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## RWANDA

# FOOD AND NUTRITION SECURITY MONITORING SYSTEM (FNSMS)

ROUND 9 - September. 2014

## Main Findings

In line with previous assessments including the 2012 CFSVA, the FNSMS round 9 found seasonal trends in food security, with higher levels of food insecurity in September as a result of increased market prices and most households having depleted food stocks. In September 2014 the percentage of households with unacceptable food consumption was 35%, indicating a 4% increase compared to FNSMS rounds<sup>1</sup> conducted in September 2012 and September 2013. Among households with unacceptable food consumption, 10% had poor food consumption while 25% had borderline food consumption (see Key Definitions). The Western and Southern provinces, especially along the Congo-Nile Crest and Lake Kivu, reported the highest percentages of food insecure households.

As shown by previous rounds, food insecure households remain poor and vulnerable, without diversified livelihood activities and either landless or cultivating small plots of land (<0.5 ha). Households headed by women, elderly, divorced or separated people or those who did not attend school, as well as households relying on precarious livelihood activities, were vulnerable to food insecurity. Households who reported the illness or accident of a household member or the loss of income or employment of a household member were more likely to report unacceptable food consumption. The most reported

serious illness or accident of a household member (19.5%) and other community shocks (32.6%) such crop and livestock diseases and high agricultural input prices.

FNSMS round 9 showed that while starches and pulses are consumed by all categories of households, fruits, meat and milk are not part of the weekly diet of food insecure households. The level of chronic malnutrition (stunting) remains high (44%). Underweight is at a 'poor' level (13%) and wasting is within 'acceptable' limits (2%).

FNSMS round 9 examined the impact of the dry spell during season 2014 B and found that 85% of households experienced a reduction in their crop production as a result of the dry spell, with the Eastern and Southern provinces particularly affected. Only 26% of households reported having carry over food stocks from previous harvests, and three-quarters of households declared their available food stocks to be less than in a normal year. FNSMS round 9 found that most households, particularly in the Eastern and Southern provinces, stated they would face more difficulty than normal to feed their household for the remainder of the year. Unacceptable food consumption was more common among households affected by the dry spell, those who did not cultivate during season 2014 B, and those reporting food access problems in the last week.

<sup>1</sup>All FNSMS rounds exclude households in Kigali city.

## Key Definitions

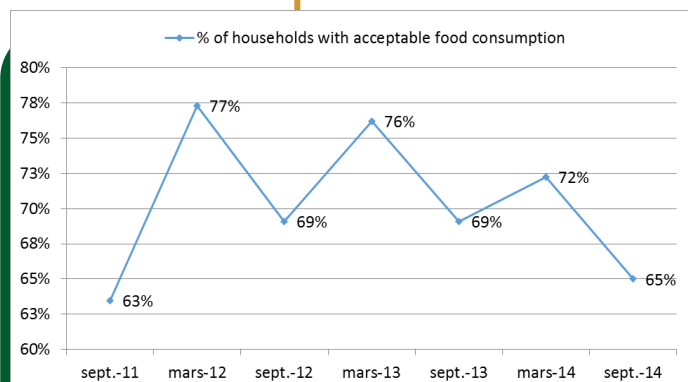
**Food security** exists when all people, at all times, have physical and economic access to sufficient food in both quantity and quality. In the FNSMS a household is considered to be food insecure if it has poor or borderline food consumption. Household food consumption is estimated with the food consumption score, a WFP corporate indicator that measures the frequency of household level consumption of the main food groups.

**The Food Consumption Score (FCS)** is a score calculated using the frequency of consumption of different food groups consumed by a household during the 7 days before the survey, used to measure household food security. If the household

FCS is below a certain threshold value (21) the household has poor food consumption and is qualified as food insecure. Above another threshold value (35) the household has acceptable food consumption and is food secure. Between 21 and 35 consumption is borderline and households are either food insecure or at risk of becoming food insecure.

