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## Fill the Nutrient Gap

NATIONAL SUMMARY REPORT



March 2019





## Fill the Nutrient Gap Rwanda | SUMMARY REPORT

### **Despite progress, malnutrition remains widespread in Rwanda**

The effects of malnutrition are globally recognised as being devastating and far-reaching. Malnutrition is widespread across Rwanda – 38 percent of children under 5 are stunted, and 37 percent are anaemic. Many children are therefore unlikely to reach their full mental and physical potential. The burden varies by region and progress has been hampered by several factors including: widespread poverty despite economic growth; low agricultural productivity and over-reliance on staple food crops; food price fluctuations that disproportionately impact the poorest; unaffordability of nutritious foods; and gender inequalities in decision-making power, time-use, and sexual and reproductive rights.

Addressing malnutrition in a sustainable manner in Rwanda should take a gender-sensitive lifecycle approach that engages men and women with a special focus on the most nutritionally vulnerable: children under 2 years of age, adolescent girls, and pregnant and lactating women (PLW). It must include a range of context-specific, targeted interventions that engage stakeholders across multiple sectors.

### **Fill the Nutrient Gap (FNG) in Rwanda: Purpose**

The overarching objective of the Fill the Nutrient Gap (FNG) in Rwanda was to bring stakeholders together to identify and prioritize context-specific policies and programmes across food, health and social protection systems and other relevant sectors with the aim of improving nutrient intakes of target groups. The results from the FNG at national level are to be used to inform and complement the new National Nutrition Policy, among other evidence-based strategic documents. The FNG team in the WFP country office

identified a need for an additional FNG analysis that would be used to inform WFP and stakeholder programmes in refugee camps<sup>1</sup>.

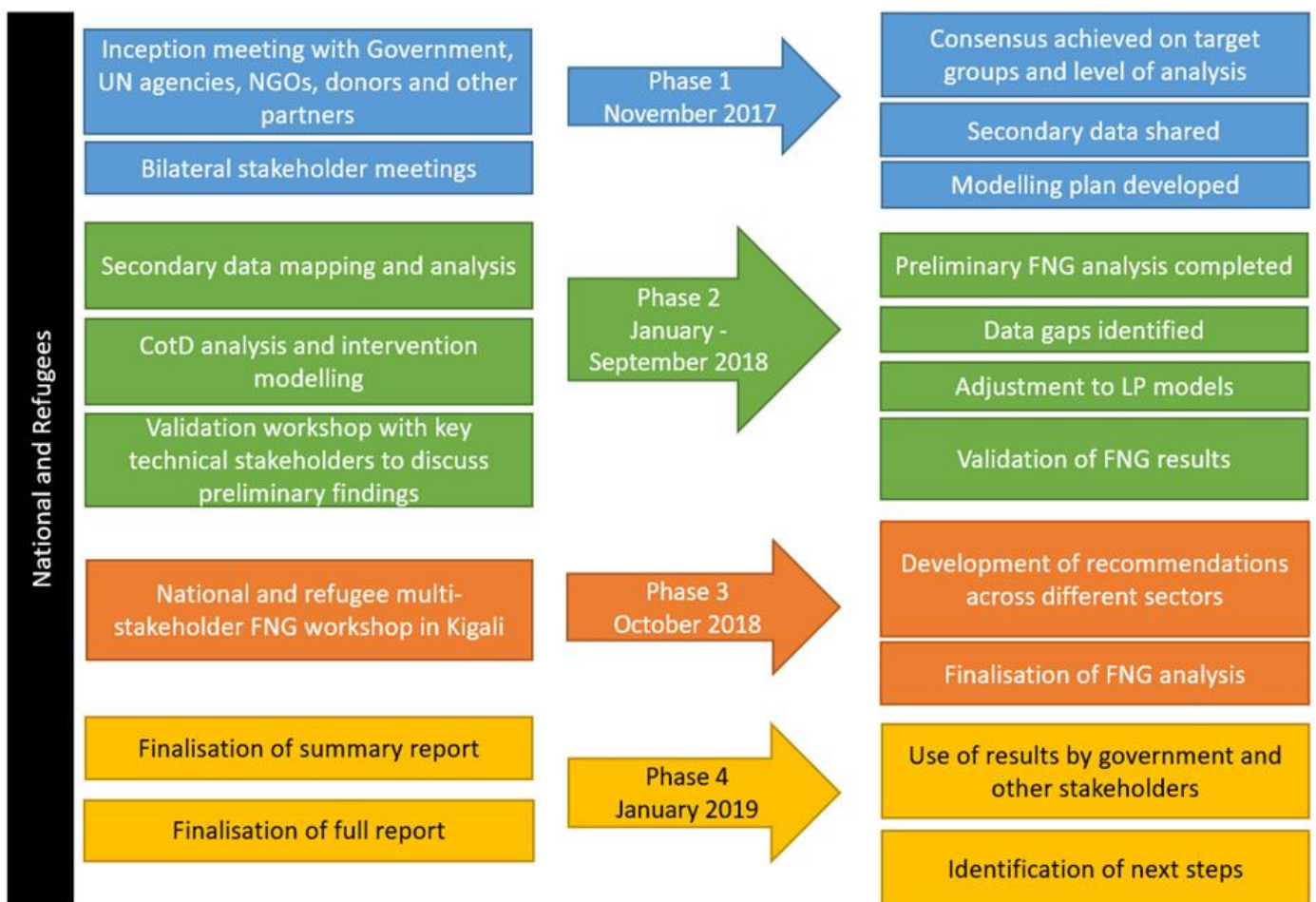
### **FNG in Rwanda: Process**

The FNG process in Rwanda ran from November 2017 to October 2018. The analysis comprised a comprehensive literature review of available secondary data sources in combination with linear programming (LP) using the Cost of the Diet (CotD) software. The aim was to understand context-specific barriers to adequate nutrient intake and to model potential interventions to improve access to nutrients, particularly from nutritious foods that can fill the existing gap.

The National FNG assessment was led by the National Early Child Development Program (NECDP) with technical assistance from the World Food Programme (WFP) country office, regional bureau and Rome headquarters, and the United Nations Children's Fund (UNICEF) Rwanda which provided technical and financial support. At the start of the process, the Rwanda FNG team met with stakeholders from government, non-government, United Nations (UN), academia and the donor community. Here the FNG process was introduced, secondary data sources were collated and possible interventions, entry points and transfer mechanisms were identified to test in the CotD modelling. Over 110 data sources were identified and reviewed. The CotD analysis intervention modelling was then carried out and the findings were presented internally to all programme staff, then to the National Food and Nutrition and Water, Sanitation and Hygiene Technical Working Group chaired by NECDP. Finally, they were presented to the wider stakeholder group as part of a workshop to formulate recommendations. The detailed FNG process in Rwanda is illustrated in Figure 1.

<sup>1</sup>See separate Refugee summary.

**Figure 1:** The FNG process followed in Rwanda.



## FILL THE NUTRIENT GAP: SITUATION ASSESSMENT FOR MULTI-SECTORAL DECISION MAKING ON THE PREVENTION OF MALNUTRITION<sup>2</sup>

Malnutrition has two direct causes: inadequate nutrient intake and disease. As its name specifies, the Fill the Nutrient Gap (FNG) assessment focuses on gaps in nutrient intake to inform a country's national policies and actions that can be taken to improve nutrition among their population, with a focus on the most vulnerable.

The FNG assesses the extent to which people have choices. It considers the availability, physical access and affordability of nutritious foods required for adequate nutrient intake. It seeks to understand why households make the food choices they do. Finally, it identifies context-appropriate interventions that can be implemented by different sectors to enable people to choose more nutritious foods, and hence fill nutrient gaps.

The assessment comprises two components:

1. A country-specific review of secondary data and information on factors that reflect or affect dietary intake. This includes malnutrition trends over time, characteristics of the food system and food environment, and population behaviour related to food and feeding.
2. An assessment of the extent to which economic barriers prevent adequate nutrient intake. This uses the Cost of the Diet linear programming

software developed by Save the Children (UK), and includes modelling of the economic impact of possible interventions to increase nutrient intake and fill nutrient gaps.

Malnutrition cannot be addressed by one sector alone. FNG is designed to inform multisectoral decision-making and therefore engages stakeholders from all sectors including food, health, agriculture, education, and social protection systems throughout the assessment.

It is the stakeholders who define the scope and focus of the assessment. They contribute data and sources of information for identification of context-specific barriers and entry points, and develop a shared understanding of the issues and possible solutions. They then identify appropriate nutrition-specific and nutrition-sensitive interventions that can be implemented by different sectors using their existing delivery platforms. These could be social safety nets, food processing and markets, antenatal care, school feeding programmes and others.

The FNG assessment has been developed by the WFP with technical support from: The University of California Davis; the International Food Policy Research Institute (IFPRI, Washington DC); Epicentre (Paris); Harvard University (Boston); Mahidol University (Bangkok); Save the Children (UK); and UNICEF.

At the end of 2018, the FNG had been conducted in 17 countries and started in another 8.

<sup>2</sup>For more information on the concept and the method of the analysis, see Bose I, Baldi G, Kiess L, de Pee S. The 'Fill the Nutrient Gap' Analysis: An approach to strengthen nutrition situation analysis and decision-making toward multisectoral policies and systems change. *Matern Child Nutr* 2019; DOI: 10.1111/mcn.12793

## COST OF THE DIET ANALYSIS

The Cost of the Diet (CotD) software uses LP to understand the extent to which poverty, food availability and prices may affect the ability of people to meet their nutrient needs. Using price data collected from markets or from secondary sources, the software calculates the amount and combination of local foods that are needed to provide individuals or households with their average needs for energy and their recommended intakes of protein, fat and micronutrients<sup>3</sup> at the lowest possible cost. These diets are calculated within defined constraints to prevent the inclusion of unrealistic types or amounts of food and the provision of excessive amounts of nutrients.

The FNG approach defines the Staple Adjusted Nutritious Diet: the lowest cost nutritious diet that includes the typical staple foods and excludes foods that are considered taboo<sup>4</sup>. This diet is referred to as the 'nutritious' diet throughout this summary. Population expenditure data is compared to the cost of this nutritious diet and is used to estimate the proportion of the population that would not be able to afford a nutritious diet. This non-affordability can be estimated and compared across different regions, seasons or countries.

