 |
| Groundnut | 54 | 233 | 79 | 1,376 | 858 | - | 160 | - | 1,275 | 25 |
| Soybean | 146 | 356 | 57 | 1,590 | 2,493 | 1,032 | 1,665 | 985 | 3,504 | 3,668 |
| Vegetables and Fruits | 212 | 363 | 203 | 768 | 260 | 283 | 210 | 642 | 688 | 198 |
| Vegetables | 187 | 357 | 152 | 634 | 154 | 283 | 210 | 606 | 298 | 189 |
| Fruits | 25 | 6 | 51 | 134 | 105 | - | - | 36 | 390 | 9 |
| Fodder crops | 364 | 1,120 | 124 | 371 | 136 | 752 | 6 | 253 | 267 | 375 |
| Other crops | 673 | 520 | 42 | 1,970 | 1,597 | 980 | 870 | 573 | 1,375 | 900 |
| Developed land | 5,838 | 21,723 | 4,944 | 46,235 | 43,685 | 24,514 | 28,615 | 30,742 | 58,308 | 43,745 |

Source: NISR, SAS 2018, Season B

Appendix 2: Season B 2018_Cultivated area by crop type and district (Ha) cont'd

| Crop/District | Kamonyi | Karongi | Rutsiro | Rubavu | Nyabihu | Ngororero | Rusizi | Nyamasheke | Rulindo | Gakenke | Musanze |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Cereals | 6,954 | 3,210 | 2,345 | 2,377 | 3,183 | 2,717 | 2,172 | 1,062 | 3,568 | 1,377 | 2,149 |
| Maize | 1,911 | 517 | 2,090 | 1,146 | 2,091 | 1,133 | 699 | 634 | 798 | 1,056 | 1,456 |
| Sorghum | 4,862 | 2,397 | 7 | 1,198 | - | - | 12 | 33 | 2,666 | 202 | - |
| Paddy rice | 181 | - | - | - | - | 169 | 1,461 | 396 | - | - | - |
| Wheat | - | 156 | 249 | 34 | 1,092 | 1,416 | - | - | 104 | 119 | 694 |
| Other cereals | - | 140 | - | - | - | - | - | - | - | - | - |
| Tubers and Roots | 20,129 | 14,940 | 8,350 | 7,109 | 11,177 | 14,478 | 16,884 | 17,316 | 10,731 | 13,530 | 6,438 |
| Cassava | 13,605 | 9,040 | 1,996 | 31 | 818 | 5,909 | 14,232 | 11,704 | 5,964 | 3,412 | 214 |
| Sweet potato | 4,411 | 4,044 | 1,815 | 490 | 1,904 | 4,634 | 2,050 | 4,682 | 3,504 | 6,474 | 1,004 |
| Irish potato | 1,020 | 810 | 3,794 | 6,522 | 8,296 | 2,533 | 84 | 169 | 947 | 1,685 | 5,105 |
| Taro&Yams | 1,092 | 1,046 | 745 | 66 | 159 | 1,402 | 518 | 762 | 317 | 1,959 | 115 |
| Banana | 11,062 | 7,535 | 4,948 | 787 | 1,418 | 8,929 | 4,246 | 4,475 | 7,791 | 11,685 | 1,525 |
| Cooking banana | 1,393 | 925 | 701 | 556 | 452 | 532 | 1,862 | 1,503 | 1,331 | 2,190 | 352 |
| Dessert banana | 1,463 | 907 | 1,465 | 30 | 375 | 1,175 | 265 | 252 | 1,887 | 2,629 | 383 |
| Banana for beer | 8,206 | 5,704 | 2,783 | 201 | 592 | 7,221 | 2,119 | 2,719 | 4,573 | 6,866 | 791 |
| Legumes and Pulses | 12,676 | 10,289 | 8,641 | 2,892 | 2,585 | 5,975 | 8,471 | 8,053 | 11,478 | 12,463 | 6,379 |
| Beans | 9,056 | 8,486 | 6,026 | 2,612 | 2,003 | 3,910 | 7,894 | 5,205 | 10,065 | 11,817 | 6,155 |
| Bush bean | 8,383 | 2,960 | 1,213 | 31 | 9 | 612 | 5,813 | 1,863 | 5,309 | 887 | 230 |
| Climbing bean | 673 | 5,526 | 4,814 | 2,580 | 1,994 | 3,298 | 2,081 | 3,343 | 4,755 | 10,930 | 5,925 |
| Pea | 324 | 430 | 859 | 281 | 529 | 429 | 48 | 90 | 322 | 242 | 163 |
| Groundnut | 1,249 | 162 | - | - | - | - | 52 | 798 | 237 | 1 | - |
| Soybean | 2,047 | 1,211 | 1,756 | - | 53 | 1,635 | 477 | 1,961 | 854 | 402 | 61 |
| Vegetables and Fruits | 818 | 442 | 1,125 | 1,203 | 317 | 960 | 852 | 646 | 420 | 835 | 1,150 |
| Vegetables | 385 | 281 | 532 | 1,135 | 257 | 686 | 255 | 464 | 394 | 592 | 703 |
| Fruits | 433 | 161 | 593 | 67 | 60 | 274 | 597 | 181 | 26 | 243 | 447 |
| Fodder crops | 265 | 329 | 595 | 192 | 146 | 331 | 142 | 471 | 148 | 454 | 395 |
| Other crops | 1,764 | 747 | 3,443 | 592 | 1,325 | 747 | 2,322 | 3,967 | 1,228 | 1,402 | 376 |
| Developed land | 53,668 | 37,492 | 29,448 | 15,152 | 20,151 | 34,137 | 35,088 | 35,991 | 35,364 | 41,746 | 18,411 |

Source: NISR, SAS 2018, Season B

Appendix 2: Season B 2018_Cultivated area by crop type and district (Ha) cont'd

| Crop/District | Burera | Gicumbi | Rwamagana | Nyagatare | Gatsibo | Kayanza | Kirehe | Ngoma | Bugesera | National |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------------|
| Cereals | 9,093 | 13,041 | 11,983 | 28,099 | 18,214 | 21,090 | 17,146 | 9,744 | 14,567 | 222,111 |
| Maize | 2,302 | 3,092 | 2,738 | 16,685 | 8,687 | 6,788 | 3,678 | 3,491 | 6,896 | 78,151 |
| Sorghum | 4,687 | 9,812 | 8,890 | 9,202 | 7,578 | 13,351 | 12,192 | 4,951 | 6,109 | 116,986 |
| Paddy rice | - | - | 342 | 2,072 | 1,097 | 538 | 1,031 | 1,015 | 1,471 | 16,739 |
| Wheat | 2,104 | 137 | - | - | 778 | 1 | - | - | - | 7,735 |
| Other cereals | - | - | 14 | 140 | 73 | 411 | 245 | 287 | 91 | 2,500 |
| Tubers and Roots | 8,088 | 11,379 | 11,088 | 11,519 | 9,874 | 15,230 | 11,729 | 12,054 | 9,043 | 348,399 |
| Cassava | 302 | 2,335 | 5,982 | 7,816 | 4,911 | 9,284 | 8,207 | 7,435 | 6,641 | 188,485 |
| Sweet potato | 2,450 | 3,777 | 2,390 | 1,813 | 1,835 | 2,595 | 826 | 2,955 | 1,489 | 79,983 |
| Irish potato | 5,218 | 5,054 | 1,510 | 1,746 | 2,385 | 2,871 | 1,745 | 1,180 | 16 | 60,644 |
| Taro&Yams | 119 | 212 | 1,206 | 145 | 742 | 480 | 951 | 484 | 897 | 19,287 |
| Banana | 2,268 | 9,198 | 11,627 | 9,422 | 19,547 | 15,247 | 18,996 | 16,434 | 12,939 | 232,420 |
| Cooking banana | 1,171 | 3,994 | 8,655 | 6,461 | 8,598 | 11,100 | 13,044 | 12,757 | 3,837 | 90,175 |
| Dessert banana | 309 | 2,222 | 1,160 | 655 | 2,696 | 1,051 | 321 | 1,132 | 1,785 | 34,153 |
| Banana for beer | 789 | 2,982 | 1,812 | 2,306 | 8,253 | 3,096 | 5,631 | 2,545 | 7,317 | 108,091 |
| Legumes and Pulses | 11,836 | 11,813 | 8,190 | 34,016 | 20,004 | 15,190 | 20,640 | 16,681 | 19,280 | 331,131 |
| Beans | 10,698 | 10,430 | 7,075 | 28,877 | 15,238 | 13,018 | 18,424 | 15,144 | 15,680 | 269,105 |
| Bush bean | 506 | 2,848 | 6,738 | 28,029 | 14,261 | 12,585 | 11,710 | 14,277 | 15,493 | 177,327 |
| Climbing bean | 10,191 | 7,582 | 337 | 848 | 978 | 433 | 6,714 | 867 | 187 | 91,778 |
| Pea | 1,050 | 1,053 | 234 | 238 | 565 | 878 | 92 | 34 | 20 | 10,612 |
| Groundnut | - | 325 | 755 | 3,721 | 3,895 | 943 | 1,347 | 589 | 2,849 | 20,983 |
| Soybean | 88 | 6 | 125 | 1,180 | 306 | 351 | 778 | 913 | 732 | 30,431 |
| Vegetables and Fruits | 641 | 744 | 1,710 | 537 | 333 | 523 | 148 | 842 | 1,086 | 19,157 |
| Vegetables | 541 | 553 | 941 | 471 | 287 | 377 | 118 | 129 | 308 | 12,480 |
| Fruits | 100 | 191 | 770 | 67 | 46 | 145 | 29 | 713 | 778 | 6,677 |
| Fodder crops | 311 | 117 | 1,212 | 30 | 94 | 49 | 129 | 188 | 340 | 9,707 |
| Other crops | 411 | 1,009 | 2,696 | 966 | 3,227 | 1,090 | 1,591 | 1,369 | 154 | 39,925 |
| Developed land | 32,648 | 47,299 | 48,506 | 84,589 | 71,293 | 68,419 | 70,379 | 57,312 | 57,409 | 1,202,851 |

Source: NISR, SAS 2018, Season B

Appendix 3 : Season C 2018_Cultivated area by crop type and district (Ha)

| Crop/District | Nyarugenge | Gasabo | Kicukiro | Nyanza | Gisagara | Nyaruguru | Huye | Nyamagabe | Ruhango | Muhanga | Kamonyi |
|------------------------------|------------|------------|----------|------------|--------------|------------|------------|------------|------------|------------|------------|
| Tubers and Roots | 34 | 55 | - | 183 | 512 | 666 | 274 | 560 | 406 | 284 | 151 |
| Sweet potato | 34 | 55 | - | 168 | 506 | 666 | 257 | 492 | 396 | 284 | 151 |
| Irish potato | - | - | - | 15 | 7 | - | 17 | 68 | 10 | - | - |
| Legumes and Pulses | 39 | - | - | 147 | 385 | 110 | 2 | 16 | 40 | 181 | 37 |
| Beans | 39 | - | - | 130 | 290 | 110 | 2 | - | 40 | 11 | 37 |
| Bush bean | 39 | - | - | 130 | 290 | 110 | 2 | - | 40 | 11 | 30 |
| Climbing bean | - | - | - | - | - | - | - | - | - | - | 8 |
| Pea | - | - | - | 17 | - | - | - | 16 | - | 1 | - |
| Soybean | - | - | - | 1 | 95 | - | - | - | - | 169 | - |
| Vegetables and Fruits | 15 | 172 | - | 233 | 318 | 51 | 40 | 81 | 202 | 3 | 284 |
| vegetables | 15 | 172 | - | 233 | 318 | 51 | 40 | 81 | 202 | 3 | 284 |
| Developed land | 89 | 227 | - | 563 | 1,216 | 827 | 316 | 656 | 648 | 468 | 473 |
| Total Physical Land | 43 | 100 | | 748 | 1,105 | 669 | 143 | 579 | 486 | 345 | 531 |

| Crop/District | Karongi | Rutsiro | Rubavu | Nyabihu | Ngororero | Rusizi | Nyamasheke | Rulindo | Gakenke | Musanze |
|------------------------------|-----------|------------|--------------|--------------|------------|------------|------------|------------|------------|--------------|
| Tubers and Roots | 43 | 140 | 843 | 2,760 | 59 | 92 | 4 | 96 | 107 | 2,650 |
| Sweet potato | 43 | 21 | 188 | 179 | 59 | 53 | 4 | 61 | 94 | 312 |
| Irish potato | - | 119 | 655 | 2,581 | - | 39 | - | 35 | 14 | 2,338 |
| Legumes and Pulses | - | 19 | - | 7 | 70 | 15 | - | 4 | - | 34 |
| Beans | - | - | - | - | 4 | 15 | - | 4 | - | 7 |
| Bush bean | - | - | - | - | 4 | 15 | - | 4 | - | 2 |
| Climbing bean | - | - | - | - | - | - | - | - | - | 5 |
| Pea | - | 19 | - | 7 | - | - | - | - | - | 26 |
| Soybean | - | - | - | - | 66 | - | - | - | - | - |
| Vegetables and Fruits | 36 | 24 | 270 | 167 | 2 | 47 | 10 | 108 | 52 | 459 |
| vegetables | 36 | 24 | 270 | 167 | 2 | 47 | 10 | 108 | 52 | 459 |
| Developed land | 79 | 183 | 1,113 | 2,934 | 132 | 154 | 14 | 207 | 159 | 3,143 |
| Total Physical Land | 43 | 150 | 1,706 | 4,241 | 71 | 96 | 9 | 176 | 124 | 3,309 |