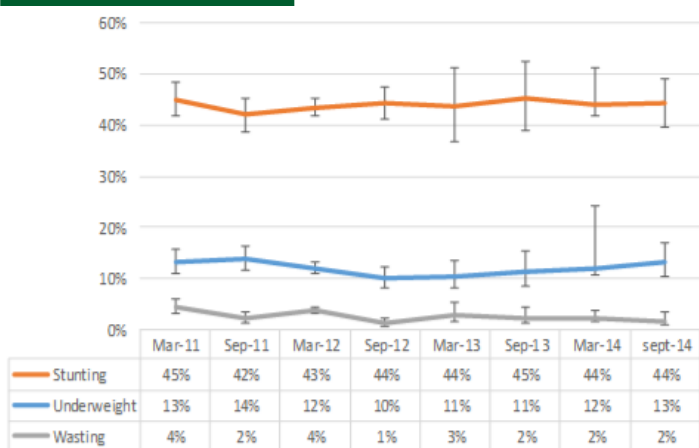
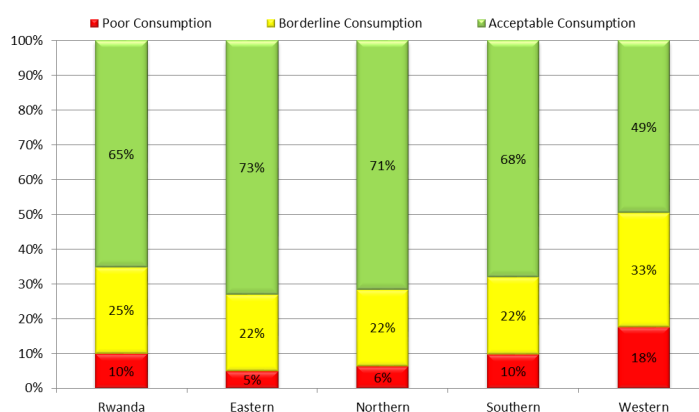
**The Coping Strategy Index (CSI)** is an indicator of household food security behaviour that reveals how households manage or cope with shortages of food. The CSI measures the frequency and severity of actions taken by households in response to a perceived food shortage. A high CSI means more stress and potential declining food security in a household.

## Food security situation aligned to seasonal patterns



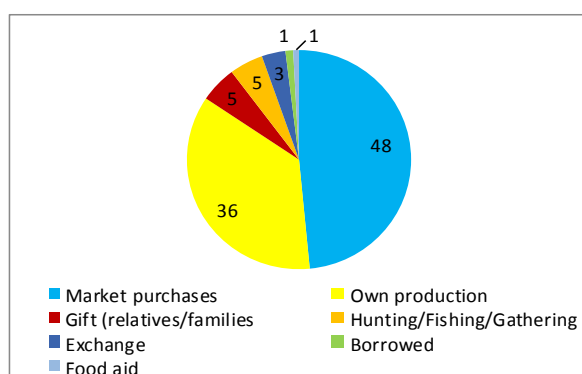
**Figure 1:** Households with acceptable food consumption from September 2011 to September 2014

**Figure 2:** Food insecurity by province in September 2014



**Figure 4:** Prevalence of malnutrition, FNSMS rounds 2-9

As shown in Figure 4, the results from FNSMS round 9 indicate that the prevalence of stunting remained 'very high' at 44% (CI 95%: 40%-49%). According to the



**Figure 3:** Food sources in September 2014

purchasing food in the market.

FNSMS round 9 found that food security in rural areas of Rwanda remained stable following seasonal patterns between March 2012 and September 2013, with acceptable food consumption reported by 77% and 76% of households in March 2012 and March 2013 respectively, as well as by 69% of households in September 2012 and September 2013. In September 2014, acceptable food consumption was reported by 65% of households, indicating a 4% decrease compared to the two previous years (see Figure 1).

As found in previous FNSMS rounds and the 2012 CFSVA, the Western province had the highest percentage of food insecure households (51%), followed by the Southern province (32%; see Figure 2). However, the percentage of households with unacceptable food consumption in the Western province (51%) indicated a significant increase compared to previous FNSMS rounds;

unacceptable food consumption was reported by 29% of households in September 2013 and 45% in September 2012.

When considering FEWS NET livelihood zones, the highest percentages of households with unacceptable food consumption were found in the Lake Kivu coffee zone, the East Congo-Nile highland subsistence farming zone and the West Congo-Nile Crest tea zone (see Figure 10). According to the 2012 CFSVA, the high percentage of food insecure households in these areas is linked to lower levels of household crop diversity, small households food stocks, relative isolation from markets, steeply sloped land and less fertile soil than other areas of the country.

As shown by previous FNSMS rounds, markets remained households' primary source of food (providing 48% of food), while households sourced the next largest share of their food (36%) from their own production (see Figure 3).

## Chronic malnutrition remains high among children under 5 years of age

FNSMS round 9, the underweight prevalence was 13% (CI 95%: 10%-17%), within 'poor' limits. The prevalence of acute malnutrition was 2% (CI 95%: 1%-3%), within 'acceptable' limits.