As part of the FNG process in Rwanda, food price data from the National Institute of Statistics Rwanda for 83 commodities were provided at provincial level. The Integrated Household Living Conditions Survey (EICV 4) was used to determine staple preferences and estimate food expenditure and average household size. The period of the EICV 4 data was from October 2013- October 2014 and the price data used reflects this timeframe. A nutritious diet was estimated for a model household of five members which included a

breastfed child of 12–23 months, a school-aged child of 6–7 years, an adolescent girl of 14–15 years, a lactating woman and an adult man. Two portions of the staple foods were included in the nutritious diet for all household members per day, except for the child aged 12–23 months, who received one portion a day<sup>5</sup>.

To estimate affordability, percentiles of per capita monthly food expenditure data were generated at the provincial level (including urban and rural) using EICV 4 data. These per capita figures were multiplied by the number of individuals in a typical household (5) to estimate monthly household food expenditure. These data were then compared to the cost of the nutritious diet and used to estimate the proportion of the population that would not be able to afford this diet.

The CotD software is also used to model interventions with the objective of improving the affordability of a nutritious diet for individuals and/or households. The selection of potential interventions for modelling was informed by the secondary data review and stakeholder consultations. It included:

- Improving access to local nutritious foods through kitchen garden and smallholder livestock interventions.
- Fortification and biofortification of staple foods.
- Improving access to Specialised Nutritious Foods for specific target groups.
- Micronutrient supplementation.
- Determining adequate cash transfer values for vulnerable households targeted through social safety net programmes.

The modelled interventions are theoretical and would need to be accompanied by complementary behaviour change interventions to stimulate nutritious choices.

<sup>3</sup>s defined by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO). Needs for 9 vitamins and 4 minerals are included.

<sup>4</sup>This diet is not intended to reflect what individuals or households are currently eating, nor should it be used to develop food-based recommendations or dietary guidelines.

<sup>5</sup>Please refer to the full report for the list of staple preferences applied. The staple adjustments were made to ensure that the CotD software included the primary foods consumed in the diet but still had the flexibility to meet nutrient requirements from other foods.



# FNG in Rwanda: Findings<sup>6</sup>

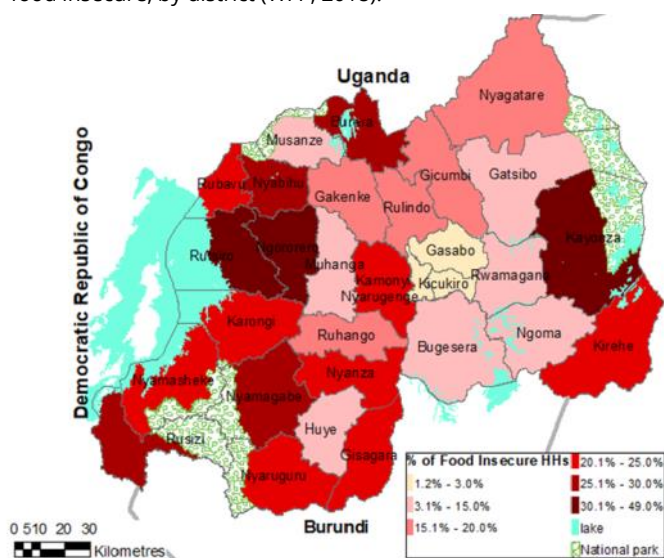
## 1.

**DESPITE SIGNIFICANT IMPROVEMENTS, MALNUTRITION REMAINS THE NUMBER ONE RISK FACTOR FOR DISEASE IN RWANDA. ALTHOUGH MOST HOUSEHOLDS ARE FOOD SECURE, DIETS ARE DOMINATED BY STAPLE FOODS. TO ACHIEVE NUTRITION SECURITY, DIETS MUST DIVERSIFY AND INCLUDE ANIMAL SOURCE FOODS.**

The Institute for Health Metrics and Evaluation (IHME) listed malnutrition as the top driver of death and disability<sup>7</sup> in Rwanda in 2017. Though most Rwandan households are food secure, improvements between 2015 and 2018 have been limited: 81 percent were food secure in 2018 versus 80 percent in 2015. Figure 2 shows that households in the Western province are the least food secure (70%) whilst households in Kigali City are the most food-secure (98%).

According to the 2018 Comprehensive Food Security Vulnerability Assessment (CFSVA), 76 percent of Rwandan households have an acceptable Food Consumption Score (FCS)<sup>8</sup> and improvements have been made particularly in the North and West of the country in the period 2015-2018. Despite this, the West has the highest percentage of households with an average poor or borderline FCS at 7 percent and 32 percent respectively, as highlighted in Figure 3. Their diets consisted mainly of starchy staple foods, pulses, oil, sugar and some vegetables with no consumption of meat, dairy or fruit. Even households with an acceptable FCS only consumed meat, dairy and fruit twice a week each. This consumption pattern has not changed substantially since the Comprehensive Food

**Figure 2:** The percentage of households which are classified as food insecure, by district (WFP, 2018).



<sup>6</sup> Complete details of the findings, a full list of data sources used, and references can be found in the full report.

<sup>7</sup> As measured in disability-adjusted life years.

<sup>8</sup> Food consumption score: WFP's standard indicator for measuring food insecurity, used to define categories of household food insecurity. It is calculated using the frequency of consumption of different food groups by a household during the 7 days before the survey.

Security and Vulnerability Analysis (CFSVA) in 2012 when households reported consuming these foods once a week. To achieve nutrition security, diets must be diversified to include more vegetables, fruit and animal source foods, the latter being a very important source of essential micronutrients such as iron and calcium, and the only source of vitamin B12.

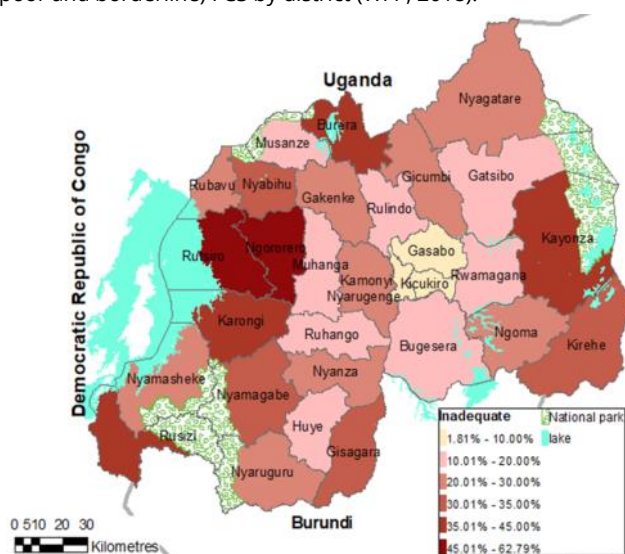
## 2.

**DESPITE PROGRESS IN THE NUTRITION SITUATION, STUNTING AND ANAEMIA IN CHILDREN REMAIN PUBLIC HEALTH PROBLEMS. PREVALENCE VARIES GEOGRAPHICALLY AND IS IMPACTED BY SOCIO-ECONOMIC FACTORS. MORE INFORMATION ON MICRONUTRIENT DEFICIENCIES IS NECESSARY TO FULLY UNDERSTAND THE NUTRITION SITUATION. WATER, SANITATION AND HYGIENE CONDITIONS (WASH) HAVE IMPROVED SUBSTANTIALLY BUT RURAL AREAS ARE STILL AT INCREASED RISK OF DISEASE.**

The Cost of Hunger study in Rwanda estimated that child undernutrition caused an average loss of 504 Billion Rwandan Francs (RWF) in 2012, which accounted for 11.5 percent of GDP. Malnutrition continues to be an important challenge with widespread consequences for Rwanda's people and economy.

The latest Rwanda Demographic and Health Survey (RDHS) from 2015 shows that despite a 10 percent reduction in stunting over the past ten years, prevalence remains high at 38 percent for children under 5 years, as shown in

**Figure 3:** The percentage of households with inadequate (both poor and borderline) FCS by district (WFP, 2018).





**Figure 4:** Malnutrition characteristics of children under 5 years of age (National Institute of Statistics, 2015).

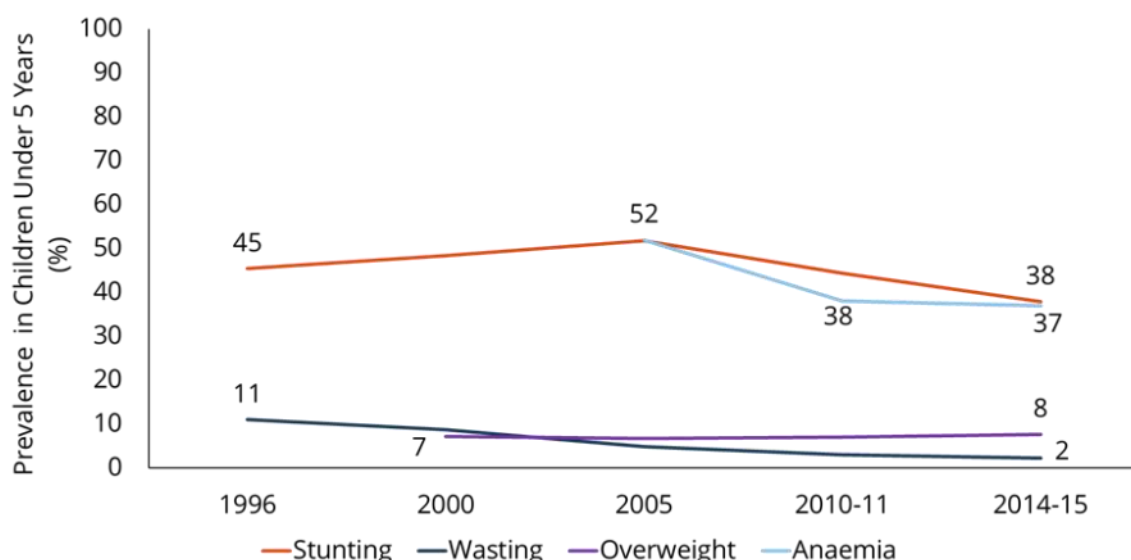
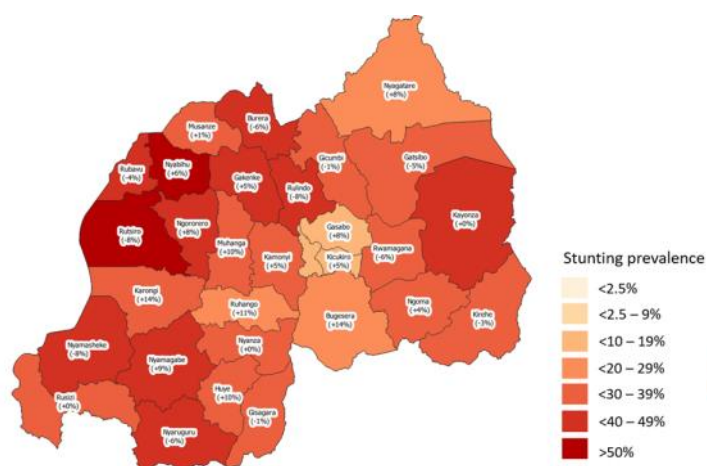


Figure 4. The 2018 CFSVA found that stunting prevalence is continuing to decline, albeit slowly, to a prevalence of 35 percent. Similarly, anaemia has fallen from 52 percent in 2005 to 37 percent in 2015. Rwanda has the lowest prevalence of wasting in the East African Region at 2 percent. In the last 10 years, overweight and obesity has emerged as a new nutrition threat among children under 5 years. By 2015 it affected 8 percent of them, constituting one of the largest increases of overweight among children in sub-Saharan Africa.

