The first round of Food and Nutrition Security Monitoring System (FNSMS) survey conducted in September 2010 was designed to provide statistical information on households at the sub-provincial level. The survey was conducted at stratum level. Strata were defined using administrative limits which were either single districts or groups of districts. Thus a total of 16 strata were defined including 8 districts and 8 groups of districts excluding Kigali-Ville (See the map at the end of this bulletin).

Data were collected in households. Within each stratum, the sampling was done using the National Institute of Statistics of Rwanda (NISR) two-stage sampling procedure to select households which is a standardized approach that for statistical studies in Rwanda. “Zones de dénombrement” (ZD, enumeration zones) were selected first, followed by households using 2007 population estimates based on the 2002 census. A total of 96 ZD were selected for household level data collection. In each ZD, 14 households were selected and altogether, 1344 households were visited. Especially for the nutrition aspect, over 1385 children 6-59 months were assessed for anthropometric signs of malnutrition

In this FNSMS survey, both food security and nutrition data were collected. Nutrition data were analysed using the WHO Anthro while food security data were analysed with SPSS and Ms Excel software. While the study was conducted in the most rigorous manner possible, some limitations must be acknowledged. The Sampling Frame only included rural ZDs and excluded Kigali City which accounts for 9.4% of the total population of Rwanda. Thus the results only represent rural population of Rwanda. Also, due to the lack of tools, information regarding the prevalence of micro-nutrient deficiencies such as anemia as well as access to healthcare services for pregnant and lactating mothers and their infants was not treated in this FNSMS round. This will be addressed in future surveys.

In general, households demonstrated good levels of food security in several parts of Rwanda as based on the latest round of food security and nutrition monitoring system (FSMS) that took place in September 2010. This food and nutrition security monitoring was carried out in 16 Strata (see map at end) namely; Nyagatare-Gatsibo-Kayonza, Kirehe-Ngoma-Rwamagana, Bugesera Musanze-Burera, Gakenke, and Rurindo-Gicumbi, Rubavu, Nyabihu, Ngororero, Rutshuru-Karongi, Nyamasheke-Rusizi, Kamonyi-Muhanga-Ruhango, Nyanza, Huye, Gisagara, and Nyamagabe-Nyaruguru.

Households in most strata were in a category of acceptable food consumption and showed a low coping strategy index in most areas meaning low stress levels. The majority of households were relying on the market as a source of food and this was also reflected with a high percentage of expenditure. This situation could be attributed to the onset of agricultural season A meaning most household food stocks have diminished. The sample of about 1,300 households, 1,385 children and 1,300 mothers for this FNSMS, was generated from the sample used for the 2009 Comprehensive Food Security Vulnerability Analysis Survey. This FNSMS indicates that agricultural activities, livestock production and casual labour/manual labour are the main livelihood activities around rural Rwanda

1 The sample for nutrition in the Food Security and Nutrition Monitoring System is not representative and therefore figures provided are only indicative and not representative.

2 Rural Rwanda covers all parts of the country except Kigali
**Household Food Consumption**

The Food Consumption Score allows comparisons of frequency and diversity of food eaten within a household and establishes a threshold of dietary quality dividing the population into three groups of food consumption, namely poor, borderline and acceptable.

The graph on the right shows the distribution of households interviewed into these groups. Overall, 68% of sampled households were found to have adequate consumption in September 2010 whereas 25% had borderline and 7% within the poor consumption group.

This means that the majority of households are at an adequate level of food consumption. This situation could better if the survey was not conducted during the onset of the agricultural season A when most household food stocks from previous harvest have diminished due to the fact that the harvest usually last about three months (2009 CFSVA). In terms of strata, the strata with the highest proportion of households reporting poor consumption are Gisagara (34%), and Ngororero (25%) located in the Southern and Western Provinces respectively. This situation could be attributed to the poor soil fertility in these areas. The highest proportion of household with adequate consumption was reported in Bugesera (97%) and Musanze-Burera (94%) strata.

Analysis of dietary diversity, illustrates that households with ‘borderline’ consumption eat the equivalent of starch 7 days a week; pulses and oil 3 days a week, and hardly any meat. Those with ‘poor’ consumption eat starch 6 days a week; pulses and oil 1 day a week and no meat. Households with ‘good/acceptable’ consumption reported eating the equivalent of starch 7 days a week, pulses 6 days; oil 5 days; meat 1 day and sugar is consumed 2 days a week (see figure on the left).
Household Food Sources

In general, household food sources are dominated by purchase (60%) followed by own production (36%). All other sources represent between 0 and 1%. Gifts and aid come at the last place with 0.8 and 0.1% respectively. This means that the majority of households are able to get food by their own efforts. Comparing food sources and food consumption groups, purchase comes at the first place with a proportion around 60% for all consumption groups, followed by own production (see figure on the right).

Reliance on gifts, exchange, borrowing and aid is minimal at 1%. The high reliance on the market can be explained by the fact that the survey was conducted during the onset of agriculture season A when food stocks were diminishing. Based on results of the 2009 CFSVA, household food stocks usually last a period of three months and thus by the end of the season, most household stocks have diminished. By strata, Rubavu and Nyabihu reported the least reliance on own production at 14% and 8% respectfully. Bugesera and Gisagara reported the highest reliance on own production at 60% and 50% respectively.

Household Expenditure

In general, households reported spending over 56% of their expenditure on food with 44% on non food items (see the figure below).