These findings about malnutrition

remain in line with results of previous FNSMS rounds. Since March 2011, small variations have been seen in the prevalence of stunting (42-45%), underweight (10-13%) and wasting (1-4%), but the changes observed have not been statistically significant.

## Poor and vulnerable households are more affected by food insecurity

In line with findings from previous FNSMS rounds, round 9 shows that food insecure households are mostly vulnerable and poor households owning little land and relying on precarious, less diverse livelihoods.

Households headed by women or an elderly, single, widowed or divorced person were more likely to have poor food consumption patterns. 43% of households headed by women reported unacceptable food consumption compared to 32% of households headed by men. Only 57% of households headed by elderly people over 60 years old reported acceptable food consumption compared to 68% of households headed by people under 60 years of age. Households headed by married couples (53% of the households) reported better food consumption patterns than other households.

Households with less diverse and more precarious livelihoods were less food secure. Among households relying on one livelihood activity (28% of the sample), 38% reported unacceptable food consumption, compared to 34% of households practicing a combination of livelihood activities. Households relying on precarious activities such as daily labour, hunting, fishing, gathering, gifts and aid were significantly less likely to report acceptable food consumption (see Figure 5).

The less land households had, the more likely they were to be food insecure. Households who owned

more than 0.5 ha of land were more likely to report acceptable food consumption than those with less than 0.5 ha (see Figure 6).

The greater a household's monthly expenditure, the more likely the household was to be food secure. Most households (78%) spent over 10,000Rwf per month, 12% spend 5,000-10,000Rwf, 7% spend 1,000-5,000Rwf and 3% spend less than 1,000Rwf per month. Only 19% of households with a monthly expenditure of less than 1,000 Rwf had acceptable food consumption, compared to 39% spending 1,000-5,000Rwf, 45% of those spending 5,000-10,000Rwf, and 72% of those spending more than 10,000 Rwf per month.

The higher the level of formal education received by the head of household, the more likely the household was to be food secure. 95% of households whose head had secondary or university education reported acceptable food consumption, compared to 55% of those whose head had no formal education. Households whose head can read and write (59% of the sample) showed better food consumption patterns than households' whose head can neither read nor write.

There was no difference between the food consumption of households who reported a shock during the previous 6 months (62% of the sample) and households who did not report a

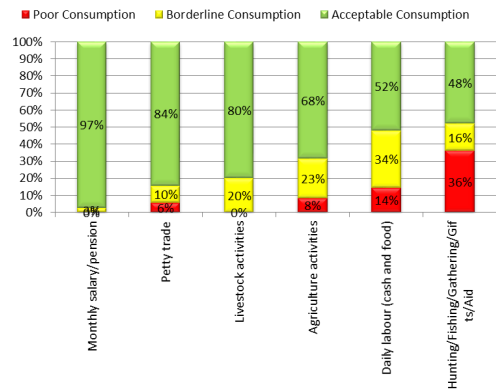
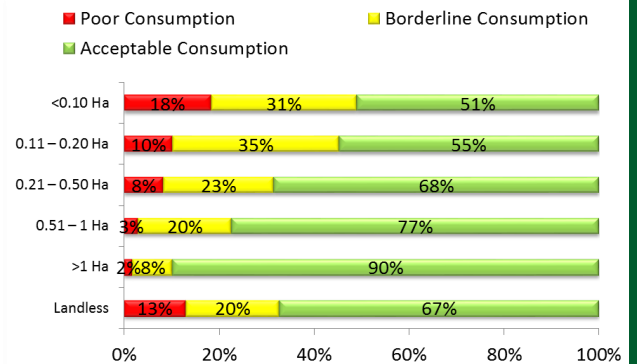


Figure 5: Food consumption groups by livelihood activities

shock. 65% of households in both categories reported acceptable food consumption.

Amongst those households who reported shocks, the most commonly reported shocks were meteorological shocks (63%), serious illness or accident of a household member (19%) and other community shocks (33%). Households who reported the illness or accident of a household member or the loss of income or employment of a household member were more likely to report unacceptable food consumption than households experiencing other shocks.