Stunting rates vary by region with the worst rates found in Western Rwanda, as shown in Figure 5. Three Western districts have stunting rates surpassing 50 percent and, in the same areas, prevalence has declined slower than in the rest of the country over the past 10 years. Conversely, the greatest stunting reduction has taken place in the north of the country declining by 11 percent from 2010 to

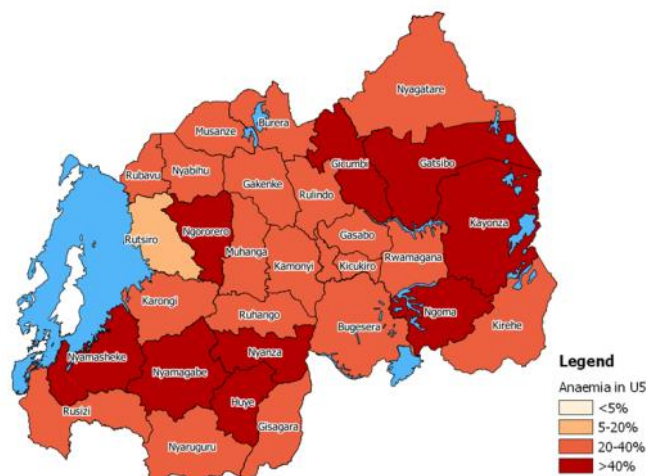
**Figure 5:** The prevalence of stunting in children under 5 years of age by district in 2018. Numbers in brackets represent the percentage point difference from the 2015 RDHS figures (WFP, 2018).



2015. The most recent CFSVA found that the greatest reduction in stunting between 2015 and 2018 occurred in Kigali City (down to 13 percent from 25 percent) but found little change in the other provinces.

Anaemia is a moderate to severe public health problem as defined by the World Health Organization (WHO) criteria, surpassing 20 percent in all but one province and above 40 percent in 9 provinces as shown in Figure 6. There is little data on causes of anaemia and on other micronutrient deficiencies. It is likely that a large proportion of anaemia is due to inadequate dietary iron intake, with only 20 percent of children under 5 consuming iron-rich foods. It is estimated that two percent of anaemia is attributable to malaria. Anaemia could also be attributed to worms and parasitic infections although 80 percent of children receive deworming tablets biannually.

**Figure 6:** The prevalence of anaemia in children under 5 years of age by district (National Institute of Statistics, 2015).



In the 2015 RDHS, stunting and anaemia were higher in rural areas and reductions over the years have been lower compared to urban areas. Though children in the wealthiest households were somewhat protected from stunting and anaemia in 2015, over 20 percent of children were still stunted and anaemic in the top quintile. This emphasizes that wealth is relative and that the wealthiest may still be nutrition-insecure. It also reinforces the multifaceted nature of malnutrition and that different types of interventions are required in different wealth groups.

In 2015, children whose mothers were underweight, i.e., have poor nutritional status, were more likely to be stunted and wasted<sup>9</sup>. Higher educational attainment of mothers was associated with lower rates of stunting and anaemia in their children. Research shows that Rwandan children whose mothers give birth to them before the age of 20 are more likely to be anaemic. Boys are significantly more stunted (38%) than girls (32%) according to the 2018 CFSVA. When comparing the host and refugee populations, the prevalence of anaemia and wasting are similar. However stunting is 14 percent lower in the refugee population on average. This is because the refugee camps are controlled settings that allow for: 1) high coverage of nutrition-specific and -sensitive interventions; 2) implementing partners with higher staffing levels and; 3) increased complementarity across sectors. Much could be learnt from the refugee settings and applied at scale to the host communities to reduce stunting rates.

Significant improvements have been made in the WASH sector in the last 15 years but rural areas require more attention. Sixty nine percent of rural households have access to an improved source of drinking water compared to 91 percent of urban households, whilst 10 percent of rural households have a dedicated place for handwashing compared to 20 percent in urban households.

### 3.

**RWANDA HAS THE BEST BREASTFEEDING PRACTICES IN THE WORLD. HOWEVER, COMPLEMENTARY FEEDING IS SUBOPTIMAL AND PRECLUDES ADEQUATE NUTRIENT INTAKE IN CHILDREN AGED 6-23 MONTHS. BARRIERS TO ADEQUATE INFANT AND YOUNG CHILD FEEDING (IYCF) INCLUDE FOOD AVAILABILITY, AFFORDABILITY OF NUTRITIOUS FOODS, MOTHER'S HEALTH, FOOD CULTURE AND HABITS, AND CAREGIVER'S TIME CONSTRAINTS.**

Rwanda has the highest prevalence of exclusive breastfeeding in the world with 87 percent of children exclusively breastfed for their first six months of life. Ninety-six percent continue receiving breastmilk until their first birthday and 87 percent until their second birthday. Breastfeeding rates do not significantly change with wealth quintiles, gender, or mother's level of education.

Data on undernutrition disaggregated by a child's age (in months) suggest that IYCF practices could improve. Stunting prevalence doubles from 10 percent in children under 6 months to 21 percent for children aged 9-11 months and reaches 49 percent among children aged 18-23 months. This suggests that nutrient intake is inadequate during the complementary feeding period. For many children, complementary feeding does not begin at the recommended age: only 57 percent begin receiving solid, semisolid, or soft foods at 6-8 months, as required to meet nutritional needs. Nineteen percent of children receive complementary foods and liquids too early whilst 38 percent receive these foods too late.

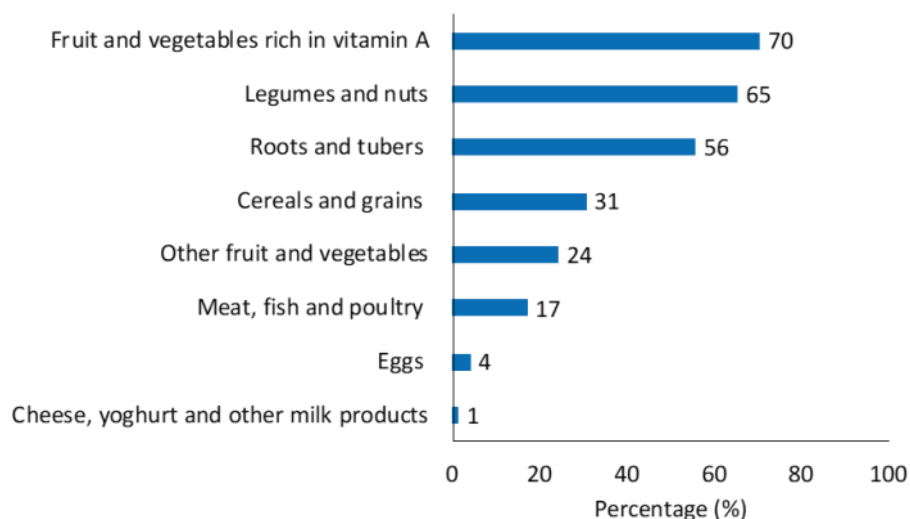
There was little improvement in the percentage of children aged 6-23 months who were fed a Minimum Acceptable Diet (MAD), an indicator that combines adequate dietary diversity and feeding frequency<sup>10</sup>. Between 2010 and 2015, diversity and frequency reached only 17 percent and 18 percent respectively according to the RDHS. The 2018 CFSVA also found little improvement in MAD, which was estimated nationally at 17 percent. Between 2010 and 2015, achieving Minimum Dietary Diversity (MDD) was a greater barrier than achieving Minimum Meal Frequency (MMF) but, according to the RDHS, both indicators were low at 30 percent and 47 percent of children respectively. However, the 2018 CFSVA found the two indicators reversed, with 40% of children achieving MDD and 34% achieving MMF. On average, children must eat at least one more food group and have one additional feeding time per day to achieve MAD. According to the 2015 RDHS, MAD varies by region, Kigali having the highest (30 percent) and the Western region the lowest (11 percent). The indicator improves by wealth quintile, though even in the highest quintile it does not surpass 31 percent. Children whose mothers reach MDD for women are also more likely to reach MAD (31 percent against 14 percent).

Figure 7 shows that children's diets mainly comprise fruit and vegetables rich in vitamin A, legumes and nuts, and tubers, while few are fed animal source foods. Although the consumption of the other foods should also be increased, the low consumption of animal source foods is similar to that of the household, indicating that food availability and economic access are important barriers to

<sup>9</sup> Information not available for anaemia.

<sup>10</sup> Minimum Meal Frequency is defined as breastfed infants age 6-8 months receiving meals of complementary foods two or three times per day, with one to two snacks as desired. Breastfed children aged 9-23 months should be fed meals three or four times per day, with one to two snacks. Non-breastfed children should be fed meals four or five times per day, with one to two snacks. Minimum Dietary Diversity is defined as four food groups for breastfed and non-breastfed infants.