This is in line with households increased reliance on the market for their food as indicated above. In food items, households spent more on cereals and pulses (15 and 13% respectively). In non food items, expenditure on debts (5%), construction, clothing, rent, soap and alcohol/tobacco (4%) come at the first place.

Concerning the spatial distribution, there are small variations across strata but highest percentage food expenditure is reported in Nyanza (67%), Rubavu (65%), Nyagatara-Gatsibo-Kayonza (62%) and Huye (60%). Gisagara reported the lowest percentage food expenditure at 40% for September 2010. This high percentage of food expenditure may be linked to households’ high reliance on the market as a source of food. Expenditure patterns are similar across all three consumption groups. All show higher percentage food expenditure than non food expenditure.
Livelihood Activities

In order to better understand the relative importance of different livelihood sources, households were asked to estimate the percentage contribution of their livelihood activities to their total income. The chart on the left shows the relative mean contribution of different activities to household income. The overall findings for September 2010 demonstrate that agriculture has the highest contribution (52%) followed by livestock activities (18%) and casual labour (7%). As shown, there is a large contribution of agriculture to household income despite the reporting above that households are relying less on own production as their source of food. This high household reliance on agriculture for their income could be due to the continued government's consolidated efforts to boost agricultural production. In addition, the government is also promoting a shift from traditional crops to more diversified intensive cropping. Contribution of livestock production to household income could be attributed to the President's initiative to enable every household to own at least one cow in order to improve livelihoods and nutrition at household level. On the other hand, contribution of casual labour is also an important source of income and although a contradiction, could be associated with the onset of the agricultural season meaning there were less labour opportunities available to households. Analysis by strata showed that contribution of agriculture to household income is better in Nyanza, Huye, Rusizi-Nyamasheke, Musanze-Burera, Nyagatare-Gastsibo-Kayonza, Kirehe-Rwamagana-Ngoma and Bugesera. The contribution of casual labour activities are better in Nyanza, Rutsiro-Karongi, and Rubavu while contribution of livestock activities are better in Gisagara, Nyamagabe-Nyaruguru, Huye, Ngororero, Gakenke, Rurindo-Gicumbi, Bugesera and Musanze. It should also be noted that most households do agriculture along with the other activities.

Coping Strategies and Shocks

The Coping Strategies Index (CSI) measures the frequency and severity of actions taken by households in response perceived food shortage. A higher CSI score means more stress and potentially declining food security. As can be seen on the graph to the left, all strata show a high CSI score in September 2010 with the exception of Rurindo-Gicumbi which reported a lower score. The highest stress levels are reported by Gakenke (27.1), Kirehe-Ngoma-Rwamagana (21.1) and Rusizi-Nyamasheke (20.2). Similar across all strata, the strategy reported by most households is reducing adult meals in order to benefit children which are done on an average of 4 out of 7 days.
For the September reporting, the most reported shocks by households were limited rainfall/drought (42.9%); human illnesses (20.2%); high crop pests and diseases (13.0%); high food prices (11.8%) and reduced income of household member (10.1%), as illustrated in the graph to the left. An increase in food prices is consistent with increased percentage food expenditure reported above while loss of employment could be associated with reduced casual labor opportunities reported above under household livelihoods.

Health and Nutrition
In this FSMS data collection round, over 1385 children 6-59 months were assessed for anthropometric signs of malnutrition. Of those, 3.8% were wasted or low weight-for-height, while 11.3% were moderately underweight (low weight-for-age) and 51.3% were chronically malnourished or moderately stunted (low height-for-age). Comparing nutrition by sex, it was found that wasting, stunting and underweight is higher among boys than girls (see table to the right). In addition, 29% of boys had fever compared to 26% of girls, two weeks prior to the survey. Reports of diarrhoea were also higher among boys than girls at 17% and 16% respectively.

Children in the 18-47 months age group had the highest rates of stunting while underweight and wasting was highest among children in the 12-17months age group (see graph to the right). Overall Global Acute Malnutrition (GAM) and Severe Acute Malnutrition (SAM) are still within acceptable limits at 6.6% and 3.8% respectively. By strata, GAM is highest in Nyagatare-Gatsibo-Kayonza (13%), Gakenke (12%), Kirehe-Ngoma-Rwamagana(9%), Nyabihu (9%) and Rusizi-Nyamasheke (9%).

It is important to note that human diseases were among the most reported shocks by households in September 2010 especially in Rusizi-Nyamasheke and thus could be linked to the high malnutrition and morbidity reported here. In connection with the above indicators, the prevalence of GAM in Nyagatare-Gatsibo-Kayonza and, Gakenke can be attributed to the high level of stress related to shocks such as illness and drought, reported in these areas.
SAM rates, on the other hand, were highest in Nyabihu (9%), Rusizi-Nyamasheke (9%) and Nyagatare-Gatsibo-Kayonza (7.8%) while stunting is highest in Bugesera at 63% with a prevalence ranging between 42 – 60% in all other stratas. An influencing factor to SAM is the incidence of sickness as reported in Rusizi-Nyamasheke where the rates of fever/cough and diarrhoea (40% and 30% respectively) were relatively high.

With regards to stunting, further information regarding the prevalence of micro-nutrient deficiencies such as anemia as well as access to healthcare services for pregnant and lactating mothers and their infants is needed. Given the long-term nature of chronic malnutrition or stunting, monitoring its prevalence in relation to food security over a prolonged period can provide valuable insight to the factors causing such a high prevalence.

**Geographical distribution of strata**