Source: NISR, SAS 2018, Season C

Appendix 3: Season C 2018_Cultivated area by crop type and district (Ha) cont'd

| Crop/District | Burera | Gicumbi | Rwamagana | Nyagatare | Gatsibo | Kayanza | Kirehe | Ngoma | Bugesera | National |
|------------------------------|--------------|------------|------------|------------|------------|-----------|-----------|----------|------------|---------------|
| Tubers and Roots | 2,840 | 370 | 39 | 72 | 77 | - | 6 | - | 99 | 13,422 |
| Sweet potato | 1,278 | 96 | 39 | 72 | 72 | - | 6 | - | 97 | 5,683 |
| Irish potato | 1,562 | 274 | - | - | 5 | - | - | - | 2 | 7,740 |
| Legumes and Pulses | 156 | - | 65 | - | 14 | - | - | - | 124 | 1,465 |
| Beans | - | - | 65 | - | 14 | - | - | - | 117 | 885 |
| Bush bean | - | - | 65 | - | 14 | - | - | - | 117 | 873 |
| Climbing bean | - | - | - | - | - | - | - | - | - | 13 |
| Pea | 142 | - | - | - | - | - | - | - | - | 228 |
| Soybean | 13 | - | - | - | - | - | - | - | 7 | 351 |
| Vegetables and Fruits | 59 | 27 | 136 | 59 | 111 | 12 | 14 | - | 25 | 3,017 |
| vegetables | 59 | 27 | 136 | 59 | 111 | 12 | 14 | - | 25 | 3,017 |
| Developed land | 3,055 | 397 | 240 | 131 | 202 | 12 | 20 | - | 248 | 17,904 |
| Total Physical Land | 3,638 | 360 | 80 | 75 | 126 | 4 | 7 | - | 226 | 19,190 |

Source: NISR, SAS 2018, Season C

Appendix 4: Season A 2018_Harvested area by crop type and district (Ha)

| Crop/District | Nyarugenge | Gasabo | Kicukiro | Nyanza | Gisagara | Nyaruguru | Huye | Nyamagabe | Ruhango | Muhanga |
|------------------------------|--------------|---------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Cereals | 398 | 3,898 | 982 | 5,925 | 11,129 | 2,481 | 4,540 | 2,356 | 2,346 | 3,019 |
| Maize | 397 | 3,768 | 980 | 4,449 | 7,272 | 2,304 | 2,278 | 2,294 | 1,386 | 1,866 |
| Sorghum | - | - | - | 1,064 | 140 | 33 | 19 | - | - | - |
| Paddy rice | - | 102 | - | 153 | 2,999 | - | 1,899 | - | 846 | 136 |
| Wheat | - | - | - | - | - | 55 | - | - | - | - |
| Other Cereals | 1 | 27 | 2 | 259 | 718 | 88 | 344 | 62 | 115 | 1,016 |
| Tubers and Roots | 485 | 2,017 | 728 | 3,632 | 3,074 | 6,950 | 2,718 | 8,303 | 10,364 | 6,615 |
| Cassava | 113 | 314 | 25 | 569 | 91 | 157 | 458 | 485 | 7,450 | 634 |
| Sweet potato | 267 | 1,301 | 624 | 2,349 | 2,483 | 4,987 | 1,786 | 5,613 | 2,066 | 4,276 |
| Irish potato | 18 | 358 | 45 | 578 | 302 | 1,245 | 411 | 1,785 | 401 | 162 |
| Taro | 87 | 43 | 35 | 136 | 198 | 560 | 64 | 401 | 446 | 1,543 |
| Yam | - | - | - | - | - | - | - | 19 | - | - |
| Banana | 454 | 492 | 422 | 1,255 | 1,025 | 255 | 775 | 1,401 | 1,739 | 5,937 |
| Cooking Banana | 66 | 196 | 154 | 151 | 132 | 72 | 135 | 137 | 172 | 529 |
| Dessert banana | 17 | 139 | 47 | 334 | 47 | 27 | 99 | 46 | 103 | 326 |
| Banana for beer | 371 | 156 | 221 | 771 | 846 | 156 | 540 | 1,218 | 1,464 | 5,081 |
| Legumes and Pulses | 1,223 | 8,624 | 1,590 | 16,918 | 13,921 | 5,975 | 10,894 | 10,496 | 16,745 | 13,790 |
| Beans | 1,125 | 7,513 | 1,434 | 14,150 | 11,755 | 4,385 | 8,922 | 7,400 | 12,145 | 10,152 |
| Bush bean | 1,112 | 7,412 | 1,409 | 12,275 | 10,820 | 1,191 | 7,089 | 2,444 | 9,953 | 7,262 |
| Small red bean | - | 10 | - | 20 | 12 | - | 18 | 346 | - | - |
| Climbing bean | 13 | 92 | 25 | 1,855 | 922 | 3,194 | 1,815 | 4,610 | 2,193 | 2,889 |
| Pea | 1 | 178 | 10 | 560 | 89 | 610 | 431 | 1,801 | 304 | 155 |
| Groundnut | 41 | 504 | 64 | 1,205 | 480 | - | 159 | - | 1,390 | 123 |
| Soybean | 56 | 428 | 82 | 1,003 | 1,599 | 981 | 1,382 | 1,295 | 2,907 | 3,360 |
| Vegetables and Fruits | 270 | 526 | 187 | 170 | 757 | 169 | 638 | 320 | 438 | 547 |
| Vegetables | 248 | 449 | 159 | 170 | 669 | 169 | 590 | 320 | 164 | 528 |
| Fruits | 22 | 78 | 28 | 0 | 88 | - | 48 | - | 274 | 19 |
| Folder crops | 306 | 1,233 | 98 | 161 | 272 | 311 | 45 | 239 | 252 | 82 |
| Other crops | 110 | 141 | 19 | 557 | - | 142 | 0 | 120 | 75 | 174 |
| Total | 3,246 | 16,931 | 4,026 | 28,619 | 30,178 | 16,283 | 19,611 | 23,234 | 31,959 | 30,164 |

Source: NISR, SAS 2018, Season A

Appendix4: Season A 2018_Harvested area by crop type and district (Ha) cont'd

| Crop/District | Kamonyi | Karongi | Rutsiro | Rubavu | Nyabihu | Ngororero | Rusizi | Nyamasheke | Rulindo | Gakenke | Musanze |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Cereals | 5,140 | 4,928 | 8,018 | 3,430 | 3,218 | 5,014 | 7,596 | 3,701 | 5,363 | 9,937 | 9,384 |
| Maize | 4,979 | 4,920 | 7,567 | 3,396 | 2,235 | 4,393 | 5,651 | 3,127 | 5,214 | 9,716 | 5,993 |
| Sorghum | - | 8 | 240 | 34 | 263 | 221 | 9 | 66 | - | - | 1,654 |
| Paddy rice | 160 | - | - | - | - | - | 1,936 | 509 | - | - | - |
| Wheat | - | - | 198 | - | 720 | 395 | - | - | 144 | - | 1,736 |
| Other Cereals | - | - | 13 | - | - | 6 | - | - | 5 | 221 | - |
| Tubers and Roots | 7,637 | 8,750 | 7,050 | 6,122 | 10,604 | 10,110 | 5,006 | 12,317 | 4,654 | 8,755 | 6,992 |
| Cassava | 2,690 | 1,676 | 138 | 18 | 97 | 763 | 2,586 | 6,589 | 381 | 272 | 1 |
| Sweet potato | 3,678 | 5,339 | 2,796 | 769 | 3,046 | 6,102 | 1,438 | 5,117 | 3,410 | 5,460 | 1,297 |
| Irish potato | 284 | 1,035 | 3,686 | 5,301 | 7,370 | 2,257 | 116 | 19 | 693 | 2,119 | 5,574 |
| Taro | 908 | 700 | 430 | 34 | 92 | 987 | 831 | 576 | 171 | 869 | 121 |
| Yam | 77 | - | - | - | - | - | 35 | 16 | - | 35 | - |
| Banana | 2,441 | 2,467 | 1,994 | 86 | 407 | 3,026 | 979 | 1,328 | 2,209 | 4,657 | 291 |
| Cooking Banana | 253 | 205 | 311 | 63 | 142 | 211 | 455 | 368 | 336 | 849 | 20 |
| Dessert banana | 322 | 151 | 266 | 12 | 30 | 85 | 13 | 36 | 252 | 500 | 80 |
| Banana for beer | 1,865 | 2,111 | 1,416 | 12 | 235 | 2,730 | 511 | 924 | 1,621 | 3,309 | 191 |
| Legumes and Pulses | 16,816 | 7,364 | 6,914 | 3,722 | 7,400 | 8,733 | 7,922 | 6,945 | 13,484 | 11,818 | 2,901 |
| Beans | 13,365 | 6,550 | 5,603 | 3,593 | 5,641 | 7,181 | 7,567 | 4,805 | 12,440 | 10,315 | 2,738 |
| Bush bean | 12,681 | 3,207 | 848 | 7 | 290 | 1,375 | 5,568 | 2,108 | 9,565 | 1,770 | 144 |
| Small red bean | - | 21 | - | - | - | - | - | - | - | - | - |
| Climbing bean | 684 | 3,322 | 4,755 | 3,587 | 5,351 | 5,806 | 2,000 | 2,696 | 2,875 | 8,545 | 2,593 |
| Pea | 612 | 325 | 384 | 129 | 1,731 | 683 | 104 | 19 | 259 | 562 | 154 |
| Groundnut | 1,225 | 70 | - | - | - | - | 30 | 474 | 139 | 63 | - |
| Soybean | 1,615 | 419 | 927 | - | 28 | 869 | 221 | 1,647 | 646 | 877 | 10 |
| Vegetables and Fruits | 1,151 | 686 | 690 | 609 | 843 | 692 | 678 | 469 | 509 | 816 | 898 |
| Vegetables | 990 | 580 | 387 | 582 | 696 | 514 | 536 | 367 | 499 | 385 | 728 |
| Fruits | 160 | 106 | 303 | 27 | 147 | 178 | 142 | 102 | 10 | 430 | 170 |
| Folder crops | 320 | 159 | 261 | 25 | 37 | 383 | 103 | 400 | 204 | 591 | 151 |
| Other crops | - | 461 | 781 | 765 | 1,994 | 67 | 1,012 | 1,005 | 325 | 317 | 1,525 |
| Total | 33,505 | 24,815 | 25,709 | 14,760 | 24,504 | 28,024 | 23,294 | 26,165 | 26,748 | 36,891 | 22,142 |

Source: NISR, SAS 2018, Season A

Appendix 4: Season A 2018_Harvested area by crop type and district (Ha) cont'd

| Crop/District | Burera | Gicumbi | Rwamagana | Nyagatare | Gatsibo | Kayanza | Kirehe | Ngoma | Bugesera | National |
|-------------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Cereals | 7,986 | 6,381 | 10,778 | 46,142 | 25,630 | 18,260 | 20,424 | 18,974 | 14,972 | 272,352 |
| Maize | 6,782 | 5,705 | 10,292 | 30,806 | 21,179 | 14,292 | 18,081 | 17,961 | 8,895 | 218,179 |
| Sorghum | 1,109 | 471 | - | 12,010 | 1,937 | 2,434 | 1,001 | - | 4,438 | 27,151 |
| Paddy rice | - | - | 300 | 2,635 | 1,358 | 768 | 938 | 777 | 1,421 | 16,938 |
| Wheat | 95 | 136 | - | 58 | 889 | 63 | - | - | - | 4,490 |
| Other Cereals | - | 69 | 187 | 633 | 267 | 702 | 404 | 236 | 217 | 5,594 |
| Tubers and Roots | 7,567 | 11,449 | 4,581 | 4,180 | 3,932 | 5,999 | 4,170 | 4,378 | 6,461 | 185,600 |
| Cassava | 25 | 296 | 1,419 | 1,004 | 599 | 2,556 | 1,170 | 1,593 | 1,727 | 35,897 |
| Sweet potato | 2,488 | 6,152 | 1,535 | 1,513 | 2,160 | 1,543 | 1,943 | 2,063 | 3,855 | 87,456 |
| Irish potato | 4,966 | 4,863 | 1,348 | 1,480 | 1,018 | 1,671 | 963 | 595 | 172 | 50,836 |
| Taro | 88 | 137 | 280 | 182 | 154 | 207 | 93 | 126 | 492 | 10,992 |
| Yam | - | - | - | - | - | 22 | - | - | 215 | 419 |
| Banana | 662 | 3,204 | 2,533 | 2,131 | 4,691 | 3,467 | 3,752 | 3,281 | 4,613 | 61,976 |
| Cooking Banana | 211 | 1,376 | 1,793 | 1,499 | 2,038 | 2,624 | 2,547 | 2,693 | 1,664 | 21,404 |
| Dessert banana | 59 | 741 | 182 | 22 | 556 | 344 | 21 | 116 | 203 | 5,176 |
| Banana for beer | 392 | 1,087 | 558 | 610 | 2,098 | 499 | 1,184 | 472 | 2,746 | 35,396 |

Rwanda Seasonal Agricultural Survey 2107/2018

| Legumes and Pulses | 11,727 | 20,700 | 12,385 | 18,998 | 18,023 | 20,427 | 23,043 | 11,812 | 15,514 | 346,824 |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Beans | 9,710 | 17,874 | 11,060 | 13,769 | 16,094 | 18,457 | 20,324 | 9,881 | 11,272 | 287,218 |
| Bush bean | 1,270 | 6,663 | 10,708 | 12,693 | 14,452 | 18,235 | 19,138 | 9,731 | 11,081 | 202,499 |
| Small red bean | - | - | 57 | - | - | 14 | - | - | - | 498 |
| Climbing bean | 8,440 | 11,211 | 294 | 1,076 | 1,642 | 208 | 1,187 | 151 | 191 | 84,222 |
| Pea | 1,968 | 2,117 | 148 | 601 | 141 | 345 | 382 | 314 | 4 | 15,121 |
| Groundnut | - | 590 | 842 | 3,965 | 1,330 | 1,339 | 1,514 | 1,321 | 3,607 | 20,474 |
| Soybean | 50 | 119 | 335 | 663 | 458 | 285 | 823 | 295 | 631 | 24,011 |
| Vegetables and Fruits | 377 | 995 | 1,464 | 392 | 270 | 527 | 144 | 995 | 683 | 17,911 |
| Vegetables | 377 | 903 | 734 | 349 | 249 | 522 | 97 | 284 | 403 | 13,647 |
| Fruits | - | 92 | 730 | 44 | 21 | 5 | 46 | 711 | 280 | 4,264 |
| Folder crops | 354 | 117 | 902 | 97 | 91 | 104 | 31 | 140 | 74 | 7,541 |
| Other crops | 464 | 263 | 511 | 235 | 15 | 148 | 47 | 1 | 53 | 11,327 |
| Total | 29,138 | 43,110 | 33,155 | 72,175 | 52,653 | 48,932 | 51,611 | 39,582 | 42,369 | 903,530 |