**Figure 7:** Percentage of children aged 6-23 months by type of foods consumed in the day or night preceding the interview (National Institute of Statistics, 2015).



adequate complementary feeding. Other barriers included: time poverty<sup>11</sup>, especially for women who carry the greater burden of unpaid domestic work and caretaking of children in addition to economic work; food habits that deem certain nutrient-rich foods inappropriate for young children; and perceived poor health of mothers which limits the duration and frequency of breastfeeding.

## 4.

**THE NUTRIENT NEEDS OF WOMEN AND ADOLESCENT GIRLS ARE NATURALLY HIGH. ALTHOUGH THE RATE OF THINNESS IS DECREASING, OVERWEIGHT AND OBESITY ARE RISING AMONG WOMEN OF REPRODUCTIVE AGE. DATA IS LACKING ON THE DIETS OF WOMEN AND ADOLESCENT GIRLS, MICRONUTRIENT DEFICIENCIES AND THE CAUSES OF OVERWEIGHT AND OBESITY. GENDER INEQUALITY AT HOUSEHOLD LEVEL MAY BE NEGATIVELY IMPACTING WOMEN, GIRL'S AND CHILDREN'S NUTRITION.**

While thinness in women aged 15-49 has declined to 6 percent, overweight and obesity increased by 8 percent from 2000 to 2015 and is more than three times as high as that of men (21 percent compared to 6 percent). Overweight and obesity in women is highest in Kigali and in higher wealth quintiles, while thinness is higher in lower wealth quintiles and the South and East. The IHME data shows that the dietary risk factors related to increasing overweight and obesity are on the rise, including high blood pressure and high fasting plasma glucose, the 6th and 7th ranked risk factors driving death and disability in Rwanda. The rising rates of overweight in women concurrent with high stunting in children indicates that Rwanda must start taking preventative action against the

double burden of malnutrition<sup>12</sup>.

Nineteen percent of women aged 15-49 are anaemic. Great progress was made in reducing anaemia in women from 2005 to 2010 (from 26 percent to 17 percent in 2010) but it has since slowed. As with children, the causes of anaemia in women are unclear and a micronutrient survey is recommended. Almost three quarters of women (73 percent) sleep under a mosquito net during pregnancy whilst 49 percent of women received deworming tablets during pregnancy.

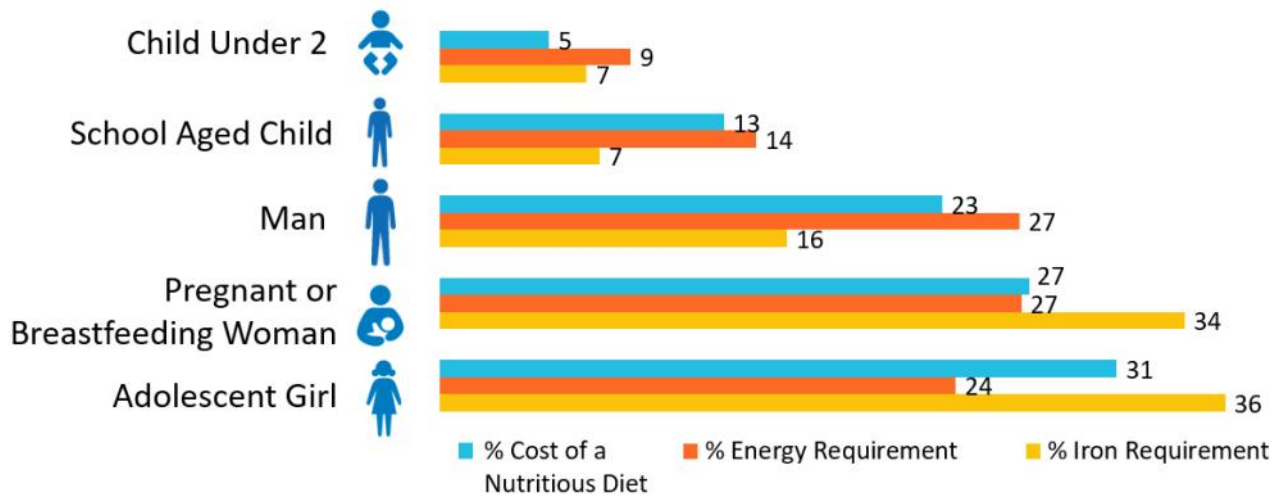
A driving factor of anaemia could be a lack of iron rich foods in women and girl's diets, which are dominated by staples and contain little animal source foods and iron-rich vegetables. Only 3 percent of women took iron tablets or syrup for 90 days or more as recommended during pregnancy (68 percent took them for the first 60 days). This low intake of iron, particularly during pregnancy, is impacting the nutrition of their children. The prevalence of anaemia in children aged 6-8 months is very high at 72 percent, suggesting poor iron stores laid down during pregnancy.

The CotD analysis reveals that PLW and adolescent girls require 58 percent of household cost of a nutritious diet, making their nutrient needs the most expensive to meet. Figure 8 shows that the cost of the diet is even higher for the adolescent girl than the PLW, hence a focus on meeting the nutritional needs of this target group is essential to ensure they are well nourished before pregnancy to safeguard their own health and that of their future children. Figure 8 shows the proportion of energy and iron requirements for the household attributed to different members. This highlights that iron needs drive the cost of a nutritious diet in Rwanda, not energy as is often assumed.

<sup>11</sup> Defined as lack of time due to multiple responsibilities (domestic work, care work, market and non-market economic activity).

<sup>12</sup> The double burden of malnutrition is characterized by the coexistence of undernutrition with overweight and obesity, or diet-related noncommunicable diseases, within individuals, households and populations, and across the life course.

**Figure 8:** Proportion of household cost of the nutritious diet, energy and iron requirements by household member.



For example, the adult man requires the highest proportion of energy but a much lower proportion of iron than the PLW and the adolescent girl.

Gender inequalities may be negatively impacting women’s nutrition. Rwanda has made important strides in gender equality, especially at government level, but inequalities remain, particularly at community and household levels where girls and women remain underrepresented in decision-making. Women hold primary responsibility for children, spending on average 25 hours per week on unpaid domestic work compared to 8 hours for men. Men’s roles in nutrition are mostly limited to provision of money to purchase food, and women spend on average 7 hours more per week on cooking than men. Despite labor force participation rates being equal for men and women (87 percent), culturally men are seen as the family breadwinners. Research has shown that Rwandan women who are unable to decide on daily tasks and take charge of their time are 19 percent more likely to have stunted children.

It is important to address sexual and reproductive health for adolescent girls and boys to safeguard their nutrition and that of their future children. According to the latest RDHS, 7 percent of women had given birth before age 18, and 43 percent by age 22. Girls are ten times more likely than boys to become HIV+, which suggests adolescent girls have inadequate access to, and decision-making power over, their sexual and reproductive health.

Comparatively little is known about girls aged 10-14 as they are generally subsumed into the category of children, a data gap which makes it difficult to assess trends and needs. Concurrently, girls aged 15-18 are often subsumed into the category of women of reproductive age. A lack of data and evidence makes it difficult to learn from existing programming and identify the most effective and sustainable interventions to protect girls of different ages.

## 5.

### **RWANDA’S EFFORTS TO PRIORITIZE CHILDREN’S PRIMARY EDUCATION HAVE BEEN SUCCESSFUL BUT SECONDARY SCHOOL ENROLMENT REMAINS LOW. AS GIRLS ENTER ADOLESCENCE, PERSISTING GENDER INEQUALITIES PUT THEM AT AN ACADEMIC DISADVANTAGE. GIVEN THE ASSOCIATIONS BETWEEN MATERNAL EDUCATION AND CHILD MALNUTRITION, KEEPING GIRLS IN SCHOOL IS AN IMPORTANT PRIORITY.**

According to the World Bank’s Human Capital Index (HCI), children in Rwanda can expect to complete 6.5 years of pre-primary, primary and secondary school by age 18. However, when years of schooling are adjusted for quality of learning, this is only equivalent to 3.8 years, which is a learning gap of 2.7 years. School enrolment drops substantially after primary school for both girls and boys (from an average of 95 percent enrollment in primary to 36 percent in secondary school). Girls slightly outnumber boys in primary (by 2 percent) and secondary school (by 3 percent) but their advantage over boys disappears as they progress through adolescence. Age disaggregation shows that though twice as many girls as boys aged 13-15 are in lower-secondary school, by the last year of secondary school enrolments equalize, and by age 17, boys outnumber girls.

Persisting gender inequalities also put girls at an academic disadvantage. Girls spend on average 4-6 hours more per week on unpaid domestic work compared to boys. A third of men admitted sexually abusing an adolescent girl whilst they themselves were at school, indicating that persisting gender-based violence may be a barrier to girls finishing school. Seven percent of girls have had a child by the age of 18; some may leave school due to pregnancy.

Consequently, boys score higher on both the lower and upper secondary school leaving exam. Given the

associations between maternal education and child malnutrition presented in finding 2, keeping girls in school and ensuring the quality of their education is essential.

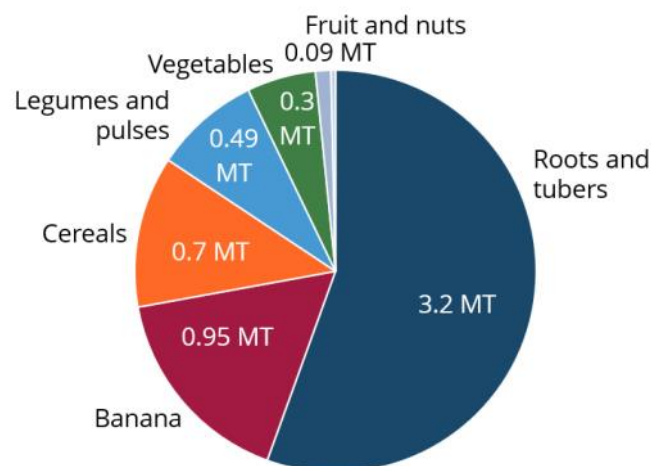
School meals are a crucial platform to improve the nutrient intake for school aged children. Currently there are three school feeding programmes operating in Rwanda, two of which are government funded and operated. One is a Ministry of Agriculture funded school milk programme, called One Cup of Milk per Child, which serves milk twice per week to students in pre-primary and grades 1-3. The other is a Ministry of Education funded programme that subsidizes meals cooked at secondary schools. The third programme is implemented by WFP, providing a cooked lunch to primary and lower secondary schoolchildren in food insecure districts<sup>13</sup>. However, coverage of these programmes is low and, taken together, they only reach 10% of all students in pre-primary, primary and secondary schools in Rwanda.