Figure 6: Food security status of households by land ownership



## Less diversified diet in food insecure households

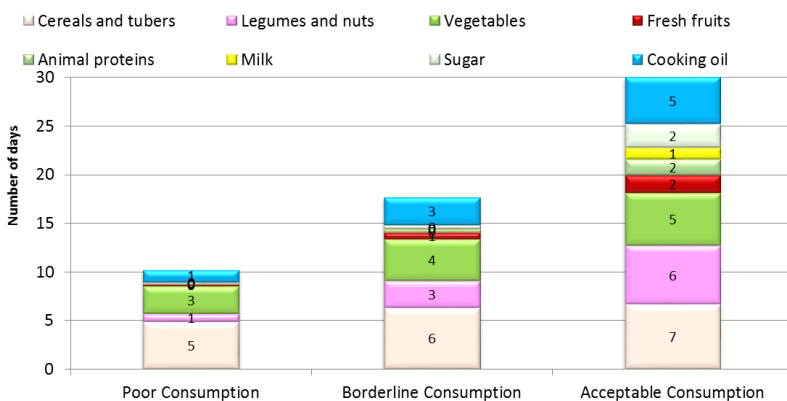


Figure 7: Type of food consumed by household food consumption groups

As shown by previous rounds of FNSMS, round 9 found that starches\* and pulses remain the primary staple food in Rwanda. Like previous rounds, FNSMS round 9 also shows that the diet of food insecure households is of poor nutritional quality. Households with unacceptable food consumption rarely consumed sugar, oils, legumes and nuts (0 to 3 days per week). Fruits, meat and milk were consumed primarily by households with acceptable food consumption and were not part of the weekly diet of food insecure households.

(\*) Starches include cereal and tubers

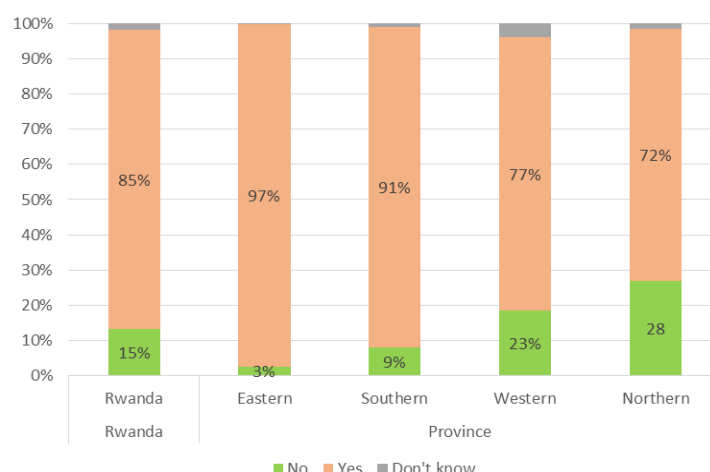
## Dry spell during season 2014 B

According to the findings from FNSMS round 9, a dry spell during season 2014 B (February to June 2014) negatively affected crop production and food security in Rwanda.

85% of households reported a reduction in their crop production (excluding bananas and tubers) due to a dry spell during season 2014 B (see Figure 8). Considering crop production outside marshlands and irrigated areas during the normal season, the Eastern and Southern provinces were the most affected regions with reduced crop production reported by 97% and 91% of households respectively.

At the district level, the effect of the dry spell was most widely reported in the districts of Nyanza-Gisagara-Bugesera; 99% of households in this area reporting reduced crop production. A reduction in crop production due to the dry spell was also reported by 96-97% of households in the districts of Kirehe-Ngoma-Rwamagana and Nyagatare-Gatsibo-Kayanza.

In addition to the widespread reported decrease in crop production during season 2014 B, only 39% of households surveyed reported that they had cultivated during season 2014 C (July-September 2014). Households cultivating during this season are those with access to marshland



**Figure 8: Reduction in crop production February-June 2014 by province**

during the dry season. The highest numbers of people not cultivating were reported in the Southern and Western provinces. Furthermore, only 15% of households reported that they had begun harvesting for season 2014 C.

Only 26% of households in Rwanda reported having carry over food stocks from their previous harvests (season 2014 A, B or C). The Western province had the lowest percentage of households with carry over food stocks (16%).