Source: NISR, SAS 2018, Season A

Appendix 5: Season B 2018_Harvested area by crop type and district (Ha)

| Crop/District | Nyarugenge | Gasabo | Kicukiro | Nyanza | Gisagara | Nyaruguru | Huye | Nyamagabe | Ruhango | Muhanga |
|------------------------------|-------------------|---------------|-----------------|---------------|-----------------|------------------|---------------|------------------|----------------|----------------|
| Cereals | 831 | 5,473 | 1,367 | 8,436 | 9,451 | 3,286 | 7,803 | 5,264 | 4,952 | 1,126 |
| Maize | 286 | 1,496 | 391 | 1,724 | 2,599 | 277 | 875 | 650 | 1,390 | 577 |
| Sorghum | 546 | 3,813 | 712 | 6,090 | 2,912 | 2,678 | 5,461 | 3,869 | 2,534 | 225 |
| Paddy rice | - | 150 | 262 | 576 | 3,384 | - | 1,337 | - | 922 | 305 |
| Wheat | - | - | - | - | - | 271 | - | 580 | - | - |
| Other cereals | - | 14 | 2 | 46 | 556 | 60 | 131 | 165 | 106 | 19 |
| Tubers and Roots | 536 | 3,547 | 510 | 6,099 | 6,098 | 6,187 | 3,936 | 8,227 | 11,208 | 9,580 |
| Cassava | 119 | 815 | 62 | 1,845 | 2,869 | 747 | 754 | 1,523 | 6,280 | 2,247 |
| Sweet potato | 270 | 1,406 | 258 | 3,070 | 2,348 | 3,265 | 2,065 | 3,290 | 3,785 | 5,086 |
| Irish potato | 18 | 1,093 | 46 | 736 | 496 | 1,341 | 860 | 2,715 | 334 | 314 |
| Yams & Taro | 129 | 233 | 143 | 448 | 385 | 834 | 258 | 700 | 808 | 1,933 |
| Banana | 549 | 1,018 | 573 | 1,188 | 1,358 | 281 | 537 | 1,086 | 1,308 | 6,879 |
| Cooking banana | 65 | 307 | 177 | 386 | 154 | 88 | 47 | 92 | 50 | 330 |
| Dessert banana | 41 | 288 | 147 | 429 | 266 | 78 | 179 | 183 | 152 | 385 |
| Banana for beer | 443 | 424 | 249 | 374 | 938 | 115 | 311 | 811 | 1,106 | 6,164 |
| Legumes and Pulses | 1,247 | 5,499 | 1,266 | 12,702 | 14,706 | 5,885 | 7,750 | 7,194 | 15,805 | 11,528 |
| Beans | 1,043 | 4,841 | 1,129 | 9,473 | 11,216 | 4,455 | 5,699 | 5,042 | 10,873 | 7,522 |
| Bush bean | 1,008 | 4,755 | 1,103 | 8,052 | 9,810 | 1,032 | 3,400 | 1,125 | 8,302 | 4,983 |
| Climbing bean | 35 | 86 | 26 | 1,421 | 1,406 | 3,423 | 2,299 | 3,917 | 2,571 | 2,539 |
| Pea | 4 | 69 | 1 | 263 | 138 | 398 | 225 | 1,167 | 154 | 314 |
| Groundnut | 54 | 233 | 79 | 1,376 | 858 | - | 160 | - | 1,275 | 25 |
| Soybean | 146 | 356 | 57 | 1,590 | 2,493 | 1,032 | 1,665 | 985 | 3,504 | 3,668 |
| Vegetables and Fruits | 196 | 358 | 153 | 634 | 220 | 283 | 210 | 642 | 655 | 189 |
| vegetables | 187 | 357 | 152 | 634 | 154 | 283 | 210 | 606 | 298 | 189 |
| Fruits | 9 | 1 | 1 | - | 66 | - | - | 36 | 357 | - |
| Folder crops | 364 | 1,120 | 124 | 371 | 136 | 639 | - | 253 | 267 | 375 |
| Other crops | 635 | 453 | 4 | 1,896 | 1,463 | 806 | 628 | 17 | 1,157 | 887 |
| Developed land | 4,358 | 17,467 | 3,996 | 31,326 | 33,432 | 17,367 | 20,864 | 22,684 | 35,352 | 30,564 |

Source: NISR, SAS 2018, Season B

Appendix 5: Season B 2018_Harvested area by crop type and district (Ha) cont'd

| Crop/District | Kamonyi | Karongi | Rutsiro | Rubavu | Nyabihu | Ngororero | Rusizi | Nyamasheke | Rulindo | Gakenke | Musanze |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Cereals | 6,954 | 3,210 | 2,345 | 2,377 | 3,183 | 2,549 | 2,172 | 1,062 | 3,568 | 1,377 | 2,149 |
| Maize | 1,911 | 517 | 2,090 | 1,146 | 2,091 | 1,133 | 699 | 634 | 798 | 1,056 | 1,456 |
| Sorghum | 4,862 | 2,397 | 7 | 1,198 | - | - | 12 | 33 | 2,666 | 202 | - |
| Paddy rice | 181 | - | - | - | - | - | 1,461 | 396 | - | - | - |
| Wheat | - | 156 | 249 | 34 | 1,092 | 1,416 | - | - | 104 | 119 | 694 |
| Other cereals | - | 140 | - | - | - | - | - | - | - | - | - |
| Tubers and Roots | 9,780 | 8,210 | 7,549 | 7,085 | 10,622 | 11,229 | 11,630 | 11,174 | 5,292 | 11,147 | 6,299 |
| Cassava | 3,256 | 2,310 | 1,195 | 7 | 263 | 2,660 | 8,978 | 5,562 | 524 | 1,029 | 75 |
| Sweet potato | 4,411 | 4,044 | 1,815 | 490 | 1,904 | 4,634 | 2,050 | 4,682 | 3,504 | 6,474 | 1,004 |
| Irish potato | 1,020 | 810 | 3,794 | 6,522 | 8,296 | 2,533 | 84 | 169 | 947 | 1,685 | 5,105 |
| Yams & Taro | 1,092 | 1,046 | 745 | 66 | 159 | 1,402 | 518 | 762 | 317 | 1,959 | 115 |
| Banana | 2,730 | 2,578 | 1,436 | 184 | 313 | 3,076 | 822 | 1,284 | 1,680 | 3,960 | 215 |
| Cooking banana | 78 | 124 | 143 | 142 | 64 | 75 | 268 | 190 | 189 | 333 | 40 |
| Dessert banana | 360 | 203 | 328 | 23 | 66 | 274 | 21 | 17 | 359 | 706 | 37 |
| Banana for beer | 2,293 | 2,252 | 965 | 19 | 184 | 2,727 | 532 | 1,077 | 1,131 | 2,922 | 138 |
| Legumes and Pulses | 12,676 | 10,289 | 8,641 | 2,892 | 2,585 | 5,975 | 8,471 | 8,053 | 11,478 | 12,463 | 6,379 |
| Beans | 9,056 | 8,486 | 6,026 | 2,612 | 2,003 | 3,910 | 7,894 | 5,205 | 10,065 | 11,817 | 6,155 |
| Bush bean | 8,383 | 2,960 | 1,213 | 31 | 9 | 612 | 5,813 | 1,863 | 5,309 | 887 | 230 |
| Climbing bean | 673 | 5,526 | 4,814 | 2,580 | 1,994 | 3,298 | 2,081 | 3,343 | 4,755 | 10,930 | 5,925 |
| Pea | 324 | 430 | 859 | 281 | 529 | 429 | 48 | 90 | 322 | 242 | 163 |
| Groundnut | 1,249 | 162 | - | - | - | - | 52 | 798 | 237 | 1 | - |
| Soybean | 2,047 | 1,211 | 1,756 | - | 53 | 1,635 | 477 | 1,961 | 854 | 402 | 61 |
| Vegetables and Fruits | 670 | 309 | 995 | 1,179 | 317 | 884 | 718 | 608 | 420 | 835 | 1,095 |
| vegetables | 385 | 281 | 532 | 1,135 | 257 | 686 | 255 | 464 | 394 | 592 | 703 |
| Fruits | 285 | 28 | 463 | 44 | 60 | 198 | 463 | 144 | 26 | 243 | 392 |
| Folder crops | 265 | 329 | 406 | 192 | 146 | 331 | 142 | 471 | 148 | 454 | 300 |
| Other crops | 1,754 | 151 | 2,311 | 427 | 1,072 | 575 | 1,531 | 2,639 | 1,009 | 1,014 | 366 |
| Developed land | 34,829 | 25,075 | 23,684 | 14,337 | 18,238 | 24,618 | 25,487 | 25,292 | 23,594 | 31,250 | 16,804 |

Source: NISR, SAS 2018, Season B

Appendix 5: Season B 2018_Harvested area by crop type and district (Ha) cont'd

| Crop/District | Burera | Gicumbi | Rwamagana | Nyagatare | Gatsibo | Kayanza | Kirehe | Ngoma | Bugesera | National |
|---------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Cereals | 9,093 | 13,041 | 11,983 | 28,099 | 18,214 | 21,090 | 17,146 | 9,744 | 13,869 | 221,214 |
| Maize | 2,302 | 3,092 | 2,738 | 16,685 | 8,687 | 6,788 | 3,678 | 3,491 | 6,896 | 78,151 |
| Sorghum | 4,687 | 9,812 | 8,890 | 9,202 | 7,578 | 13,351 | 12,192 | 4,951 | 6,109 | 116,986 |
| Paddy rice | - | - | 342 | 2,072 | 1,097 | 538 | 1,031 | 1,015 | 774 | 15,842 |
| Wheat | 2,104 | 137 | - | - | 778 | 1 | - | - | - | 7,735 |
| Other cereals | - | - | 14 | 140 | 73 | 411 | 245 | 287 | 91 | 2,500 |
| Tubers and Roots | 7,786 | 9,508 | 6,168 | 4,620 | 7,203 | 7,445 | 4,606 | 7,979 | 4,868 | 216,130 |
| Cassava | - | 465 | 1,062 | 916 | 2,241 | 1,500 | 1,084 | 3,359 | 2,466 | 56,216 |
| Sweet potato | 2,450 | 3,777 | 2,390 | 1,813 | 1,835 | 2,595 | 826 | 2,955 | 1,489 | 79,983 |
| Irish potato | 5,218 | 5,054 | 1,510 | 1,746 | 2,385 | 2,871 | 1,745 | 1,180 | 16 | 60,644 |
| Yams & Taro | 119 | 212 | 1,206 | 145 | 742 | 480 | 951 | 484 | 897 | 19,287 |
| Banana | 399 | 1,691 | 3,632 | 2,688 | 5,947 | 2,428 | 4,227 | 4,084 | 4,987 | 63,140 |
| Cooking banana | 148 | 590 | 2,365 | 1,958 | 2,645 | 1,641 | 3,117 | 3,240 | 724 | 19,767 |
| Dessert banana | 84 | 419 | 392 | 210 | 679 | 193 | 44 | 244 | 550 | 7,355 |
| Banana for beer | 167 | 683 | 874 | 520 | 2,623 | 594 | 1,067 | 600 | 3,713 | 36,018 |
| Legumes and Pulses | 11,836 | 11,813 | 8,190 | 34,016 | 20,004 | 15,190 | 20,640 | 16,681 | 19,280 | 331,131 |
| Beans | 10,698 | 10,430 | 7,075 | 28,877 | 15,238 | 13,018 | 18,424 | 15,144 | 15,680 | 269,105 |

Rwanda Seasonal Agricultural Survey 2107/2018

| | | | | | | | | | | |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Bush bean | 506 | 2,848 | 6,738 | 28,029 | 14,261 | 12,585 | 11,710 | 14,277 | 15,493 | 177,327 |
| Climbing bean | 10,191 | 7,582 | 337 | 848 | 978 | 433 | 6,714 | 867 | 187 | 91,778 |
| Pea | 1,050 | 1,053 | 234 | 238 | 565 | 878 | 92 | 34 | 20 | 10,612 |
| Groundnut | - | 325 | 755 | 3,721 | 3,895 | 943 | 1,347 | 589 | 2,849 | 20,983 |
| Soybean | 88 | 6 | 125 | 1,180 | 306 | 351 | 778 | 913 | 732 | 30,431 |
| Vegetables and Fruits | 613 | 744 | 1,423 | 528 | 333 | 422 | 140 | 842 | 388 | 17,002 |
| vegetables | 541 | 553 | 941 | 471 | 287 | 377 | 118 | 129 | 308 | 12,480 |
| Fruits | 72 | 191 | 483 | 57 | 46 | 44 | 22 | 712 | 79 | 4,522 |
| Folder crops | 133 | 117 | 1,158 | 23 | 94 | 49 | 103 | 188 | 340 | 9,041 |
| Other crops | 350 | 891 | 1,610 | 673 | 2,024 | 681 | 1,357 | 1,036 | 59 | 29,474 |
| Developed land | 30,211 | 37,804 | 34,164 | 70,645 | 53,818 | 47,306 | 48,220 | 40,553 | 43,792 | 887,131 |