## 6.

**DESPITE AGRICULTURE BEING THE MAIN ECONOMIC LIVELIHOOD IN RWANDA, IT IS NEGATIVELY IMPACTED BY LOW CROP AND ANIMAL PRODUCTION. STAPLE FOOD PRODUCTION DOMINATES AGRICULTURE. INCREASING CROP DIVERSIFICATION IS CRUCIAL TO SUPPORT BETTER NUTRITION. FORTIFIED AND BIOFORTIFIED FOODS, TOGETHER WITH NUTRITION-SENSITIVE SMALLHOLDER INITIATIVES, COULD CONTRIBUTE TO BETTER NUTRITION AT HOUSEHOLD LEVEL.**

Agriculture accounts for 33 percent of Rwandan GDP, and 75 percent of total employment (84 percent for women, and 65 percent for men). Though the majority of Rwandan households own land, most plots (79 percent) are smaller than one hectare. The vast majority of land remains under

**Figure 9:** Agricultural production in Rwanda, in 1,000 million tons (National Institute of Statistics, 2018).



<sup>13</sup> The ration is a hot meal consisting of fortified maize meal, beans, vegetable oil and salt.

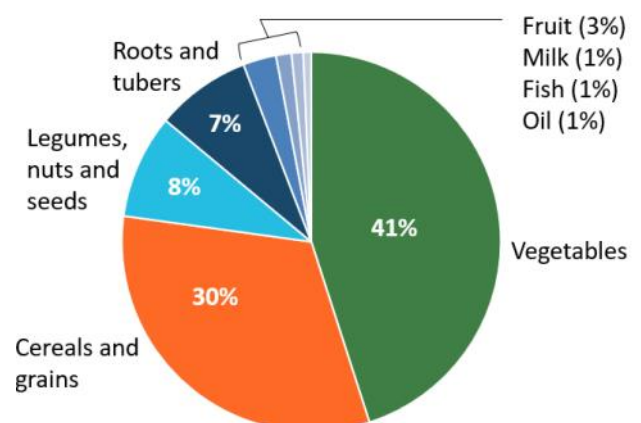
subsistence farming, and crop yields remain below potential. Very little use of irrigation accentuates the impact that weather conditions have on household's agricultural production and on food and nutrition security. Besides seasonal shocks exacerbated by climate change, the greatest challenges to agricultural production and sustainability include shrinking biodiversity; small plot sizes; degrading soils and natural resources; and poor access to post-harvest and agriculture extension services. Findings of the 2018 CFSVA highlight how food insecurity predominantly impacts smallholder farmers and agricultural workers.

Currently, most of Rwandan agricultural production consists of roots and tubers, bananas, and cereals (Figure 9). Though these foods are important in providing for the population's energy requirements, their content of essential micronutrients is much lower than that of fruit, vegetables and animal source foods. In 2017, Rwanda produced 10 million tons of roots and tubers for every 1 million tons of fruit and vegetables. Household food production reflects national production trends, with an average of three types of crops being grown per household, the most common being beans, maize, and sweet potato. The CotD analysis emphasizes the importance of diversifying the food supply, as seen in Figure 10.

FNG in Rwanda explored different avenues for improving access to, and consumption of, nutritious foods through diversification.

- Fortification could present cost-effective opportunities to improve nutrition. Fortified complementary foods are locally produced and could be a suitable solution to improve nutrient quality of complementary feeding and school meals. Home fortification using micronutrient powders (MNPs) has been proven to

**Figure 10:** Percentage quantities of different food constituting the modelled nutritious diet for the household (WFP, 2018).



reduce anaemia in Rwandan children. Staple food fortification could be appropriate for the adult population. However, concerns about food adulteration among Rwandan consumers presents a potential barrier to demand for processed fortified foods.

- Biofortification could be effective, inexpensive, and sustainable, but has fewer micronutrients than post-harvest fortification. Beta carotene-rich orange flesh sweet potatoes are the most common biofortified food available in Rwanda. High iron beans also offer good potential to improve iron intake. Randomized controlled trials have shown that consumption of iron-biofortified beans significantly improved iron status in Rwandan women. However, beans that are high in phytic acid limit the absorption of the additional iron bred into them, thus limiting efficiency for some varieties.
- Kitchen gardens are nutrition interventions that have been prioritised by the government. Sixty four percent of households have a kitchen garden and 97 percent of the food grown is consumed. Kitchen gardens seem to increase the availability of nutritious food and allow households to eat vegetables more regularly. The presence of a kitchen garden in a school has been shown to directly influence the composition of school meals. However, the limited quantity and variety of vegetables grown results in limited improvements in dietary diversity: on average, only two types of vegetables are grown, and the yields are low. Kitchen gardens require labour, time and financial investments which schools and poorer households may struggle to provide.
- The one cow per household programme (GIRINKA) has been prioritised by the government. It has a potential positive impact on household dietary diversity and nutritional status. Importantly, the programme's success depends on the quality of household targeting and training, and on the proper management of the livestock to avoid unintended harmful impacts on health, hygiene, and sanitation, e.g. animal faeces in household living spaces.

Food safety and quality is of concern in Rwanda and foodborne illnesses caused by microbial hazards contribute significantly to the burden of disease in the country. In 2013 a study in Rwanda estimated that food related illnesses such as watery diarrhea, bloody diarrhea, cholera and typhoid fever resulted in 887 Disability Adjusted Life Years (DALYs)<sup>14</sup> per million inhabitants. The primary concerns are: 1) contamination of certain staple foods as found by recent studies, especially aflatoxins in maize, which exceed regulatory limits; 2) foodborne pathogens found in farm vegetables and agricultural water caused by high-risk farming practices; 3) the lack of awareness amongst vendors about the possible contamination of fresh products; 4) the possible negative impacts on dairy, egg and meat products linked to contamination of animal feed; and 5) the policy gap on food quality and safety management.

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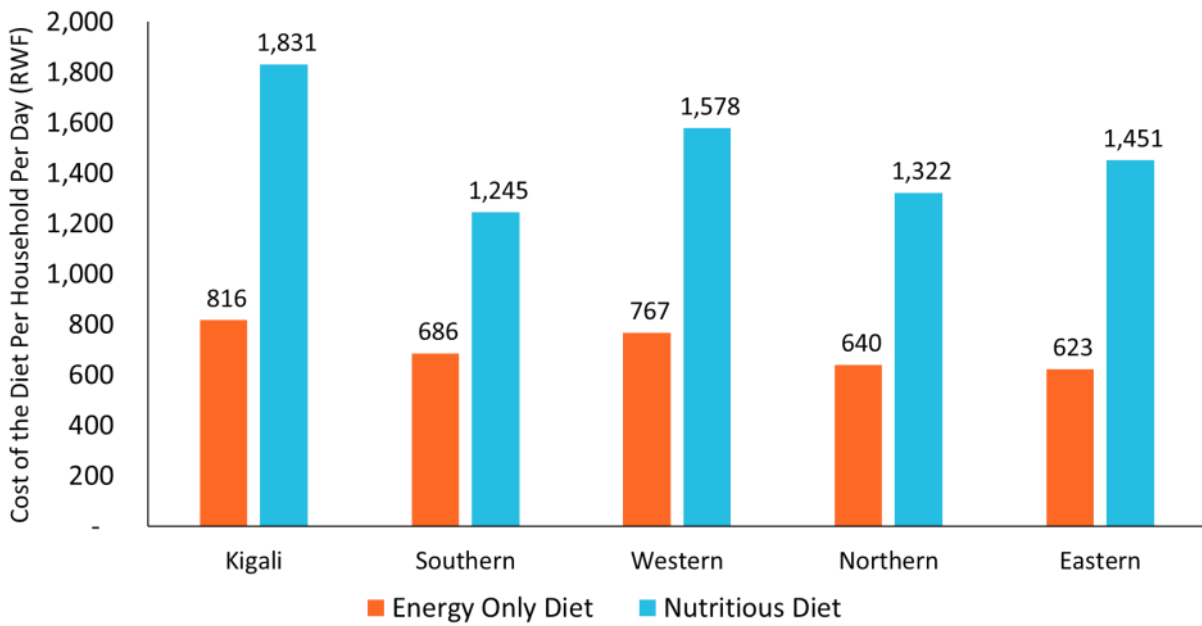
## 7.

**IT WOULD COST A HOUSEHOLD TWICE AS MUCH TO PURCHASE A NUTRITIOUS DIET THAN A DIET THAT ONLY MEETS KILOCALORIE NEEDS. ECONOMIC ACCESS IS A BARRIER TO HOUSEHOLDS CONSUMING A NUTRITIOUS DIET, PARTICULARLY FOR HOUSEHOLDS IN THE WESTERN PROVINCE. ANIMAL PRODUCTS AND FISH PROVIDE ESSENTIAL MICRONUTRIENTS BUT ARE ALSO THE MOST EXPENSIVE COMMODITIES.**

The CotD analysis found that it would cost a household about twice as much to purchase a diet that meets nutrient needs compared to a diet that meets only energy needs (Figure 11). In Kigali, for example, the lowest cost combination of food that meets the energy needs of the household would cost 816 RWF per day, whereas the lowest cost combination that meets the nutrient needs would cost 1,831 RWF per day. Disaggregating by rural and urban areas shows that nutritious diets are somewhat more expensive in the urban areas, while the cost of the energy-only diet does not vary substantially between urban and rural areas.

<sup>14</sup> DALYs is the summary measure used to give an indication of overall burden of disease. One DALY represents the loss of the equivalent of one year of full health. Using DALYs, the burden of diseases that cause premature death but little disability can be compared to that of diseases that do not cause death but do cause disability.