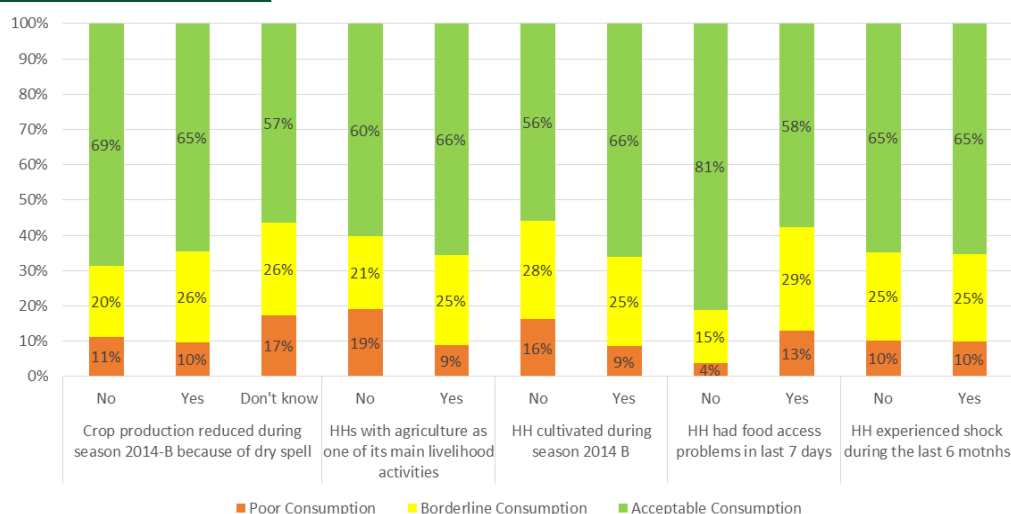
Most households (76%) declared that their available food stocks were less than in a normal year. The highest percentage of households reporting a lower quantity of stocks than the previous year was in the

Eastern province (95%). However, despite the decrease in carry over food stocks in the Eastern province compared to a normal year, households in the Eastern Province still report their stocks would likely last longer than was reported elsewhere. Households in the Eastern province reported their stocks would last 2.5 months, compared to those in the Western province who reported their food stocks would last just 1 month.

In general, households who had experienced a shock during the previous six months did not report different food consumption patterns to those who had not. However, a high percentage of households with unacceptable food consumption was found among households who declared that they were affected by or were not sure if they were affected by the dry spell.

Unacceptable food consumption was also found more frequently in households who did not cultivate during season 2014 B, households who reported food access problems in the last seven days, and households for whom agriculture was not a primary livelihood activity (see Figure 9).

**Figure 9: Effects of shocks and dry spell on food consumption in September 2014**





## Conclusion and recommendations

In September 2014, 35% of households in Rwanda (excluding Kigali city) could be considered food insecure based on their food consumption. Seasonal trends in Rwanda mean that household food consumption is worse in September than in March due to the lower availability of household food stocks and higher market food prices. In September 2014, 65% of households had acceptable food consumption, a 4% decrease compared to the level reported in September 2012 and September 2013. This coincides with the change of the FNSMS sample, but other causes of increased food insecurity need to be investigated.

The Western and Southern Provinces reported higher percentages of food insecure households than other provinces. There was an increase in the percentage of food insecure households in the Western province compared to the two previous FNSMS rounds. The reasons for this increase need to be investigated.

Food insecure households remained poor, 'vulnerable' households (headed by women, widows, the elderly or those who did not attend school), owning little land, and relying on precarious livelihoods.

The level of stunting remained very high (45%) while underweight and wasting remained within 'poor' and 'acceptable' limits respectively.

Based on the findings of the FNSMS round 9, the following recommendations can be formulated:

- Strengthen existing government, ONE UN and other partners in designing and implementing specific interventions to reduce chronic malnutrition in Rwanda.
- Strengthen and increase the coverage of timely safety nets for the most vulnerable households.
- Focus on the Southern and Western provinces, especially along Lake Kivu and the Congo-Nile Crest, which need special efforts to address food insecurity. As shown by the 2012 CFSVA, this area is characterised by high rates of soil erosion (over 10 tons/ha/year) and a low soil fertility index (0.3 compared with 0.7 in eastern Rwanda).
- Strengthen livelihoods opportunities for households owning little land and relying on precarious livelihoods such as daily labour.
- Increase efforts to promote access to formal education to improve household livelihood opportunities and food consumption.