Source: NISR, SAS 2018, Season B

Appendix 6: Season A 2018_Production of main crops by District (MT)

| Crop/District | Nyarugenge | Gasabo | Kicukiro | Nyanza | Gisagara | Nyaruguru | Huye | Nyamagabe | Ruhango | Muhanga |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|
| Cereals | 374 | 5,189 | 1,571 | 10,210 | 25,527 | 4,919 | 10,503 | 2,909 | 4,039 | 3,327 |
| Maize | 374 | 4,851 | 1,570 | 7,875 | 16,057 | 4,613 | 4,305 | 2,909 | 1,898 | 2,064 |
| Sorghum | - | - | - | 1,660 | 242 | 95 | 17 | - | - | - |
| Paddy rice | - | 284 | - | 474 | 8,905 | - | 6,033 | - | 2,032 | 356 |
| Wheat | - | - | - | - | - | 60 | - | - | - | - |
| Other Cereals | 1 | 54 | 0 | 201 | 324 | 151 | 148 | - | 108 | 908 |
| Tubers and Roots | 3,456 | 17,535 | 4,140 | 35,068 | 17,419 | 63,313 | 24,687 | 69,094 | 140,266 | 47,115 |
| Cassava | 1,487 | 4,498 | 378 | 6,628 | 1,399 | 2,036 | 5,299 | 6,895 | 120,797 | 8,030 |
| Sweet potatoes | 1,691 | 11,056 | 3,546 | 23,340 | 14,564 | 50,540 | 16,246 | 47,255 | 15,115 | 31,445 |
| Irish potatoes | 66 | 1,884 | 76 | 2,234 | 1,128 | 6,261 | 1,669 | 13,232 | 1,529 | 413 |
| Yams & Taro | 212 | 97 | 140 | 2,866 | 328 | 4,477 | 1,473 | 1,712 | 2,825 | 7,227 |
| Banana | 6,529 | 8,276 | 6,467 | 13,665 | 12,002 | 3,620 | 13,771 | 19,060 | 21,684 | 72,645 |
| Cooking Banana | 2,027 | 3,421 | 2,820 | 2,394 | 2,034 | 1,182 | 2,456 | 2,824 | 2,098 | 9,153 |
| Dessert banana | 335 | 3,136 | 1,151 | 3,924 | 1,714 | 384 | 2,016 | 1,272 | 1,391 | 11,668 |
| Banana for beer | 4,167 | 1,720 | 2,495 | 7,347 | 8,254 | 2,053 | 9,299 | 14,965 | 18,195 | 51,824 |
| Legumes and Pulses | 907 | 8,737 | 897 | 12,419 | 14,946 | 6,403 | 10,147 | 8,738 | 10,533 | 9,655 |
| Beans | 863 | 7,912 | 721 | 11,067 | 13,827 | 5,582 | 9,139 | 7,214 | 8,062 | 7,619 |
| Bush bean | 852 | 7,828 | 709 | 9,805 | 12,510 | 928 | 6,941 | 2,277 | 6,636 | 4,770 |
| Small red bean | - | 3 | - | 14 | 17 | - | 21 | 203 | - | - |
| Climbing bean | 11 | 83 | 11 | 1,262 | 1,317 | 4,653 | 2,198 | 4,937 | 1,426 | 2,850 |
| Peas | 1 | 115 | 4 | 357 | 91 | 149 | 306 | 1,162 | 242 | 124 |
| Ground nuts | 15 | 386 | 30 | 630 | 270 | - | 61 | - | 1,085 | 104 |
| Soya beans | 28 | 325 | 143 | 366 | 758 | 673 | 641 | 362 | 1,144 | 1,808 |
| Vegetables and Fruits | 3,407 | 5,172 | 2,596 | 695 | 10,478 | 2,160 | 10,616 | 6,382 | 2,082 | 4,392 |
| Vegetables | 3,056 | 4,909 | 1,906 | 695 | 10,428 | 2,160 | 7,415 | 6,382 | 1,573 | 4,388 |
| Fruits | 351 | 263 | 690 | - | 50 | - | 3,201 | - | 508 | 5 |
| Folder crops | 31,741 | 35,147 | 335 | 1,176 | 8,873 | 2,169 | 333 | 1,872 | 1,364 | 597 |
| Other crops | 9,334 | 630 | 119 | 1,753 | - | 1,056 | - | - | 287 | 957 |
| Total | 55,747 | 80,687 | 16,125 | 74,986 | 89,246 | 83,639 | 70,057 | 108,056 | 180,255 | 138,690 |

Source: NISR, SAS 2018, Season A

Appendix 6: Season B 2018_Production of main crops by District (MT) cont'd

| Crop/District | Kamonyi | Karongi | Rutsiro | Rubavu | Nyabihu | Ngororero | Rusizi | Nyamasheke | Rulindo | Gakenke | Musanze |
|------------------------------|----------------|----------------|----------------|---------------|----------------|----------------|---------------|----------------|---------------|----------------|---------------|
| Cereals | 7,416 | 5,738 | 10,298 | 5,426 | 4,948 | 6,707 | 15,260 | 5,713 | 9,479 | 16,082 | 16,802 |
| Maize | 6,555 | 5,732 | 9,852 | 5,394 | 4,092 | 6,111 | 7,946 | 3,627 | 9,355 | 15,903 | 9,378 |
| Sorghum | - | 6 | 246 | 32 | 282 | 241 | 32 | 142 | - | - | 4,112 |
| Paddy rice | 861 | - | - | - | - | - | 7,282 | 1,944 | - | - | - |
| Wheat | - | - | 192 | - | 575 | 351 | - | - | 120 | - | 3,312 |
| Other Cereals | - | - | 8 | - | - | 4 | - | - | 3 | 179 | - |
| Tubers and Roots | 76,483 | 71,182 | 58,880 | 69,641 | 125,550 | 58,390 | 38,671 | 132,428 | 30,750 | 57,468 | 53,570 |
| Cassava | 35,770 | 18,589 | 2,062 | 241 | 1,297 | 5,438 | 24,189 | 89,883 | 5,494 | 3,541 | 9 |
| Sweet potatoes | 33,145 | 36,891 | 22,874 | 2,942 | 18,833 | 34,974 | 10,357 | 39,893 | 20,333 | 37,771 | 8,559 |
| Irish potatoes | 1,163 | 5,323 | 31,429 | 66,183 | 104,582 | 11,221 | 202 | 99 | 4,137 | 11,974 | 44,005 |
| Yams & Taro | 6,406 | 10,379 | 2,515 | 275 | 838 | 6,757 | 3,923 | 2,552 | 785 | 4,182 | 997 |
| Banana | 40,349 | 29,562 | 37,995 | 1,736 | 4,658 | 32,259 | 14,593 | 14,228 | 29,864 | 82,010 | 3,908 |
| Cooking Banana | 7,568 | 3,405 | 7,623 | 1,541 | 2,158 | 2,978 | 6,623 | 4,027 | 5,569 | 20,681 | 349 |
| Dessert banana | 7,333 | 1,487 | 8,790 | 87 | 332 | 763 | 193 | 383 | 5,686 | 14,790 | 706 |
| Banana for beer | 25,448 | 24,670 | 21,582 | 108 | 2,168 | 28,517 | 7,777 | 9,818 | 18,609 | 46,538 | 2,853 |
| Legumes and Pulses | 13,172 | 6,362 | 5,998 | 3,759 | 7,317 | 6,234 | 6,427 | 5,840 | 10,361 | 9,207 | 2,805 |
| Beans | 11,413 | 5,812 | 5,244 | 3,682 | 6,566 | 5,492 | 6,197 | 4,582 | 9,906 | 8,435 | 2,708 |
| Bush bean | 10,894 | 2,356 | 634 | 23 | 171 | 767 | 4,643 | 1,686 | 6,708 | 874 | 170 |
| Small red bean | - | 15 | - | - | - | - | - | - | - | - | - |
| Climbing bean | 520 | 3,456 | 4,610 | 3,658 | 6,395 | 4,725 | 1,554 | 2,896 | 3,197 | 7,562 | 2,537 |
| Peas | 352 | 203 | 64 | 77 | 719 | 347 | 53 | 18 | 89 | 422 | 89 |
| Ground nuts | 647 | 40 | - | - | - | - | 17 | 172 | 84 | 33 | - |
| Soya beans | 759 | 307 | 689 | - | 31 | 394 | 160 | 1,068 | 283 | 316 | 9 |
| Vegetables and Fruits | 13,252 | 8,682 | 6,150 | 6,179 | 10,205 | 4,898 | 11,964 | 5,053 | 7,163 | 8,372 | 6,916 |
| Vegetables | 12,354 | 7,045 | 5,271 | 6,016 | 9,506 | 4,183 | 6,598 | 4,807 | 7,133 | 3,652 | 6,468 |
| Fruits | 897 | 1,637 | 879 | 163 | 699 | 715 | 5,366 | 245 | 29 | 4,720 | 449 |
| Folder crops | 2,171 | 1,888 | 1,979 | 179 | 1,178 | 4,501 | 1,266 | 6,652 | 1,152 | 2,824 | 5,130 |
| Other crops | - | 748 | 4,142 | 4,141 | 801 | 224 | 1,514 | 3,018 | 485 | 4,134 | 1,318 |
| Total | 152,843 | 124,162 | 125,442 | 91,060 | 154,657 | 113,211 | 89,694 | 172,932 | 89,254 | 180,097 | 90,451 |

Source: NISR, SAS 2018, Season A

Appendix 6: Season B 2018_Production of main crops by District (MT) cont'd

| Crop/District | Burera | Gicumbi | Rwamagana | Nyagatare | Gatsibo | Kayanza | Kirehe | Ngoma | Bugesera | National |
|------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| Cereals | 11,501 | 12,105 | 16,972 | 76,024 | 49,308 | 26,309 | 26,167 | 26,016 | 20,276 | 437,116 |
| Maize | 9,467 | 11,005 | 15,889 | 50,793 | 39,852 | 20,181 | 21,438 | 23,020 | 10,561 | 332,670 |
| Sorghum | 1,993 | 986 | - | 16,371 | 2,307 | 2,420 | 882 | - | 4,514 | 36,581 |
| Paddy rice | - | - | 1,024 | 7,968 | 5,827 | 3,380 | 3,685 | 2,909 | 4,971 | 57,934 |
| Wheat | 42 | 69 | - | 56 | 1,135 | 39 | - | - | - | 5,950 |
| Other Cereals | - | 45 | 59 | 836 | 188 | 288 | 161 | 88 | 229 | 3,981 |
| Tubers and Roots | 69,368 | 113,583 | 41,282 | 29,470 | 34,566 | 47,023 | 26,631 | 40,240 | 60,919 | 1,658,188 |
| Cassava | 258 | 4,557 | 19,538 | 15,794 | 8,746 | 30,217 | 11,218 | 25,374 | 26,778 | 486,440 |
| Sweet potatoes | 20,320 | 62,802 | 10,735 | 8,145 | 16,705 | 9,672 | 11,206 | 10,914 | 29,714 | 661,583 |
| Irish potatoes | 48,525 | 45,332 | 9,249 | 4,660 | 8,363 | 6,528 | 4,031 | 3,610 | 403 | 439,512 |
| Yams & Taro | 265 | 893 | 1,761 | 871 | 752 | 605 | 176 | 341 | 4,024 | 70,653 |
| Banana | 8,385 | 57,425 | 47,591 | 42,050 | 75,076 | 72,294 | 54,924 | 55,865 | 70,193 | 952,684 |
| Cooking Banana | 3,661 | 25,528 | 37,926 | 32,543 | 37,759 | 52,166 | 43,141 | 48,681 | 31,707 | 406,044 |
| Dessert banana | 676 | 14,601 | 2,845 | 210 | 5,844 | 13,347 | 578 | 1,468 | 5,172 | 112,283 |
| Banana for beer | 4,047 | 17,296 | 6,820 | 9,298 | 31,473 | 6,781 | 11,204 | 5,717 | 33,314 | 434,356 |
| Legumes and Pulses | 12,710 | 22,768 | 13,001 | 13,478 | 17,541 | 10,751 | 15,537 | 8,063 | 10,178 | 284,891 |
| Beans | 11,414 | 20,728 | 12,395 | 10,088 | 16,692 | 9,574 | 13,869 | 6,986 | 7,402 | 251,189 |
| Bush bean | 1,309 | 7,329 | 11,999 | 9,381 | 15,190 | 9,330 | 13,058 | 6,902 | 7,330 | 164,011 |
| Small red bean | - | - | 39 | - | - | 1 | - | - | - | 313 |
| Climbing bean | 10,105 | 13,399 | 396 | 707 | 1,502 | 244 | 810 | 84 | 72 | 87,178 |
| Peas | 1,285 | 1,699 | 90 | 432 | 74 | 167 | 159 | 107 | 3 | 9,001 |
| Ground nuts | - | 341 | 418 | 2,553 | 646 | 928 | 760 | 733 | 2,594 | 12,546 |
| Soya beans | 11 | - | 98 | 405 | 129 | 82 | 750 | 236 | 180 | 12,156 |
| Vegetables and Fruits | 10,694 | 8,685 | 12,670 | 4,717 | 3,210 | 6,272 | 1,059 | 1,145 | 13,555 | 198,821 |
| Vegetables | 10,694 | 8,575 | 7,153 | 4,567 | 3,149 | 6,207 | 954 | 380 | 5,311 | 162,936 |
| Fruits | - | 110 | 5,517 | 150 | 61 | 65 | 106 | 765 | 8,244 | 35,884 |
| Folder crops | 1,287 | 2,115 | 14,404 | 1,413 | 1,840 | 116 | 285 | 2,028 | 3,738 | 139,753 |
| Other crops | 14,289 | 1,648 | 3,636 | 2,388 | 410 | 228 | 38 | - | 0 | 57,299 |
| Total | 128,234 | 218,329 | 149,556 | 169,541 | 181,951 | 162,992 | 124,642 | 133,357 | 178,860 | 3,728,752 |

Source: NISR, SAS 2018, Season B

Appendix 7: Season B 2018_Production of main crops by District (MT)

| Crop/District | Nyarugenge | Gasabo | Kicukiro | Nyanza | Gisagara | Nyaruguru | Huye | Nyamagabe | Ruhango | Muhanga |
|---------------------------|--------------|---------------|--------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|
| Cereals | 867 | 7,243 | 2,273 | 10,486 | 11,963 | 3,365 | 10,748 | 4,767 | 5,665 | 1,885 |
| Maize | 275 | 1,797 | 504 | 2,495 | 1,922 | 453 | 644 | 966 | 962 | 458 |
| Sorghum | 591 | 4,929 | 708 | 5,581 | 2,157 | 2,655 | 6,326 | 3,282 | 2,638 | 268 |
| Paddy rice | - | 500 | 1,060 | 2,341 | 7,444 | - | 3,734 | - | 2,019 | 1,158 |
| Wheat | - | - | - | - | - | 197 | - | 427 | - | - |
| Other Cereals | - | 17 | - | 69 | 439 | 59 | 44 | 92 | 47 | - |
| Tubers and Roots | 3,221 | 22,910 | 3,565 | 50,352 | 46,392 | 53,902 | 31,455 | 63,155 | 123,486 | 66,993 |
| Cassava | 1,387 | 8,332 | 1,017 | 20,325 | 28,613 | 12,567 | 13,039 | 18,856 | 93,146 | 27,029 |
| Sweet potatoes | 1,094 | 9,759 | 1,659 | 25,185 | 15,001 | 27,194 | 14,974 | 20,700 | 25,993 | 32,577 |
| Irish potatoes | 45 | 4,011 | 234 | 1,408 | 1,077 | 7,423 | 2,416 | 19,148 | 467 | 632 |
| Yams & Taro | 695 | 809 | 655 | 3,435 | 1,700 | 6,718 | 1,026 | 4,452 | 3,881 | 6,755 |
| Banana | 5,884 | 16,373 | 7,593 | 14,009 | 18,204 | 4,020 | 5,779 | 10,926 | 14,759 | 59,290 |
| Cooking Banana | 1,385 | 6,388 | 2,708 | 4,472 | 1,841 | 1,516 | 356 | 1,308 | 950 | 4,058 |
| Dessert banana | 572 | 5,321 | 2,452 | 5,755 | 4,107 | 1,406 | 2,504 | 2,373 | 2,372 | 4,152 |
| Banana for beer | 3,927 | 4,665 | 2,433 | 3,782 | 12,256 | 1,098 | 2,919 | 7,245 | 11,437 | 51,080 |
| Legumes and Pulses | 854 | 3,681 | 1,199 | 8,612 | 11,829 | 4,000 | 4,941 | 5,712 | 7,921 | 5,399 |
| Beans | 763 | 3,308 | 1,126 | 7,298 | 10,724 | 3,370 | 4,281 | 4,440 | 6,292 | 4,344 |