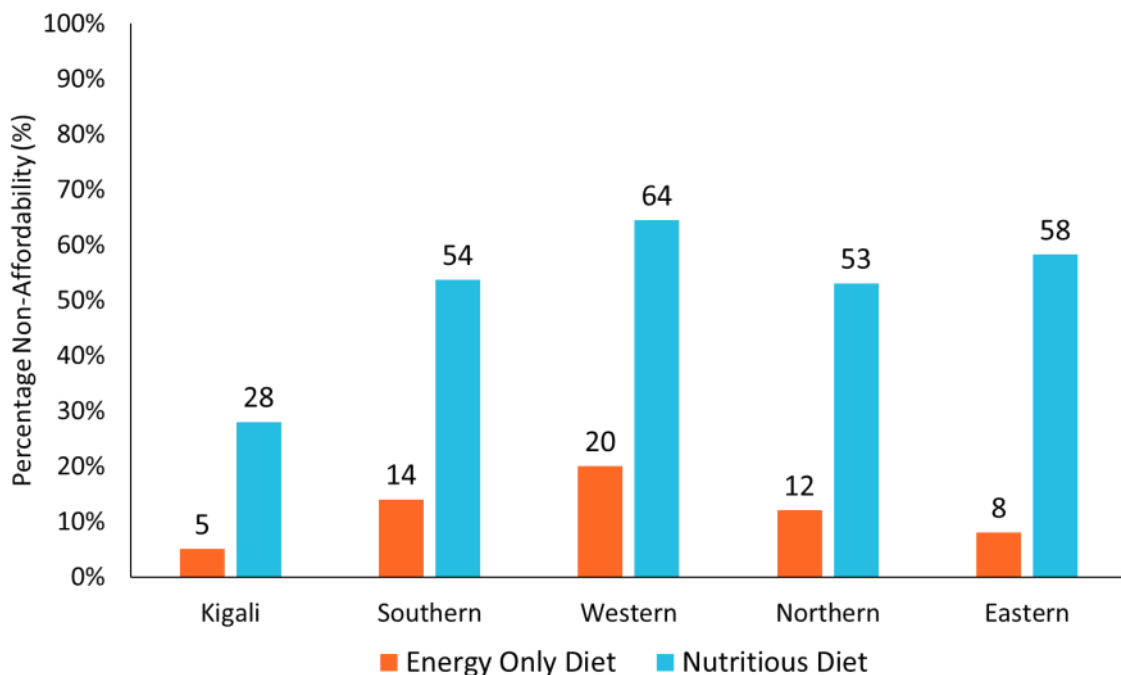
**Figure 11:** Cost of the energy-only and nutritious diets for the household, in RWF per day.



While the energy-only diet generally requires the consumption of a few staple foods, such as sorghum, maize, sweet potato and cassava flour, a nutritious diet requires thirteen additional foods to meet the household's micronutrient needs. The CotD software identified soybeans, groundnuts, dodo (amaranth leaves), avocado, small dried fish and milk as nutrient-rich, locally available and affordable foods. Milk and small dried fish provide an important contribution to protein, vitamin B12 and calcium requirements but were some of the most expensive commodities (with eggs and meat) according to the NISR price data.

On average, 55 percent of the population of Rwanda would not be able to afford to purchase a nutritious diet. The percentage of households that could not afford a nutritious diet varies by geographical region, as shown in Figure 12. Kigali has the lowest percentage of households that would not be able to afford a diet that meets their nutrient needs (28 percent), while the Western region has the highest (64 percent). The energy-only diet would be unaffordable for 5 percent (Kigali) to 20 percent (Western region) of households.

**Figure 12:** Percentage of non-affordability of the energy-only and the nutritious diets by region.



## 8.

### ACCESS TO MARKETS IS GOOD AND THIS IS WHERE HOUSEHOLDS PURCHASE THE MAJORITY OF THEIR FOOD. HOWEVER, RELIANCE ON MARKETS ALSO MAKES HOUSEHOLDS VULNERABLE TO FOOD PRICE VOLATILITY.

Households in Rwanda source 65 percent of their food from markets on average. Households that do not practice agriculture source a higher percentage of their food from markets compared to agricultural households (80 percent compared to 60 percent). Rwanda has a remarkable number of markets, yet, in 11 districts, households living in villages without a market take on average more than 90 minutes to reach one.

A large portion of household expenditure is dedicated to food - from 55 percent of household expenditure in Ubudehe<sup>15</sup> category 1 to 33 percent in Ubudehe category 4. Poorer households are therefore highly vulnerable to food price volatility. Food prices have steadily increased in Rwanda and seasonal food spikes occur throughout the year. The CFSVA 2018 found that a higher proportion of households experience difficulties in accessing food during the rainy months of October, November and April as shown in Figure 13. Seasonal food insecurity has increased in recent years: in 2018, 40 percent of households were seasonally food insecure, up from 20 percent in 2012.

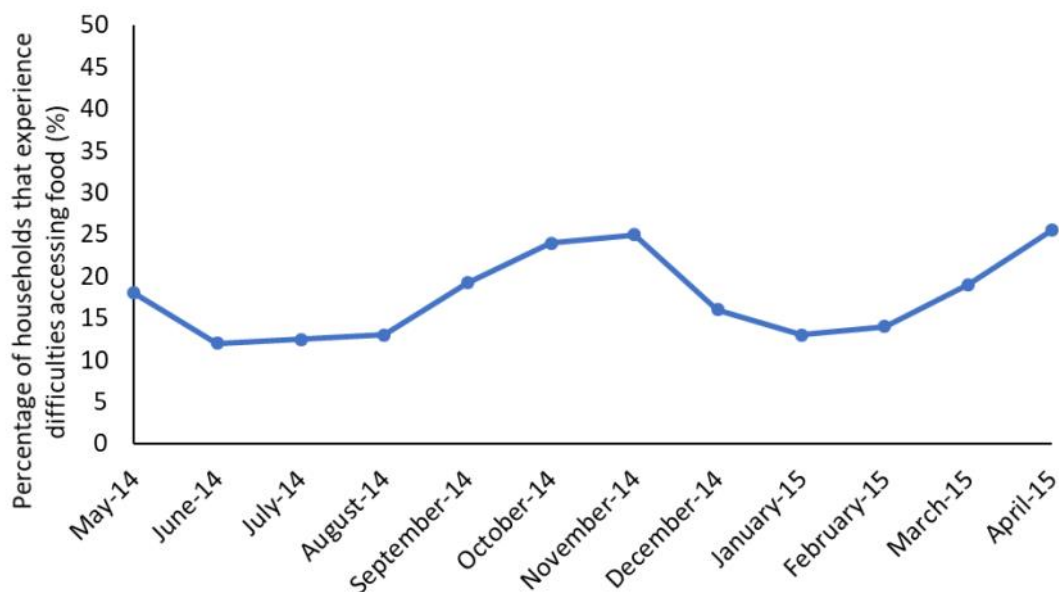
## 9.

### CONTEXT SPECIFIC INTEGRATED PACKAGES OF INTERVENTIONS HAVE THE GREATEST POTENTIAL TO IMPROVE AFFORDABILITY OF A NUTRITIOUS DIET.

Eliminating malnutrition as a public health problem cannot be achieved by any single intervention alone from any one sector. Instead, it requires concurrent actions from various sectors and needs to involve a range of actors. An assortment of interventions for individual target groups and the household were modelled using the CotD, shown in Table 1, as guided by the secondary data analysis and stakeholder consultation.

- Providing Fortified Blended Food (FBF, i.e. SuperCereal plus) is the most effective intervention for reducing the cost of meeting nutrient needs for the child aged 6-23 months, although the provision of fresh foods and a Small-Quantity Lipid Based Nutrient Supplement could also make important contributions.
- FBF (i.e. SuperCereal) is also the most effective for reducing the cost of the diet and improving access to nutrients for both adolescent girls and PLWs.
- Nutrition-sensitive school meals have a strong potential for improving the nutrition of the school-aged child. An improved meal consisting of Option 2 combined with fish from a school pond, vegetables from a school garden, and milk twice a week had the largest impact - however, the impact is nearly equally good for a combination of Option 2 and only milk.
- GIRINKA was the most effective intervention at household level to reduce the cost of the diet<sup>16</sup>.

**Figure 13:** The percentage of households that experienced difficulties in accessing food by month from May 2014 – April 2015 (WFP, 2015).



<sup>15</sup> Local term for wealth group. Ubudehe 1 is the poorest and category 4 is the wealthiest.

<sup>16</sup> This result is based upon households consuming 5 litres of milk per day which, although reported by beneficiaries, may be idealistic.



**Table 1:**The targeted and household interventions modelled using the CotD software to improve nutrient intake.

Intervention	Transfer Modality	Entry Point(s)
<b>Target group: Child 6-23 months</b>		
Fortified blended food (SuperCereal Plus) (FBF)	In-kind Voucher	Health Social Protection
Ongera (Multiple Micronutrient Powder)		
Small-quantity lipid based nutrient supplement (SQ-LNS)		
Fresh food voucher (for a dozen eggs and 1 kg dodo leaves per week for vulnerable households, i.e. those with a child under 2 years, an adolescent girl and a PLW)		
<b>Target group: School Aged Child</b>		
Nutrition-sensitive school meals Option 1: Fortified blended food and sugar Option 2: Fortified maize flour, beans and fortified oil	In-Kind Own Production	Education Agriculture
School vegetable garden		
Two cups of milk per child per week		
School fish pond		
<b>Target groups: Adolescent Girl Pregnant and Lactating Woman</b>		
Iron and folic acid supplement (IFA)	In-kind Voucher	Health Agriculture Social Protection Markets (Private Sector) Education (for the adolescent girl)
Multiple micronutrient tablet (MMT)		
Fresh food voucher (for a dozen eggs and 1 kg dodo leaves per week for vulnerable households, i.e. those with a child under 2 years, an adolescent girl and a PLW)		
FBF (SuperCereal)		
<b>Target group: Household</b>		
Fortified foods: Maize flour and oil	Market (at same price as unfortified / biofortified counterpart)	Agriculture Markets Private Sector
Biofortified foods: Orange flesh sweet potatoes and high iron beans		
Nutrition-sensitive kitchen garden (total of 40 kg per month: maize, orange flesh sweet potatoes, banana, dodo leaves, Swiss chard, pumpkin, pumpkin leaves, onion)	Own production	Agriculture
Poultry intervention (21 eggs a week)		
GIRINKA programme (5 litres of milk consumed per household per day)		

The CotD analysis shows that packages comprising targeted nutrition interventions, household interventions, cash transfers, and social behaviour change communications could have a large effect on improving the affordability of a nutritious diet for a household. The most effective interventions for reducing the cost of meeting individual target groups' nutrient intakes were combined into a package with the most effective household interventions as shown in Table 2. Figure 14 summarizes the impact of this package on the affordability of a nutritious diet, separately and in combination.