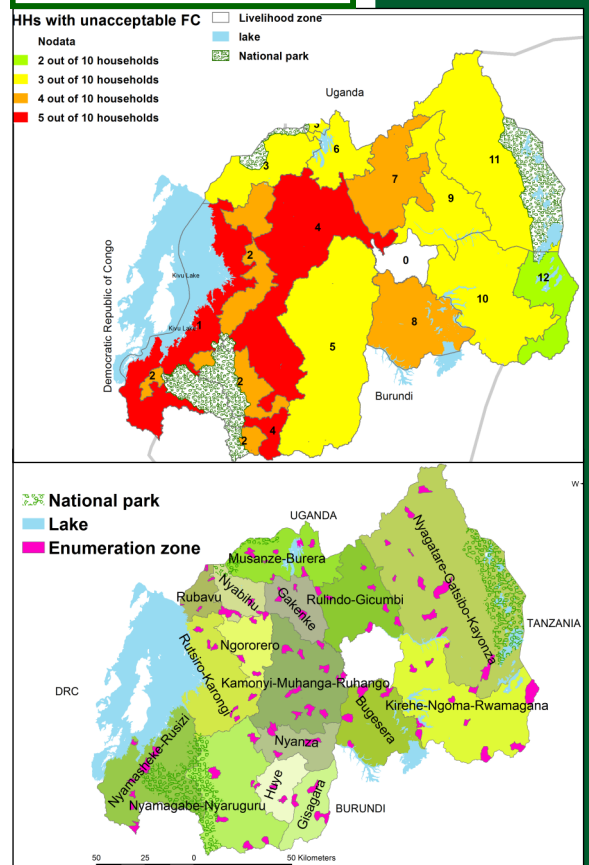
During season 2014 B, a dry spell affected a large proportion of rural households. 85% of households reported a reduction in crop production, with households in the Eastern and Southern provinces more affected than those elsewhere. Food security was worse among those households affected by the dry spell,

particularly as households reported having limited quantities of food stocks remaining from previous seasons. If there is no improvement in climatic conditions during season 2015 A (September 2014 – February 2015), the food security situation in Rwanda could become worse.

In light of the effects of the dry spell during season 2014 B, the following specific recommendations are made:

- Strengthen water access for agriculture during the dry season and rain shortage period using irrigation and marshland development.
- Focus particularly on Bugesera and other districts in the Eastern Province as well as Gisagara, Nyanza and other districts in the Southern province.

**Figure 10: Prevalence of food insecurity by livelihood zone in September 2014**



## Background and Methodology

The FNSMS was set up in 2010 by the Ministry of Agriculture and Animal Resources (MINAGRI) and the World Food Programme. This round was coordinated through a Technical Committee composed of MINAGRI (chair), WFP (co-Chair), the National Institute of Statistics (NIS), FEWSNET, the Swiss Agency for Development and Cooperation (SDC) and World Vision. Since September 2010, the FNSMS is conducted in March and September of every year.

For FNSMS round 9, data was collected in September 2014. Round 9 used the same sample as round 8, which was different to previous rounds but kept the same sample size. 1344 households were interviewed with a closed questionnaire. The households were selected for interview through a 2 stage sampling approach within 16 strata (groups of districts): 96 enumeration zones (see Figure 11) were randomly selected (cells at the administrative level). Within each

cell 14 households were interviewed. Anthropometric measurements were taken for 655 children under 5 (weight and height, and MUAC for those older than 6 months) and 1087 women aged 15 to 49 (only MUAC).

Ten teams composed of 3 enumerators and 1 team leader collected data. They underwent two days of refresher training on food security, data collection tools and the use of Personal Digital Assistants. Data analysis was done using SPSS for food security and ENA (using 2006 WHO standards) for nutrition calculations. Data is representative in all provinces excluding Kigali City, as it only targets rural areas. When comparisons were made between groups (demographic, geographical or other) the statistical significance of the differences were tested using SPSS tests.

Food security information and nutrition indicators calculated by the FNSMS largely concur with previous reports on food security and nutrition (e.g. 2012 CFSVA and

2010 RDHS) and the demographics of the sampled households are in line with population demographics as reported by the 2012 census. Households living in Kigali City were excluded from the sample and no micronutrient deficiencies were tested.

The methodology remained the same as FNSMS rounds 3, 5 and 6, 7 and 8. The use of PDAs allowed to collect data using electronic questionnaires. GPS was used to locate villages where interviews were conducted.

**Figure 11: Distribution of the sampled FNSMS enumeration zones in Rwanda**

Nr	Livelihood zone
0	Kigali city
1	Lake Kivu Coffee and food crop
2	West Congo-Nile Crest Tea and food crop
3	Northwest Volcanic Irish Potato
4	East Congo-Nile Highland Sub-sistence Farm.
5	Central Plateau Cassava and Coffee
6	Northern Highland Beans and Wheat
7	Cent-North High Irish Potato, Bean and Veg
8	Bugesera Cassava
9	Eastern Plateau Mixed Agriculture
10	Southeastern Plateau Banana
11	Eastern Agropastoral
12	Eastern Semi-Arid Agropastoral