Rwanda Seasonal Agricultural Survey 2107/2018

| | | | | | | | | | | |
|------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|
| Bush bean | 741 | 3,210 | 1,102 | 5,951 | 9,133 | 416 | 1,888 | 1,020 | 4,740 | 2,373 |
| Climbing bean | 22 | 98 | 24 | 1,347 | 1,591 | 2,954 | 2,393 | 3,420 | 1,552 | 1,970 |
| Peas | 4 | 63 | - | 117 | 75 | 286 | 79 | 991 | 50 | 140 |
| Ground nuts | 34 | 79 | 41 | 790 | 163 | - | 120 | - | 675 | 3 |
| Soya beans | 54 | 231 | 32 | 407 | 867 | 345 | 460 | 281 | 904 | 913 |
| Vegetables and Fruits | 1,171 | 3,661 | 1,087 | 7,630 | 1,901 | 1,483 | 3,737 | 8,313 | 2,772 | 1,423 |
| Vegetables | 1,148 | 3,658 | 1,086 | 7,630 | 1,855 | 1,483 | 3,737 | 8,285 | 2,076 | 1,423 |
| Fruits | 23 | 3 | 1 | - | 46 | - | - | 29 | 695 | - |
| Folder crops | 5,927 | 19,428 | 833 | 4,128 | 4,129 | 13,637 | - | 2,509 | 8,009 | 9,164 |
| Other crops | 102 | 1,593 | 23 | 4,102 | 1,449 | 934 | 1,149 | - | 6,641 | 1,169 |
| Total | 18,027 | 74,888 | 16,572 | 99,319 | 95,867 | 81,342 | 57,808 | 95,382 | 169,254 | 145,322 |

Source: NISR, SAS 2018, Season B

Appendix 7: Season B 2018_Production of main crops by District (MT) cont'd

| Crop/District | Kamonyi | Karongi | Rutsiro | Rubavu | Nyabihu | Ngororero | Rusizi | Nyamasheke | Rulindo | Gakenke | Musanze |
|------------------------------|----------------|----------------|----------------|---------------|----------------|---------------|----------------|----------------|---------------|----------------|---------------|
| Cereals | 7,797 | 2,872 | 2,742 | 4,456 | 3,118 | 1,526 | 8,561 | 1,955 | 2,709 | 1,145 | 2,299 |
| Maize | 1,634 | 468 | 2,599 | 1,354 | 1,706 | 892 | 640 | 315 | 440 | 834 | 1,501 |
| Sorghum | 5,854 | 2,269 | - | 3,102 | - | - | 4 | 25 | 2,186 | 104 | - |
| Paddy rice | 310 | - | - | - | - | - | 7,917 | 1,616 | - | - | - |
| Wheat | - | 135 | 144 | - | 1,412 | 633 | - | - | 83 | 207 | 797 |
| Other Cereals | - | - | - | - | - | - | - | - | - | - | - |
| Tubers and Roots | 75,793 | 68,671 | 44,350 | 59,026 | 94,538 | 51,100 | 70,952 | 74,414 | 34,523 | 73,019 | 56,599 |
| Cassava | 44,915 | 25,298 | 14,259 | 89 | 2,604 | 21,482 | 55,484 | 42,437 | 7,779 | 18,879 | 593 |
| Sweet potatoes | 21,722 | 29,171 | 9,400 | 2,668 | 9,541 | 17,383 | 13,162 | 28,824 | 19,369 | 37,203 | 5,655 |
| Irish potatoes | 3,077 | 7,412 | 16,882 | 55,629 | 81,690 | 5,772 | 112 | 428 | 5,604 | 6,876 | 50,085 |
| Yams & Taro | 6,080 | 6,791 | 3,810 | 640 | 703 | 6,463 | 2,194 | 2,726 | 1,772 | 10,059 | 267 |
| Banana | 31,413 | 27,707 | 17,626 | 2,860 | 2,809 | 25,068 | 11,509 | 13,237 | 21,149 | 36,682 | 3,280 |
| Cooking Banana | 1,511 | 1,440 | 2,092 | 2,381 | 804 | 1,282 | 4,901 | 2,895 | 2,929 | 4,655 | 1,054 |
| Dessert banana | 5,529 | 3,495 | 4,887 | 201 | 809 | 3,898 | 271 | 220 | 6,532 | 10,565 | 728 |
| Banana for beer | 24,373 | 22,771 | 10,647 | 278 | 1,196 | 19,888 | 6,338 | 10,122 | 11,687 | 21,462 | 1,498 |
| Legumes and Pulses | 6,560 | 7,547 | 5,582 | 2,558 | 2,013 | 4,456 | 5,280 | 6,025 | 6,969 | 11,287 | 7,614 |
| Beans | 5,315 | 6,986 | 4,648 | 2,215 | 1,786 | 3,541 | 5,011 | 4,846 | 6,481 | 11,025 | 7,495 |
| Bush bean | 4,809 | 1,642 | 749 | 0 | 4 | 304 | 3,592 | 1,341 | 2,189 | 497 | 168 |
| Climbing bean | 507 | 5,344 | 3,899 | 2,215 | 1,783 | 3,237 | 1,419 | 3,506 | 4,292 | 10,528 | 7,326 |
| Peas | 153 | 137 | 252 | 343 | 208 | 274 | - | 37 | 136 | 123 | 77 |
| Ground nuts | 450 | 19 | - | - | - | - | 16 | 291 | 91 | 1 | - |
| Soya beans | 642 | 405 | 682 | - | 18 | 641 | 254 | 851 | 261 | 139 | 42 |
| Vegetables and Fruits | 6,291 | 4,955 | 6,116 | 15,642 | 3,050 | 8,092 | 5,583 | 4,934 | 8,514 | 5,744 | 5,978 |
| Vegetables | 4,320 | 4,955 | 4,266 | 15,426 | 2,769 | 7,490 | 2,803 | 4,332 | 8,468 | 4,992 | 4,112 |
| Fruits | 1,971 | - | 1,850 | 216 | 282 | 602 | 2,781 | 602 | 46 | 752 | 1,866 |
| Folder crops | 4,196 | 3,436 | 5,171 | 1,542 | 985 | 3,878 | 993 | 8,087 | - | 5,354 | 2,195 |
| Other crops | 6,382 | 324 | 24,950 | 3,449 | 523 | 3,858 | 3,057 | 3,266 | 1,467 | 7,693 | 106 |
| Total | 138,433 | 115,512 | 106,538 | 89,533 | 107,037 | 97,978 | 105,937 | 111,919 | 75,330 | 140,925 | 78,070 |

Source: NISR, SAS 2018, Season B

Appendix 7: Season B 2018_Production of main crops by District (MT) cont'd

| Crop/District | Burera | Gicumbi | Rwamagana | Nyagatare | Gatsibo | Kayanza | Kirehe | Ngoma | Bugesera | National |
|------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| Cereals | 10,730 | 12,564 | 13,008 | 45,007 | 25,185 | 18,849 | 19,302 | 9,209 | 22,034 | 274,330 |
| Maize | 2,515 | 2,909 | 2,166 | 22,787 | 12,249 | 5,546 | 4,852 | 1,947 | 13,703 | 91,534 |
| Sorghum | 5,508 | 9,608 | 9,464 | 11,012 | 7,940 | 11,194 | 11,229 | 4,060 | 5,416 | 118,111 |
| Paddy rice | - | - | 1,375 | 11,199 | 4,210 | 1,955 | 3,129 | 3,104 | 2,874 | 55,946 |
| Wheat | 2,707 | 46 | - | - | 735 | 3 | - | - | - | 7,525 |
| Other Cereals | - | - | 4 | 9 | 51 | 150 | 93 | 99 | 41 | 1,214 |
| Tubers and Roots | 65,099 | 78,595 | 38,030 | 33,273 | 49,999 | 49,974 | 29,499 | 66,695 | 53,361 | 1,632,944 |
| Cassava | - | 7,344 | 13,724 | 14,174 | 32,205 | 19,049 | 18,533 | 39,805 | 37,795 | 640,759 |
| Sweet potatoes | 15,405 | 26,252 | 14,728 | 10,555 | 8,466 | 20,911 | 2,983 | 21,440 | 9,817 | 498,790 |
| Irish potatoes | 48,363 | 43,790 | 3,876 | 7,780 | 6,955 | 7,247 | 4,841 | 2,786 | - | 396,064 |
| Yams & Taro | 1,332 | 1,209 | 5,700 | 764 | 2,373 | 2,767 | 3,143 | 2,664 | 5,750 | 97,331 |
| Banana | 8,365 | 30,280 | 69,555 | 48,000 | 83,153 | 37,331 | 78,912 | 66,855 | 44,386 | 817,013 |
| Cooking Banana | 4,179 | 12,338 | 52,681 | 40,280 | 38,649 | 26,376 | 62,694 | 54,951 | 10,577 | 353,652 |
| Dessert banana | 2,109 | 9,031 | 6,905 | 2,303 | 12,210 | 4,295 | 661 | 3,470 | 7,923 | 117,057 |
| Banana for beer | 2,077 | 8,911 | 9,968 | 5,418 | 32,294 | 6,660 | 15,556 | 8,433 | 25,887 | 346,304 |
| Legumes and Pulses | 14,032 | 9,974 | 5,723 | 38,283 | 16,386 | 10,813 | 15,249 | 12,033 | 16,858 | 259,390 |
| Beans | 13,137 | 9,391 | 5,366 | 35,256 | 13,905 | 9,883 | 14,427 | 11,439 | 15,443 | 233,540 |
| Bush bean | 461 | 1,791 | 4,683 | 33,849 | 12,945 | 9,462 | 7,352 | 10,349 | 15,318 | 142,077 |
| Climbing bean | 12,677 | 7,599 | 683 | 1,407 | 960 | 421 | 7,074 | 1,090 | 125 | 91,463 |
| Peas | 849 | 412 | 81 | 120 | 157 | 413 | 55 | 28 | 29 | 5,689 |
| Ground nuts | - | 171 | 237 | 2,226 | 2,130 | 436 | 446 | 243 | 1,070 | 9,734 |
| Soya beans | 46 | - | 40 | 681 | 195 | 81 | 321 | 323 | 316 | 10,427 |
| Vegetables and Fruits | 8,795 | 7,579 | 16,719 | 8,546 | 2,666 | 1,224 | 1,742 | 5,360 | 2,275 | 162,983 |
| Vegetables | 8,479 | 7,295 | 15,291 | 7,984 | 2,448 | 1,103 | 1,538 | 2,693 | 2,128 | 145,272 |
| Fruits | 317 | 285 | 1,428 | 562 | 218 | 121 | 204 | 2,667 | 146 | 17,711 |
| Folder crops | 1,868 | 568 | 23,995 | 42 | 443 | 15 | 119 | 1,991 | 5,182 | 137,823 |
| Other crops | 8,877 | 3,144 | 3,624 | 2,273 | 4,855 | 1,991 | 2,537 | 1,672 | 164 | 101,373 |
| Total | 117,766 | 142,705 | 170,653 | 175,424 | 182,687 | 120,196 | 147,359 | 163,815 | 144,260 | 3,385,856 |

Seasonal Agricultural Survey, Season B 2018

Appendix 8: Season C 2018_Production of main crops by District (MT)

| Crop/District | Nyarugenge | Gasabo | Kicukiro | Nyanza | Gisagara | Nyaruguru | Huye | Nyamagabe | Ruhango | Muhanga | Kamonyi |
|------------------------------|------------|--------------|----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Tubers and Roots | 203 | 298 | - | 837 | 1,885 | 3,774 | 1,516 | 2,893 | 1,869 | 1,145 | 662 |
| Sweet potatoes | 203 | 298 | - | 770 | 1,885 | 3,774 | 1,427 | 2,422 | 1,853 | 1,145 | 662 |
| Irish potatoes | - | - | - | 66 | - | - | 89 | 471 | 16 | - | - |
| Legumes and Pulses | 26 | - | - | 168 | 216 | 227 | 4 | 25 | 37 | 135 | 24 |
| Beans | 26 | - | - | 160 | 190 | 227 | 4 | - | 37 | 11 | 24 |
| Bush bean | 26 | - | - | 160 | 190 | 227 | 4 | - | 37 | 11 | 13 |
| Climbing bean | - | - | - | - | - | - | - | - | - | - | 11 |
| Peas | - | - | - | 6 | - | - | - | 25 | - | 1 | - |
| Soya beans | - | - | - | 1 | 26 | - | - | - | - | 122 | - |
| Vegetables and Fruits | 86 | 2,239 | - | 3,351 | 3,987 | 628 | 665 | 1,007 | 2,211 | 60 | 2,800 |
| Vegetables | 86 | 2,239 | - | 3,351 | 3,987 | 628 | 665 | 1,007 | 2,211 | 60 | 2,800 |
| Total | 315 | 2,537 | - | 4,356 | 6,087 | 4,630 | 2,185 | 3,925 | 4,116 | 1,339 | 3,487 |

| Crop/District | Karongi | Rutsiro | Rubavu | Nyabihu | Ngororero | Rusizi | Nyamasheke | Rulindo | Gakenke | Musanze | Burera | Gicumbi |
|------------------------------|------------|--------------|---------------|---------------|------------|--------------|------------|--------------|--------------|---------------|---------------|--------------|
| Tubers and Roots | 189 | 900 | 9,434 | 26,869 | 278 | 614 | 4 | 207 | 547 | 26,876 | 20,991 | 3,374 |
| Sweet potatoes | 189 | 29 | 400 | 823 | 278 | 306 | 4 | 110 | 481 | 1,392 | 5,922 | 544 |
| Irish potatoes | - | 871 | 9,033 | 26,046 | - | 308 | - | 97 | 66 | 25,484 | 15,069 | 2,831 |
| Legumes and Pulses | - | 11 | - | 5 | 65 | 15 | - | 8 | - | 9 | 96 | - |
| Beans | - | - | - | - | 3 | 15 | - | 8 | - | 5 | - | - |
| Bush bean | - | - | - | - | 3 | 15 | - | 8 | - | 2 | - | - |
| Climbing bean | - | - | - | - | - | - | - | - | - | 3 | - | - |
| Peas | - | 11 | - | 5 | - | - | - | - | - | 4 | 84 | - |
| Soya beans | - | - | - | - | 62 | - | - | - | - | - | 12 | - |
| Vegetables and Fruits | 342 | 295 | 4,729 | 1,455 | 58 | 495 | 86 | 1,343 | 537 | 7,044 | 1,328 | 360 |
| Vegetables | 342 | 295 | 4,729 | 1,455 | 58 | 495 | 86 | 1,343 | 537 | 7,044 | 1,328 | 360 |
| Total | 532 | 1,206 | 14,163 | 28,329 | 401 | 1,123 | 90 | 1,558 | 1,084 | 33,929 | 22,415 | 3,734 |