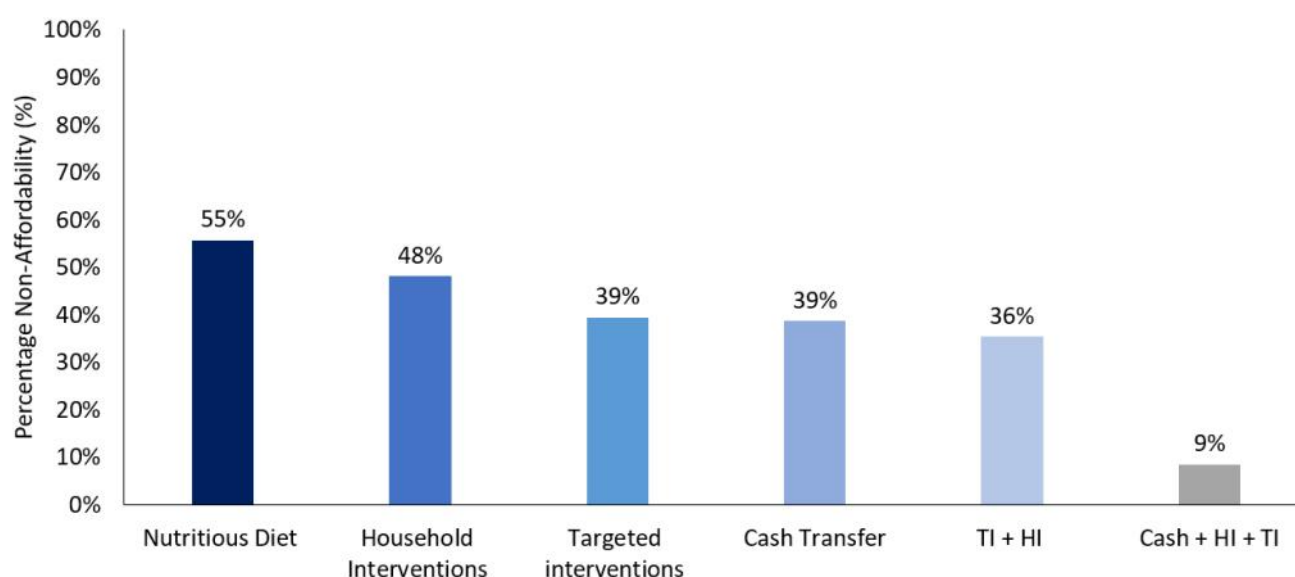
These results demonstrate the possible benefits that could

result from increasing household nutrient access via a package of interventions delivered across different platforms and by different sectors. The underlying assumption for such interventions is that adequate demand creation strategies are in place to ensure that cash transfers or vouchers provided would be spent on nutritious food and are consumed by the target individual(s). Another important assumption is that funds are available to finance these programmes in a sustained manner. A next important step would therefore be to cost the different suggested intervention packages to see the feasibility and sustainability of each, and look at the cost of less effective but possibly less costly options.

**Table 2:** A package that combines the most effective interventions in reducing the cost of a nutritious diet, as indicated by the CotD analysis.

Target Group	Intervention
Child 6-23 months	FBF
School aged child (6-19 years)	Nutrition-sensitive school meals (Option 2 combined with milk, fish, fruit and vegetables)
Adolescent girl Pregnant and lactating woman	FBF
Household	Fortified foods available in the market Nutrition-sensitive kitchen garden
Cash transfer (unconditional/conditional)	9,660 RWF a month <sup>17</sup>

**Figure 14:** The potential impact that a package of multisectoral interventions may have on the affordability of a nutritious diet for households in Rwanda.



\* TI and HI: Targeted<sup>18</sup> and household interventions

<sup>17</sup> Based upon households spending 46 percent of the VUP direct support cash transfer on food (food expenditure determined by the 2018 Comprehensive Food Security and Vulnerability Analysis.)

<sup>18</sup> Targeted interventions are defined as interventions aimed specifically at nutritionally vulnerable groups (i.e. child 6-23 months, school aged child, adolescent girl and PLW).



## FNG in Rwanda: Recommendations

During the dissemination workshop chaired by NECDP and attended by the National Food, Nutrition and Water, Sanitation and Hygiene Technical Working Group and the wider stakeholder group, the main findings of the FNG analysis were shared and discussed with the participants to formulate recommendations. Participants then formed five work groups, each focused on a different target – children under 2 years; children 2-9 years; adolescent girls; pregnant and lactating women and the household.

Each group was asked to identify and then prioritise the issues for their target group. They were then asked to brainstorm ideas for interventions that would address the issues they had prioritised. During this section of the group work they were asked to list existing interventions, improvements to existing interventions and new interventions from different sectors including agriculture, health/nutrition, WASH, education, social protection, gender, private sector and livelihoods.

After this exercise, participants were asked to select a package from these interventions that would address the issues they prioritised for their target. They were required to discuss the linkages that could exist between their chosen interventions and ensure that their package included interventions from at least three sectors. Finally, they were asked to identify the enabling environment required for their package to be successful. They had to consider the following: policy and strategy frameworks; coordination and synergies across sectors; resources; and data gaps.

The recommendations developed by the stakeholders were in line with those developed in the Rwanda Country Strategic Review of Food and Nutrition Security. The following sections outline the priority issues identified by stakeholders, the recommendations for interventions, and

the enabling environment. These have been aligned with the recommendations from the strategic review where relevant.

The following issues were prioritised by stakeholders based on the FNG findings:

### **Nutritionally vulnerable target groups:**

1. Children aged 6-23 months - low attainment of MAD;
2. Children under five and women aged 15-49 - high prevalence of anaemia;
3. School aged children - lack of information on health and nutritional status;
4. Adolescent girls - academic disadvantage due to high domestic workload, gender-based violence and pregnancy;
5. Women - gender disparities at household level (particularly related to workload) that may be negatively impacting on their nutrition;
6. All target groups - Poor dietary diversity and low consumption of high iron (animal source) foods;

### **Household:**

1. Perception of low level of nutrition knowledge;
2. Poor dietary diversity and low consumption of high iron (animal source) foods at household level;
3. High percentage of households that cannot afford to purchase a nutritious diet.

Based on these issues, recommendations for interventions and the enabling environment were made as summarised in Tables 3 and 4.



**Table 3:** The recommended interventions identified during the FNG stakeholder workshop and the relevant recommended interventions identified by the Rwanda Country Strategic Review of Food and Nutrition Security. The numbering in the third column aligns with the recommendation numbering format used in the country strategic review report.

Entry Point	Recommended Interventions based on FNG Analysis and Stakeholder Workshop	Recommended Interventions based on Country Strategic Review of Food and Nutrition Security Report
Agriculture	<p>An integrated package of improved smallholder livestock and kitchen garden interventions with a focus on eggs, milk and high iron vegetables, combined with a strong component of SBCC for nutrition and WASH education (see more details in nutrition education category).</p> <ul style="list-style-type: none"> <li>Investment in biofortified seed varieties should be provided through the kitchen garden intervention</li> <li>Incentives and subsidies should be provided to the poorest households, specifically Ubudehe 1 with a pregnant or lactating woman or child under 2 years.</li> </ul> <p>This package should be applied at the community level and in schools.</p>	<p>B2. Revise the existing input subsidy scheme through improved targeting of programme beneficiaries and increased access of poor households to quality seeds, fertilizers and limes.</p> <p>B7. Scale up existing programmes that promote nutritionally diverse foods (e.g. vegetable kitchen gardens, mushroom production, fruit, poultry and fish farming). This must be supported by evaluation studies which assess the effectiveness of these programmes in increasing dietary diversity.</p> <p>D8. Strengthen the GIRINKA Programme and other livestock programmes to achieve impact at scale, including through the distribution of small livestock to poor and vulnerable households that are land constrained.</p>
	<p>Monitor and evaluate smallholder production initiatives such as kitchen gardens and GIRINKA for their effectiveness in improving nutrition outcomes.</p>	<p>B7.(See above)</p> <p>E9. Institute impact research requirement of programmes supporting homestead production e.g. GIRINKA, kitchen gardens and small livestock rearing.</p>
Social protection/ social safety nets	<p>Increasing nutrition sensitivity of social protection schemes such as through the provision of fortified blended foods for poor households with a child under 2 years and PLW.</p> <p>Continue to pilot and scale up cash transfer schemes to vulnerable households and link this with SBCC initiatives to promote the purchase of nutritious foods.</p> <p>Improve the use of community saving and lending groups to improve household's economic access to nutritious foods and enable households to better mitigate against shocks. Link participants of the VUP – Public Works scheme to these groups.</p>	<p>A5. Update the existing Social Protection Policy to reflect how social safety net interventions are linked to Food and Nutrition Security (FSN) outcomes and ensure alignment with the Economic Development and Poverty Reduction Strategy-3, Vision 2050 and the Sustainable Development Goals.</p> <p>D1. Continue the expansion of social safety net interventions to include individuals in lower economic classes, those who are food insecure, and households with children affected by malnutrition.</p> <p>D4. Include Ubudehe categories 2 and 3 among beneficiaries receiving fortified blended food with government subsidies; develop and enforce an exit strategy with clear timelines for each category.</p> <p>D16. Develop an effective shock-responsive/sensitive social protection system (including an early warning system, contingency plans, financing and adequate institutional arrangements) that will strengthen risk mitigation and rapid response systems to weather shocks and disasters that induce food insecurity among poor households during difficult years.</p>



Entry Point	Recommended Interventions based on FNG Analysis and Stakeholder Workshop	Recommended Interventions based on Country Strategic Review of Food and Nutrition Security Report
<b>School based interventions</b>	<p>Use school meals as a platform to create demand for nutritious foods either through smallholder production or from the private sector. The following options were proposed:</p> <ul style="list-style-type: none"> <li>• Scaling up the one cup of milk per child programme and linking to families who are enrolled in the GIRINKA programme, to create demand for their milk and provide them with additional income that could be spent on nutritious foods.</li> <li>• Working with the food industry to provide a fortified food.</li> <li>• Linking with smallholder animal and vegetable producers to supply schools with fresh, nutritious foods (especially milk, eggs, dodo leaves, iron rich biofortified beans and orange flesh sweet potatoes), creating demand for their produce and providing them with additional income that could be spent on nutritious foods for their families.</li> <li>• Provide MMT or IFA to adolescent girls.</li> <li>• Strong component of WASH to ensure meals are prepared safely and hand washing facilities provided to prevent illness.</li> </ul>	<p>C17. Strengthen programmes that promote access to energy-dense and nutrient rich foods for school going children.</p>
	<p>Provide separate changing rooms, washrooms and toilets with clean water, soap and free sanitary pads for girls.</p> <p>Use schools as a platform to collect information on the nutrition and health status of school aged girls and boys.</p> <p>Reward students who perform well in school.</p>	