Source: NISR, SAS 2018, Season C

Appendix 8: Season C 2018_Production of main crops by District (MT) cont'd

| Crop/District | Rwamagana | Nyagatare | Gatsibo | Kayanza | Kirehe | Ngoma | Bugesera | 2018C | 2017C | Change |
|------------------------------|--------------|--------------|--------------|------------|------------|----------|--------------|----------------|----------------|-------------|
| Tubers and Roots | 212 | 380 | 409 | - | 19 | - | 461 | 106,845 | 93,428 | 14% |
| Sweet potatoes | 212 | 380 | 373 | - | 19 | - | 457 | 26,358 | 23,966 | 10% |
| Irish potatoes | - | - | 36 | - | - | - | 4 | 80,487 | 69,462 | 16% |
| Legumes and Pulses | 67 | - | 20 | - | - | - | 233 | 1,390 | 4,057 | -66% |
| Beans | 67 | - | 20 | - | - | - | 230 | 1,027 | 3,810 | -73% |
| Bush bean | 67 | - | 20 | - | - | - | 230 | 1,012 | 3,748 | -73% |
| Climbing bean | - | - | - | - | - | - | - | 15 | 62 | -76% |
| Peas | - | - | - | - | - | - | - | 137 | 55 | 150% |
| Soya beans | - | - | - | - | - | - | 3 | 227 | 192 | 18% |
| Vegetables and Fruits | 2,384 | 1,053 | 1,268 | 149 | 122 | - | 331 | 40,417 | 30,720 | 32% |
| Vegetables | 2,384 | 1,053 | 1,268 | 149 | 122 | - | 331 | 40,417 | 30,305 | 33% |
| Fruits | - | - | - | - | - | - | - | - | 414 | -100% |
| Total | 2,663 | 1,433 | 1,697 | 149 | 142 | - | 1,026 | 148,652 | 128,205 | 16% |

Source: NISR, SAS 2018, Season C

Appendix 9: Season A 2018_Yield of main crops by District (Kg/Ha)

| Crop/District | Nyarugenge | Gasabo | Kicukiro | Nyanza | Gisagara | Nyaruguru | Huye | Nyamagabe | Ruhango | Muhanga | Kamonyi |
|-----------------|------------|--------|----------|--------|----------|-----------|--------|-----------|---------|---------|---------|
| Maize | 942 | 1,287 | 1,603 | 1,770 | 2,208 | 2,002 | 1,890 | 1,268 | 1,370 | 1,106 | 1,316 |
| Sorghum | | | | 1,560 | 1,722 | 2,870 | 882 | | | | |
| Paddy rice | | 2,779 | | 3,102 | 2,969 | | 3,177 | | 2,403 | 2,615 | 5,370 |
| Wheat | | | | | | 1,074 | | | | | |
| Other Cereals | 488 | 1,981 | 107 | 774 | 451 | 1,714 | 430 | - | 941 | 893 | |
| Cassava | 13,180 | 14,315 | 15,120 | 11,649 | 15,418 | 12,926 | 11,581 | 14,218 | 16,214 | 12,659 | 13,299 |
| Sweet potatoes | 6,330 | 8,498 | 5,684 | 9,935 | 5,866 | 10,134 | 9,098 | 8,419 | 7,315 | 7,354 | 9,011 |
| Irish potatoes | 3,672 | 5,259 | 1,687 | 3,862 | 3,736 | 5,027 | 4,056 | 7,411 | 3,818 | 2,556 | 4,096 |
| Yams & Taro | 2,423 | 2,234 | 4,035 | 21,128 | 1,655 | 7,998 | 23,136 | 4,079 | 6,330 | 4,684 | 6,501 |
| Cooking Banana | 30,631 | 17,416 | 18,282 | 15,888 | 15,415 | 16,396 | 18,151 | 20,625 | 12,209 | 17,287 | 29,855 |
| Dessert banana | 20,020 | 22,533 | 24,390 | 11,755 | 36,237 | 14,080 | 20,297 | 27,415 | 13,567 | 35,788 | 22,752 |
| Banana for beer | 11,229 | 11,002 | 11,291 | 9,531 | 9,761 | 13,188 | 17,211 | 12,291 | 12,426 | 10,199 | 13,644 |
| Beans | 767 | 1,053 | 503 | 782 | 1,176 | 1,273 | 1,024 | 975 | 664 | 751 | 854 |
| Bush bean | 766 | 1,056 | 503 | 799 | 1,156 | 780 | 979 | 931 | 667 | 657 | 859 |
| Small red bean | | 325 | | 702 | 1,383 | | 1,177 | 588 | | | |
| Climbing bean | 802 | 908 | 452 | 680 | 1,429 | 1,457 | 1,211 | 1,071 | 650 | 986 | 760 |
| Peas | 1,471 | 645 | 394 | 637 | 1,025 | 244 | 711 | 645 | 799 | 800 | 576 |
| Ground nuts | 362 | 765 | 474 | 523 | 564 | | 384 | | 781 | 840 | 529 |
| Soya beans | 496 | 760 | 1,739 | 364 | 474 | 686 | 464 | 279 | 394 | 538 | 470 |
| Vegetables | 12,308 | 10,945 | 12,011 | 4,099 | 15,597 | 12,807 | 12,570 | 19,954 | 9,599 | 8,302 | 12,478 |
| Fruits | 15,948 | 3,377 | 24,236 | - | 571 | | 66,300 | | 1,854 | 257 | 5,593 |

Source: NISR, SAS 2018, Season A

Appendix 9: Season A 2018_Yield of main crops by District (Kg/Ha) cont'd

| Crop/District | Karongi | Rutsiro | Rubavu | Nyabihu | Ngororero | Rusizi | Nyamasheke | Rulindo | Gakenke | Musanze |
|-----------------|---------|---------|--------|---------|-----------|--------|------------|---------|---------|---------|
| Maize | 1,165 | 1,302 | 1,588 | 1,831 | 1,391 | 1,406 | 1,160 | 1,794 | 1,637 | 1,565 |
| Sorghum | 738 | 1,025 | 939 | 1,073 | 1,091 | 3,372 | 2,174 | | | 2,486 |
| Paddy rice | | | | | | 3,762 | 3,821 | | | |
| Wheat | | 970 | | 798 | 889 | | | 835 | | 1,908 |
| Other Cereals | | 616 | | | 616 | | | 616 | 813 | |
| Cassava | 11,091 | 14,977 | 13,410 | 13,410 | 7,124 | 9,355 | 13,641 | 14,429 | 13,035 | 15,000 |
| Sweet potatoes | 6,909 | 8,181 | 3,824 | 6,183 | 5,731 | 7,203 | 7,797 | 5,963 | 6,918 | 6,601 |
| Irish potatoes | 5,143 | 8,527 | 12,486 | 14,190 | 4,971 | 1,744 | 5,202 | 5,973 | 5,652 | 7,895 |
| Yams & Taro | 14,831 | 5,841 | 8,132 | 9,101 | 6,847 | 4,528 | 4,312 | 4,592 | 4,621 | 8,254 |
| Cooking Banana | 16,575 | 24,522 | 24,657 | 15,148 | 14,109 | 14,559 | 10,931 | 16,596 | 24,362 | 17,325 |
| Dessert banana | 9,884 | 32,995 | 7,398 | 11,043 | 8,941 | 15,400 | 10,686 | 22,597 | 29,600 | 8,794 |
| Banana for beer | 11,685 | 15,239 | 9,020 | 9,236 | 10,447 | 15,214 | 10,625 | 11,478 | 14,065 | 14,945 |
| Beans | 887 | 936 | 1,025 | 1,164 | 765 | 819 | 954 | 796 | 818 | 989 |
| Bush bean | 735 | 748 | 3,471 | 590 | 558 | 834 | 800 | 701 | 494 | 1,181 |
| Small red bean | 702 | | | | | | | | | |
| Climbing bean | 1,040 | 969 | 1,020 | 1,195 | 814 | 777 | 1,074 | 1,112 | 885 | 978 |
| Peas | 624 | 167 | 597 | 416 | 508 | 513 | 941 | 345 | 751 | 579 |
| Groundnuts | 569 | | | | | 562 | 362 | 604 | 524 | |
| Soybeans | 734 | 744 | | 1,110 | 454 | 727 | 648 | 438 | 360 | 875 |
| Vegetables | 12,146 | 13,611 | 10,329 | 13,655 | 8,138 | 12,311 | 13,100 | 14,295 | 9,481 | 8,883 |
| Fruits | 15,437 | 2,900 | 6,123 | 4,754 | 4,010 | 37,795 | 2,395 | 2,843 | 10,966 | 2,646 |

Source: NISR, SAS 2018, Season A

Appendix 9: Season A 2018_Yield of main crops by District (Kg/Ha) cont'd

| Crop/District | Burera | Gicumbi | Rwamagana | Nyagatare | Gatsibo | Kayanza | Kirehe | Ngoma | Bugesera | Overall National yield |
|-----------------|--------|---------|-----------|-----------|---------|---------|--------|--------|----------|------------------------|
| Maize | 1,396 | 1,929 | 1,544 | 1,649 | 1,882 | 1,412 | 1,186 | 1,282 | 1,187 | 1,525 |
| Sorghum | 1,797 | 2,094 | | 1,363 | 1,191 | 994 | 881 | | 1,017 | 1,347 |
| Paddy rice | | | 3,414 | 3,024 | 4,290 | 4,399 | 3,931 | 3,743 | 3,497 | 3,420 |
| Wheat | 437 | 508 | | 963 | 1,277 | 619 | | | | 1,325 |
| Other Cereals | | 652 | 314 | 1,320 | 703 | 410 | 398 | 370 | 1,056 | 712 |
| Cassava | 10,167 | 15,377 | 13,769 | 15,726 | 14,604 | 11,821 | 9,584 | 15,925 | 15,505 | 13,551 |
| Sweet potatoes | 8,168 | 10,208 | 6,995 | 5,383 | 7,732 | 6,268 | 5,767 | 5,290 | 7,707 | 7,565 |
| Irish potatoes | 9,771 | 9,321 | 6,860 | 3,148 | 8,214 | 3,906 | 4,185 | 6,063 | 2,348 | 8,646 |
| Yams & Taro | 3,011 | 6,528 | 6,299 | 4,786 | 4,867 | 2,647 | 1,896 | 2,702 | 5,692 | 6,192 |
| Cooking Banana | 17,313 | 18,551 | 21,149 | 21,705 | 18,531 | 19,878 | 16,938 | 18,079 | 19,056 | 18,970 |
| Dessert banana | 11,458 | 19,717 | 15,629 | 9,548 | 10,506 | 38,856 | 27,681 | 12,615 | 25,435 | 21,693 |
| Banana for beer | 10,325 | 15,906 | 12,219 | 15,246 | 15,004 | 13,581 | 9,460 | 12,106 | 12,132 | 12,271 |
| Beans | 1,176 | 1,160 | 1,121 | 733 | 1,037 | 519 | 682 | 707 | 657 | 875 |
| Bush bean | 1,031 | 1,100 | 1,121 | 739 | 1,051 | 512 | 682 | 709 | 662 | 810 |
| Small red bean | | | 671 | | | 67 | | | | 629 |
| Climbing bean | 1,197 | 1,195 | 1,345 | 657 | 915 | 1,176 | 683 | 554 | 378 | 1,035 |
| Peas | 653 | 802 | 609 | 719 | 521 | 483 | 416 | 340 | 759 | 595 |
| Groundnuts | | 578 | 496 | 644 | 486 | 693 | 502 | 555 | 719 | 613 |
| Soybeans | 217 | - | 294 | 611 | 281 | 288 | 912 | 800 | 285 | 506 |
| Vegetables | 28,366 | 9,495 | 9,750 | 13,097 | 12,648 | 11,899 | 9,802 | 1,337 | 13,175 | 11,939 |
| Fruits | | 1,196 | 7,558 | 3,448 | 2,853 | 12,022 | 2,274 | 1,075 | 29,413 | 8,416 |