Entry Point	Recommended Interventions based on FNG Analysis and Stakeholder Workshop	Recommended Interventions based on Country Strategic Review of Food and Nutrition Security Report
<p><b>Nutrition education</b></p>	<p>Strengthen the referral process that links women in communities to health services to communicate the importance of dietary diversity and the consumption of nutrient-dense foods during pregnancy and breastfeeding. This should be done by increasing the number of community health workers and training agriculture extension workers to provide nutrition messages to men and women in communities.</p> <p>Messages should:</p> <ul style="list-style-type: none"> <li>• Advocate for the importance of consuming nutritious fresh foods, particularly vegetables rich in iron and vitamin A and animal source foods.</li> <li>• Advocate to smallholder livestock farmers the importance of children, young girls and women consuming eggs and milk and using their income to purchase other nutritious foods.</li> <li>• Seek endorsement from local leaders to encourage men to attend and engage in the messages particularly related to taking an active role in domestic (including small livestock and kitchen gardens) and child care duties.</li> <li>• Contain a strong WASH and food safety component at household and school level.</li> <li>• Sensitize parents to the importance of keeping girls in school.</li> <li>• Find male champions who support their wives in domestic chores and child care duties, who believe in making decisions equally and can act as change agents in the community.</li> <li>• Provide adolescent sexual and reproductive health education in schools which includes messages related to delaying marriage and pregnancy, preventing HIV/AIDS, gender-based violence and the importance of nutrition and WASH.</li> </ul>	<p>A8. Effectively address gender equality and women's empowerment in national policies and strategies based on well-informed gender analysis which includes disaggregated data on gender issues.</p> <p>C1. Strengthen nutrition awareness and education programmes at the household level.</p> <p>C2. Strengthen women's education, empowerment and influence within the household, including special access to extension services.</p> <p>C3. Integrate a nutrition education component into all relevant agriculture programmes and projects to improve consumption of nutritious crops among producing farmer households.</p> <p>C5. Strengthen nutrition and gender education components in the training curriculum of agriculture extension agents.</p> <p>C7. Develop extension messages related to the safe handling of food and safe storage practices. Integrate these messages into the training packages for Farmer Field School (FFS) facilitators, farmer promoters, Community Health Workers (CHWs) and other private service providers.</p> <p>C8. Establish national dietary guidelines to inform consumer food choices and facilitate nutrition education and behaviour change activities through grassroots agriculture and health extension workers.</p> <p>C10. Strengthen programmes that promote access to energy-dense and nutrient-rich foods, especially for children and PLW groups.</p> <p>C12. Promote the integration of WASH in all community-level food and nutrition security intervention programmes.</p> <p>C14. Expand and strengthen support to CHWs and other grassroots nutrition agents who disseminate sanitation and hygiene messages.</p> <p>E5. Develop a national communication plan that involves all types of media in conveying innovative messages and approaches on the consumption of nutritious food and the eradication of malnutrition.</p> <p>F6. Conduct regular training sessions for health care givers (including CHWs) in nutrition-specific interventions such as maternal infant and young child nutrition, management of acute malnutrition, and management of diet related non-communicable diseases, etc.</p> <p>F7. Invest in the capacity development of agricultural extension agents on nutrition related matters and develop appropriate information packs for farmers to improve the link between food production and nutrition security.</p>

**Table 4:** The recommended enabling environment identified during the FNG stakeholder workshop and the relevant recommended enabling environment identified by the Rwanda Country Strategic Review of Food and Nutrition Security.

Category	FNG Recommended Enabling Environment	Strategic Review Recommended Enabling Environment
<b>Policy and strategy frameworks</b>	<p>Develop strategies and policies that promote the production and distribution of nutritious foods:</p> <ul style="list-style-type: none"> <li>• Crop Intensification Programme should be more nutrition-sensitive and include fruit and vegetables.</li> <li>• Develop a strategy for improving the supply chain for animal source foods.</li> <li>• Develop a strategy for biofortified foods.</li> <li>• Develop a food fortification policy.</li> </ul> <p>Develop a tax policy that incentivises fresh, fortified or biofortified nutritious foods (through subsidies) and disincentivises high calorie, low nutrient density snack or 'junk' foods.</p> <p>Develop a food safety and quality policy.</p> <p>Develop a national strategy to prevent overweight and obesity.</p>	<p>A9. Develop a national strategy to prevent overweight and obesity among all members of the population.</p> <p>A10. Develop a policy on food fortification, including standards on ration additions of essential vitamins and minerals to food products.</p> <p>A11. Establish a national strategy on crop biofortification and strengthen research programmes on biofortified crop varieties.</p> <p>A12. Develop a specific policy on food quality and safety management.</p> <p>B8. Expand the range of priority crops under the crop intensification programme while considering new crop varieties with high nutritional values and benefits.</p>
<b>Coordination and synergies across sectors</b>	<p>NECPD continue to coordinate all relevant social cluster ministries and partners to take a holistic approach to ending malnutrition across the lifecycle.</p> <p>Improve the coordination of interventions at a district level by strengthening the Joint Action Development Forum mechanism.</p> <p>Strengthen coordination and synergy of interventions across sectors to ensure that all stakeholders are held accountable.</p>	<p>F5. Partners in all clusters contributing to FNS should have clear and integrated accountability mechanisms to ensure joint planning, resourcing, implementation, and monitoring and evaluation systems.</p> <p>F9. Continue the enforcement of a strong involvement of local government (districts, sectors, cells, and villages) in policy and programme planning for food and nutrition security.</p>
<b>Resources</b>	<p>Capacity-building of nutrition actors at all levels.</p> <p>Continued budget mobilization.</p>	<p>F3. Develop a capacity building plan to enhance the skills and expertise of stakeholders related to FNS. Government and partners should train additional nutrition specialists who can be placed in various ministries that engage in cross-cutting FNS issues.</p> <p>F4. Mobilize resources to finance the FNS sector beyond the usual allocation of resources from one basket of funds specific to FNS interventions. Alternatively, increase the budget proportions in these relevant sectors to increase the amount of resources needed.</p>



Category	FNG Recommended Enabling Environment	Strategic Review Recommended Enabling Environment
<p><b>Data gaps</b></p>	<p>Include a micronutrient survey in the next RDHS. Prioritise the micronutrients related to anaemia such as iron, folic acid and vitamin B12.</p> <p>Include MDD – Women in the next RDHS.</p> <p>Conduct research to better understand what drives high rates of malnutrition in wealthier groups.</p> <p>Evaluate the World Bank cash transfer pilot project to show its impact on improving economic access to a nutritious diet.</p> <p>Conduct more research on how gender equality and women’s empowerment impacts nutrition.</p> <p>Conduct more research on the diets of girls aged 10-14 years and reasons for dropping out of school.</p> <p>Collect more data on food safety concerns for nutritious, fresh foods.</p>	<p>A2. Investigate linkages between Ubudehe categories, food security and nutrition to better inform policy interventions.</p> <p>A5. Update the existing Social Protection Policy to reflect how social safety net interventions are linked to Food and Nutrition Security (FSN) outcomes and ensure alignment with the Economic Development and Poverty Reduction Strategy-3, Vision 2050 and the Sustainable Development Goals.</p> <p>A8. Address gender equality and women’s empowerment in national policies and strategies based on informed gender analysis which includes disaggregated data on gender issues.</p> <p>E1. Initiate national studies to assess topics such as: the risk of underlying factors behind the persistence of child undernutrition (e.g. by gender, residence and wealth quintiles) despite the progress made in food production and poverty reduction; reasons why infants and young children tend to become more malnourished after the introduction of complementary feeding; why some districts/regions are progressing faster than others in reducing malnutrition; and the impact of nutrition interventions on MAD.</p> <p>E6. Carry out standardized studies aimed at understanding additional micronutrient deficiencies and diet diversification between age groups and geographic locations.</p> <p>E7. Establish and/or improve monitoring and evaluation systems that provide continuous feedback mechanisms to inform FNS programs at all levels. For instance, to better understand the FNS situation in the country, the following additional outcome indicators could be integrated into the monitoring and evaluation framework: diversity of foods produced on farms; smallholder farmer household incomes; physical access to markets; local market prices of nutrient rich foods (or the cost of a healthy diet); food preferences; women’s empowerment in the agriculture index; productivity and the diversity of off-season farming; the proportion of sustainable agriculture practices; MAD for children 6-23 months; MDD for women of reproductive age; household dietary diversity scores; household hunger scores; and coping strategies index.</p> <p>E13. Improve the scope of RDHS to include data collection on other micronutrients deficiencies, such as vitamin A, other minerals and vitamins.</p>



## CONTRIBUTORS

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## LIST OF ACRONYMS

CotD	Cost of the Diet
CFSVA	Comprehensive Food Security and Vulnerability Analysis
CHW	Community Health Worker
DALYs	Disability Adjusted Life Years
EICV 4	Integrated Household Living Conditions Survey
FFS	Farmer Field School
FBF	Fortified Blended Food
FCS	Food Consumption Score
FNG	Fill the Nutrient Gap
FSN	Food and Nutrition Security
GIRINKA	One Cow per Poor Family Programme
HCI	Human Capital Index
IFA	Iron and Folic Acid
IFPRI	International Food Policy Research Institute
IHME	The Institute for Health Metrics and Evaluation
IYCF	Infant and Young Child Feeding
LP	Linear Programming
MAD	Minimum Acceptable Diet
MDD	Minimum Dietary Diversity
MMF	Minimum Meal Frequency
MNP	Multiple Micronutrient Powders
MMT	Multiple Micronutrient Tablet
NECDP	National Early Child Development Program
PLW	Pregnant and Lactating Women
RDHS	Rwanda Demographic and Health Survey
RWF	Rwandan Franc
UN	United Nations
UNICEF	United Nations Children's Fund
WHO	World Health Organisation
WFP	World Food Programme

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