Source: NISR, SAS 2018, Season A

Appendix 10: Season B 2018_Yield of main crops by District (Kg/Ha)

| Crop/District | Nyarugenge | Gasabo | Kicukiro | Nyanza | Gisagara | Nyaruguru | Huye | Nyamagabe | Ruhango | Muhanga | Kamonyi |
|-----------------|------------|--------|----------|--------|----------|-----------|--------|-----------|---------|---------|---------|
| Maize | 964 | 1,165 | 1,288 | 1,445 | 627 | 1,640 | 735 | 1,486 | 625 | 794 | 818 |
| Sorghum | 1,084 | 1,293 | 995 | 916 | 741 | 991 | 1,159 | 848 | 1,041 | 1,191 | 1,204 |
| Paddy rice | - | 2,291 | 4,041 | 2,565 | 2,803 | - | 2,301 | - | 3,323 | 4,735 | 4,400 |
| Wheat | - | - | - | - | - | 726 | - | 679 | - | - | - |
| Other Cereals | - | 1,158 | - | 1,510 | 790 | 987 | 340 | 558 | 440 | - | - |
| Cassava | 11,679 | 10,225 | 16,391 | 11,016 | 9,972 | 16,812 | 17,301 | 12,381 | 14,832 | 12,029 | 13,793 |
| Sweet potatoes | 4,051 | 6,937 | 6,429 | 8,204 | 6,389 | 8,330 | 7,250 | 6,292 | 6,867 | 6,406 | 4,925 |
| Irish potatoes | 2,449 | 3,669 | 5,051 | 1,912 | 2,171 | 5,470 | 2,808 | 7,017 | 1,397 | 2,010 | 3,015 |
| Yams & Taro | 5,386 | 3,466 | 4,576 | 7,661 | 4,420 | 8,057 | 3,981 | 6,359 | 4,805 | 3,495 | 5,566 |
| Cooking Banana | 21,356 | 20,822 | 15,209 | 11,584 | 11,939 | 17,286 | 7,620 | 14,223 | 18,918 | 12,299 | 19,373 |
| Dessert banana | 14,040 | 18,505 | 16,711 | 13,404 | 15,423 | 17,918 | 14,018 | 12,964 | 15,602 | 10,791 | 15,372 |
| Banana for beer | 8,857 | 11,013 | 9,771 | 10,124 | 13,062 | 9,567 | 9,377 | 8,934 | 10,345 | 8,286 | 10,631 |
| Beans | 732 | 684 | 999 | 771 | 956 | 756 | 751 | 881 | 579 | 577 | 590 |
| Bush bean | 735 | 675 | 1,000 | 739 | 931 | 403 | 555 | 906 | 571 | 476 | 576 |
| Climbing bean | 629 | 1,135 | 920 | 948 | 1,132 | 863 | 1,041 | 873 | 604 | 776 | 753 |
| Peas | 1,060 | 918 | - | 447 | 545 | 718 | 350 | 849 | 325 | 444 | 472 |
| Ground nuts | 625 | 340 | 520 | 574 | 190 | - | 751 | - | 530 | 133 | 360 |
| Soya beans | 368 | 650 | 562 | 256 | 346 | 334 | 276 | 286 | 258 | 249 | 314 |
| Vegetables | 6,138 | 10,238 | 7,083 | 12,046 | 12,059 | 5,239 | 18,008 | 13,673 | 6,974 | 7,532 | 11,227 |
| Fruits | 2,505 | - | - | - | 693 | - | - | 793 | 1,946 | - | 6,913 |

Source: NISR, SAS 2018, Season B

Appendix 10: Season B 2018_Yield of main crops by District (Kg/Ha) cont'd

| Crop/District | Karongi | Rutsiro | Rubavu | Nyabihu | Ngororero | Rusizi | Nyamasheke | Rulindo | Gakenke | Musanze | Burera | Gicumbi |
|-----------------|---------|---------|--------|---------|-----------|--------|------------|---------|---------|---------|--------|---------|
| Maize | 906 | 1,243 | 1,181 | 816 | 787 | 916 | 497 | 549 | 790 | 1,031 | 1,093 | 941 |
| Sorghum | 947 | - | 2,589 | - | - | 366 | 755 | 815 | 515 | - | 1,175 | 979 |
| Paddy rice | - | - | - | - | - | 5,254 | 3,371 | - | - | - | - | - |
| Wheat | 862 | 578 | - | 1,293 | 447 | - | - | 624 | 1,737 | 1,150 | 1,286 | 195 |
| Other Cereals | - | - | - | - | - | - | - | - | - | - | - | - |
| Cassava | 10,949 | 11,931 | 13,103 | 9,901 | 8,076 | 6,177 | 7,630 | 14,837 | 18,352 | 7,921 | - | 15,795 |
| Sweet potatoes | 7,214 | 5,179 | 5,431 | 5,010 | 3,751 | 6,419 | 6,157 | 5,528 | 5,747 | 5,633 | 6,289 | 6,951 |
| Irish potatoes | 9,153 | 4,450 | 8,526 | 9,847 | 2,279 | 1,342 | 2,530 | 5,870 | 4,081 | 9,811 | 9,269 | 8,661 |
| Yams & Taro | 6,490 | 5,113 | 9,775 | 4,421 | 4,611 | 4,234 | 3,578 | 5,597 | 5,135 | 2,317 | 11,184 | 5,698 |
| Cooking Banana | 11,652 | 14,593 | 18,062 | 12,661 | 17,112 | 18,288 | 15,260 | 15,468 | 14,000 | 26,412 | 28,280 | 20,925 |
| Dessert banana | 17,260 | 14,903 | 8,771 | 12,255 | 14,238 | 12,705 | 12,817 | 18,176 | 14,972 | 19,496 | 25,160 | 21,579 |
| Banana for beer | 10,110 | 11,035 | 14,379 | 6,502 | 7,293 | 11,903 | 9,397 | 10,331 | 7,344 | 10,840 | 12,414 | 13,049 |
| Beans | 823 | 771 | 849 | 892 | 906 | 635 | 931 | 644 | 933 | 1,218 | 1,228 | 900 |
| Bush bean | 555 | 618 | - | 407 | 497 | 618 | 720 | 412 | 560 | 732 | 909 | 629 |
| Climbing bean | 967 | 810 | 859 | 894 | 981 | 682 | 1,049 | 902 | 963 | 1,236 | 1,244 | 1,002 |
| Peas | 320 | 294 | 1,229 | 394 | 638 | - | 411 | 423 | 506 | 477 | 808 | 392 |
| Ground nuts | 119 | - | - | - | - | 303 | 365 | 383 | 823 | - | - | 526 |
| Soya beans | 334 | 388 | - | 342 | 392 | 532 | 434 | 305 | 344 | 684 | 519 | - |
| Vegetables | 17,646 | 8,018 | 13,613 | 10,775 | 10,915 | 10,983 | 9,327 | 21,530 | 8,439 | 5,848 | 15,674 | 13,197 |
| Fruits | - | 3,996 | 4,919 | 4,717 | 3,046 | 5,942 | 4,195 | 1,764 | 3,091 | 4,760 | 4,373 | 1,489 |

Source: NISR, SAS 2018, Season B

Appendix 10: Season B 2018_Yield of main crops by District (Kg/Ha) cont'd

| Crop/District | Rwamagana | Nyagatare | Gatsibo | Kayanza | Kirehe | Ngoma | Bugesera | SSF Yield | LSF Yield | Overall Yield |
|-----------------|-----------|-----------|---------|---------|--------|--------|----------|-----------|-----------|---------------|
| Maize | 781 | 1,358 | 1,391 | 757 | 502 | 551 | 1,958 | 1,118 | 3,567 | 1,171 |
| Sorghum | 1,065 | 1,197 | 1,046 | 831 | 921 | 820 | 877 | 1,008 | 1,751 | 1,010 |
| Paddy rice | 4,004 | 4,589 | 3,112 | 4,305 | 3,798 | 2,825 | 2,667 | 3,302 | 3,587 | 3,532 |
| Wheat | - | - | 944 | - | - | - | - | 966 | 2,425 | 973 |
| Other Cereals | 298 | 66 | 693 | 365 | 380 | 344 | 445 | 486 | 1,992 | 486 |
| Cassava | 12,908 | 15,396 | 14,372 | 12,699 | 17,100 | 11,849 | 15,336 | 11,397 | 13,321 | 11,398 |
| Sweet potatoes | 6,159 | 5,816 | 4,612 | 8,023 | 3,613 | 7,254 | 6,591 | 6,234 | 12,314 | 6,236 |
| Irish potatoes | 2,563 | 4,420 | 2,916 | 2,502 | 2,770 | 2,357 | - | 6,525 | 13,633 | 6,531 |
| Yams & Taro | 4,729 | 5,285 | 3,196 | 5,771 | 3,304 | 5,502 | 6,412 | 5,047 | 3,836 | 5,047 |
| Cooking Banana | 22,291 | 20,590 | 14,592 | 16,066 | 20,117 | 16,962 | 14,596 | 17,898 | 13,819 | 17,891 |
| Dessert banana | 17,576 | 11,004 | 17,985 | 22,282 | 15,085 | 14,223 | 14,362 | 15,911 | 21,150 | 15,915 |
| Banana for beer | 11,400 | 10,426 | 12,310 | 11,204 | 14,581 | 14,045 | 6,960 | 9,613 | 22,495 | 9,615 |
| Beans | 759 | 1,211 | 912 | 754 | 766 | 755 | 984 | 865 | 1,460 | 868 |
| Bush bean | 695 | 1,198 | 907 | 747 | 595 | 725 | 988 | 797 | 1,443 | 801 |
| Climbing bean | 2,023 | 1,638 | 979 | 973 | 1,054 | 1,256 | 671 | 996 | 2,393 | 997 |
| Peas | 347 | 504 | 277 | 469 | 603 | 815 | 1,471 | 536 | 621 | 536 |
| Ground nuts | 314 | 598 | 547 | 462 | 331 | 413 | 375 | 464 | 594 | 464 |
| Soya beans | 312 | 573 | 603 | 224 | 360 | 345 | 432 | 340 | 1,281 | 343 |
| Vegetables | 16,270 | 13,210 | 8,531 | 2,739 | 12,996 | 21,080 | 7,015 | 11,494 | 23,703 | 11,641 |
| Fruits | 2,951 | 3,430 | 4,717 | - | 9,360 | 3,483 | 640 | 3,787 | 8,736 | 3,916 |

Source: NISR, SAS 2018, Season B

Appendix 11 : Season C 2018_Yield of main crops by District (Kg/Ha)

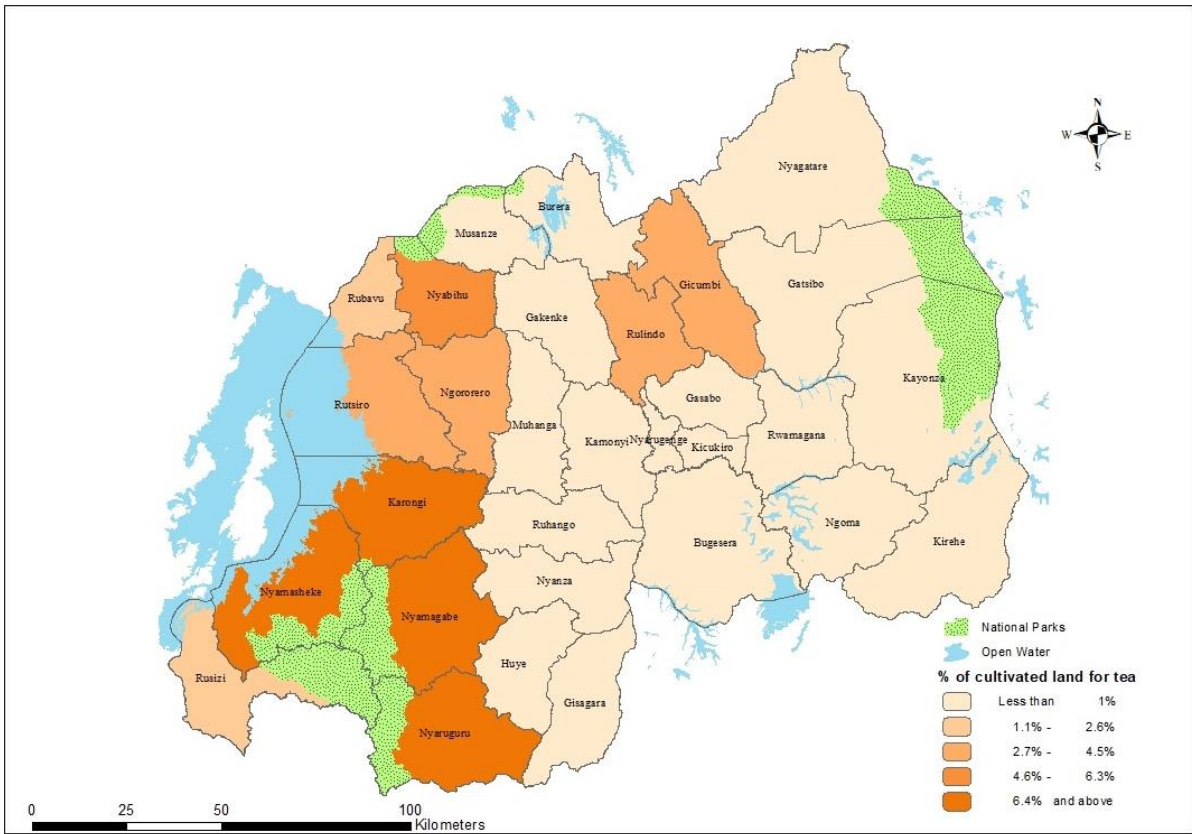
| Crop/District | Nyanugenge | Gasabo | Kicukiro | Nyanza | Gisagara | Nyaruguru | Huye | Nyamagabe | Ruhango | Muhanga | Kamonyi |
|----------------|------------|--------|----------|--------|----------|-----------|--------|-----------|---------|---------|---------|
| Sweet potatoes | 5,944 | 5,459 | - | 4,581 | 3,728 | 5,671 | 5,548 | 4,927 | 4,681 | 4,034 | 4,374 |
| Irish potatoes | - | - | - | 4,495 | - | - | 5,342 | 6,921 | 1,623 | - | - |
| Yams & Taro | - | - | - | - | - | - | - | - | - | - | - |
| Beans | 658 | - | - | 1,233 | 653 | 2,073 | 1,669 | - | 925 | 1,034 | 641 |
| Bush bean | 658 | - | - | 1,233 | 653 | 2,073 | 1,669 | - | 925 | 1,034 | 422 |
| Climbing bean | - | - | - | - | - | - | - | - | - | - | 1,467 |
| Peas | - | - | - | 389 | - | - | - | 1,616 | - | 1,048 | - |
| Soya beans | - | - | - | 1,476 | 274 | - | - | - | - | 724 | - |
| Vegetables | 5,600 | 13,014 | - | 14,401 | 12,535 | 12,204 | 16,831 | 12,442 | 10,924 | 19,922 | 9,863 |

| Crop/District | Karongi | Rutsiro | Rubavu | Nyabihu | Ngororero | Rusizi | Nyamasheke | Rulindo | Gakenke | Musanze | Burera | Gicumbi |
|----------------|---------|---------|--------|---------|-----------|--------|------------|---------|---------|---------|--------|---------|
| Sweet potatoes | 4,392 | 1,421 | 2,129 | 4,585 | 4,694 | 5,779 | 893 | 1,810 | 5,121 | 4,465 | 4,632 | 5,636 |
| Irish potatoes | - | 7,310 | 13,791 | 10,091 | - | 7,915 | - | 2,780 | 4,858 | 10,898 | 9,648 | 10,343 |
| Beans | - | - | - | - | 647 | 995 | - | 2,159 | - | 714 | - | - |
| Bush bean | - | - | - | - | 647 | 995 | - | 2,159 | - | 831 | - | - |
| Climbing bean | - | - | - | - | - | - | - | - | - | 655 | - | - |
| Peas | - | 560 | - | 741 | - | - | - | - | - | 151 | 590 | - |
| Soya beans | - | - | - | - | 944 | - | - | - | - | - | 870 | - |
| Vegetables | 9,511 | 12,304 | 17,501 | 8,720 | 23,482 | 10,523 | 8,808 | 12,492 | 10,370 | 15,337 | 22,532 | 13,263 |

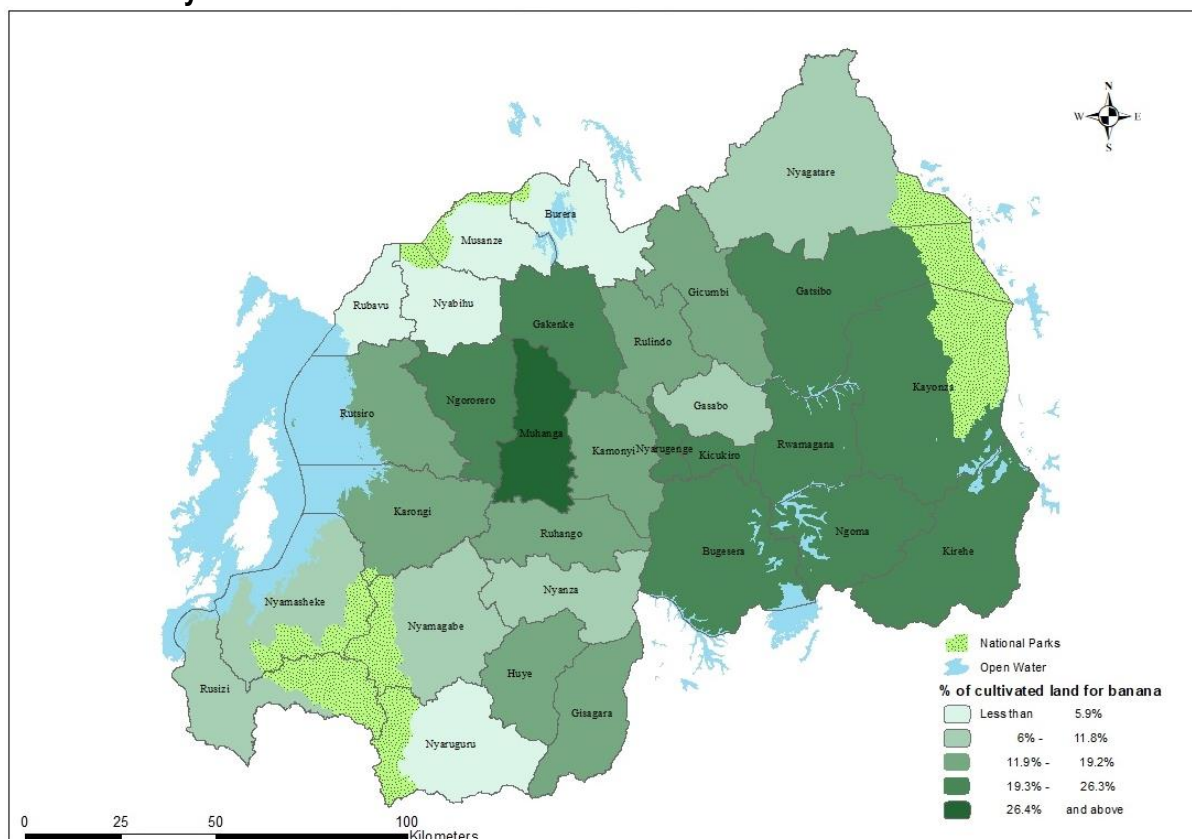
| Crop/District | Rwamagana | Nyagatare | Gatsibo | Kayanza | Kirehe | Ngoma | Bugesera | Yield 2018C |
|----------------|-----------|-----------|---------|---------|--------|-------|----------|-------------|
| Sweet potatoes | 5,426 | 5,257 | 5,172 | - | 3,290 | - | 4,726 | 4,638 |
| Irish potatoes | - | - | 7,279 | - | - | - | 2,037 | 10,399 |
| Beans | 1,036 | - | 1,439 | - | - | - | 1,964 | 1,160 |
| Bush bean | 1,036 | - | 1,439 | - | - | - | 1,964 | 1,160 |
| Climbing bean | - | - | - | - | - | - | - | 1,153 |
| Peas | - | - | - | - | - | - | - | 600 |
| Soya beans | - | - | - | - | - | - | 471 | 646 |
| Vegetables | 17,479 | 17,913 | 11,467 | 12,542 | 8,909 | - | 13,177 | 13,396 |

Source: NISR, SAS 2018, Season C

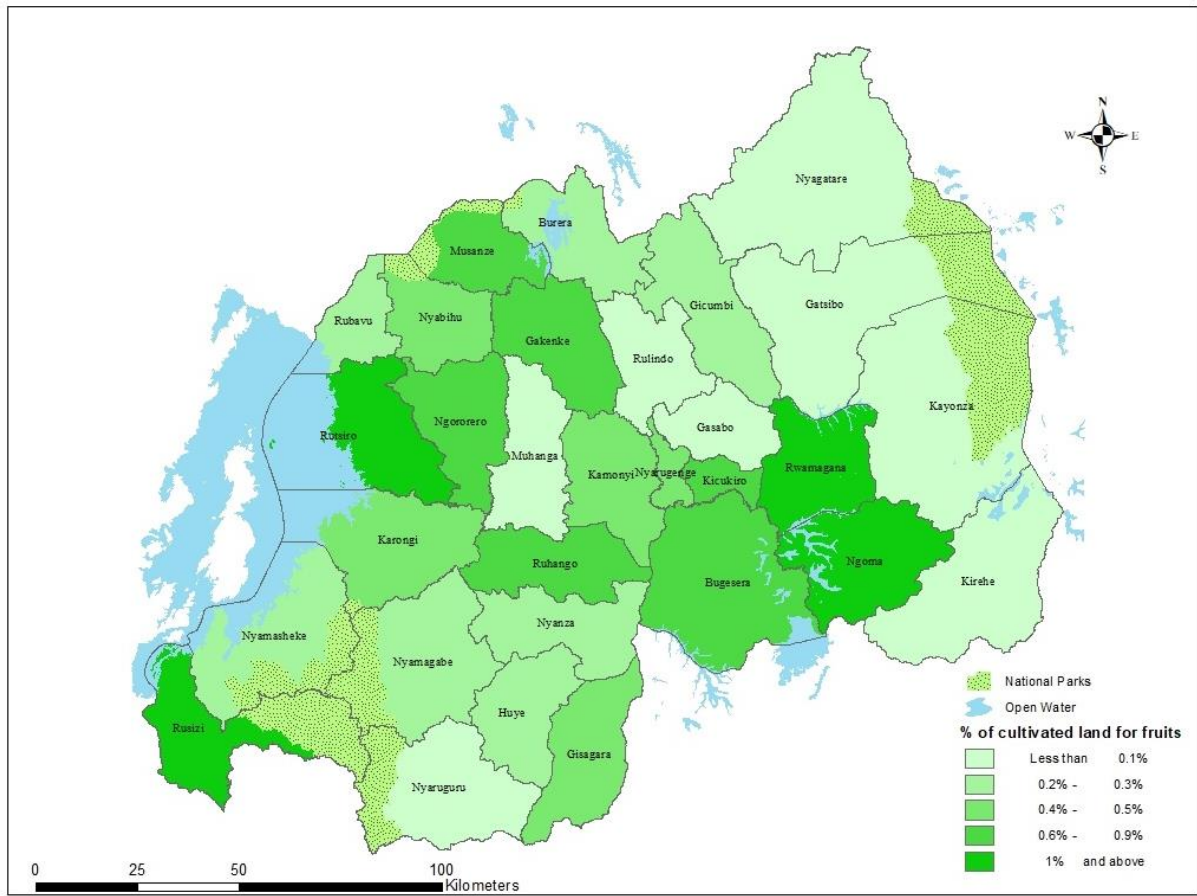
Appendix 12 : Percentage of area under permanent crop (Tea) 2018 Agricultural year



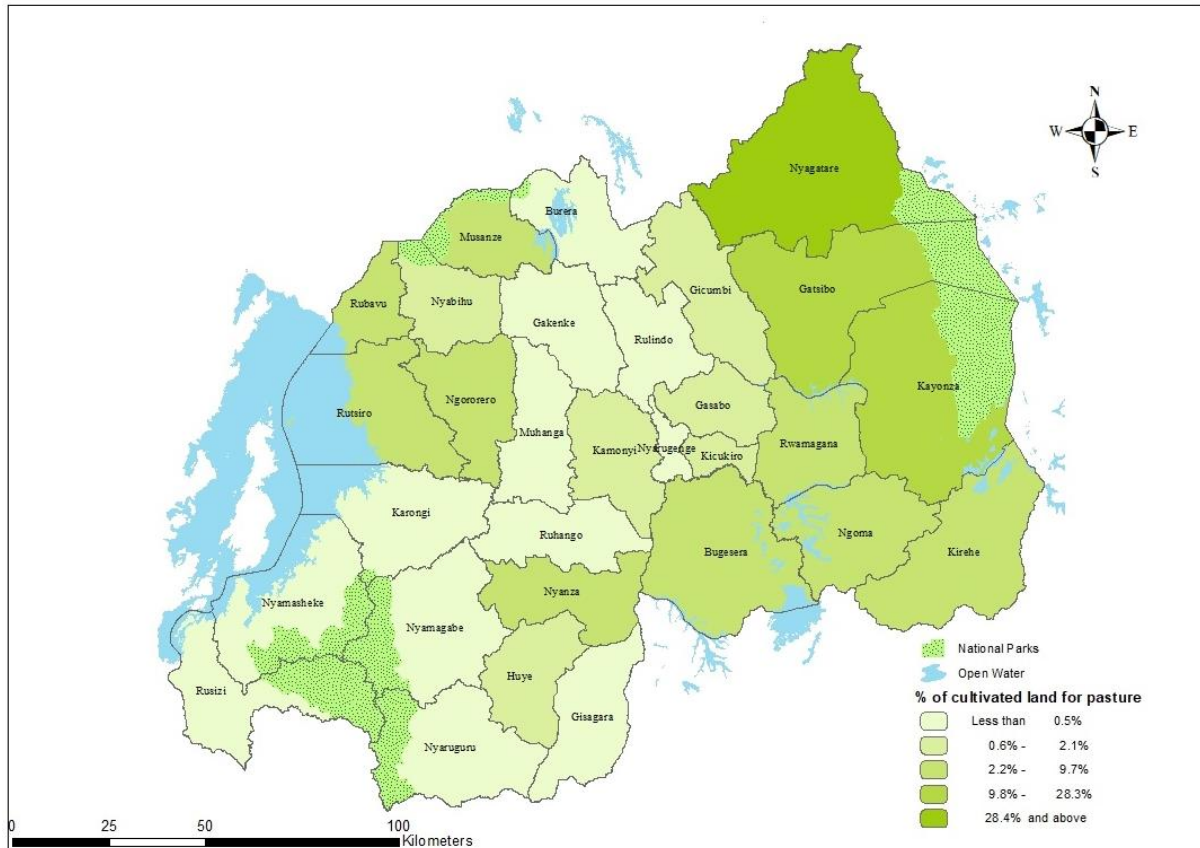
Appendix 13 : Percentage of area under permanent crop (Banana) in 2018 Agricultural year



**Appendix 14: Percentage of area under cultivation of permanent crop (Fruits) in 2018
Agricultural year**



Appendix 15 : Percentage of area under pasture (2018 Agricultural year)



Persons who contributed to Seasonal Agricultural Survey 2018

Technical coordination

- Mwizerwa Jean Claude, acting director of economic statistics unit
- Buramba Eric, Agriculture & Environmental Statistics Acting Team Leader
- Bigirimana Florent, Geographic Information Systems Team Leader
- Nkundimana Donath, Data Processing Team Leader

Field work coordination

- Kamanzi Shingiro Jean Philbert, Research Assistant
- Mukamazimpaka Francine, Perennial Crops and Horticulture Statistician
- Uwizeyimana Lambert, Forestry and Environmental Statistics Statistician

Data analysis and Microdata & Metadata management

- Buramba Eric, Agriculture & Environmental Statistics Acting Team Leader
- Uwamahoro Didas, Regional Price and Economic Data Collector Officer
- Abayisenga Aimable, Regional Price and Economic Data Collector Officer
- Muvunyi Issa, Livestock and Fisheries Production Statistician
- Mutebutsi Alexis, Research Assistant
- Ruben Muhayiteto, Data Portals Management Officer
- Jean Claude Nyirimanzi, Team Leader Statistician

Report writing

- Mutebutsi Alexis, Research Assistant
- Muvunyi Issa, Livestock and Fisheries Production Statistician
- Uwizeyimana Lambert, Forestry and Environmental Statistics Statistician
- Rwayitare Jean Bosco, Research Assistant

GIS

- Bizimungu Clément, Field Operations Cartographer Officer
- Niyonsenga j. Claude, gis staff
- Ntawiha Athanasie, Gis Staff
- Irambona Eddy Marcus, Gis Staff
- Niyitegeka Beata, Cartographer Support Staff
- Ndazigaruye Alfred, Cartographer Support Staff

Data processing

- Sebahire Jean Népomuscène, Food Security & Agriculture Surveys Data processing Officer
- Mutebutsi Alexis, Research Assistant
- Hagenimana Damascène, It Support Staff

- Isimbi Bélise, It Support Staff
- - Murebwayire Divine, Research Assistant

Report Review and Layout

- Nyirimanzi Jean Claude, Research, Publication and Dissemination Team Leader
- Ruben Muhayiteto, Data Portals Management Officer

