Comprehensive Food Security & Vulnerability Analysis (CFSVA)

October 2021

Rwanda 2021 | Comprehensive Food Security and Vulnerability Analysis

Rwanda: Comprehensive Food Security and Vulnerability Analysis 2021 (Data collected in April 2021)

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The 2021 Rwanda CFSVA is available online at:
http://www.wfp.org/food-security and www.statistics.gov.rw

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ACRONYMS AND ABBREVIATIONS

CARI	Consolidated Approach for Reporting Indicators of food security
CFSVA	Comprehensive Food Security and Vulnerability Analysis
CI	Confidence Interval
CSB	Corn Soya Blend
DHS	Demographic Health Survey
DRC	Democratic Republic of Congo
EDPRS	Economic Development and Poverty Reduction Strategy
EICV	Integrated Household Living Conditions Survey
FAO	Food and Agricultural Organization of the United Nations
FBF	Fortified Blended Foods
FCG	Food Consumption Group
FCS	Food Consumption Score
FCS-N	Food Consumption Score-Nutrition
FSI	Food Security Index
GDP	Gross Domestic Product
HDDS	Household Dietary Diversity Score
HH	Household
IYCF	Infant and Young Child Feeding
MAD	Minimum Acceptable Diet
MDD-W	Minimum Dietary Diversity for Women
MINAGRI	Ministry of Agriculture and Animal Resources
MINALOC	Ministry of Local Government
MIDIMAR	Ministry of Disaster Management and Refugees
MINEMA	Ministry in Charge of Emergency Management (Former MIDIMAR)
MoE	Ministry of Environment
MoH	Ministry of Health
Mt	Metric ton
MUAC	Mid-Upper Arm Circumference
NDVI	Normalized Difference Vegetation Index
NGO	Non-Governmental Organization
NISR	National Institute of Statistics of Rwanda
RWF	Rwanda Franc
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
U5	Under 5 years of age
UNICEF	United Nations Children's Fund
USD	United States Dollar
VAM	Vulnerability Analysis and Mapping
VUP	Vision 2020 Umurenge Programme
WFP	United Nations World Food Programme
WHO	United Nations World Health Organization
Z-score	Standard score, normal score

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FOREWORD (NISR)

The Government of Rwanda, through the Ministry of Agriculture and Animal Resources (MINAGRI) and the National Institute of Statistics Rwanda (NISR), in collaboration with the United Nations World Food Programme (WFP) conducted a nationwide Comprehensive Food Security and Vulnerability Analysis (CFSVA) for Rwanda in April 2021. The CFSVA has been conducted every three years consecutively since 2006, and trends demonstrate the great strides taken in Rwanda to reduce poverty, food insecurity and malnutrition.

The objective of this CFSVA is to provide a situational analysis on the food and nutrition security situation in Rwanda, across all 30 districts. This is the sixth CFSVA conducted in the country, analysing the socio-economic and demographic determinants linked to food and nutrition insecurity as well as formulating specific recommendations for social protection, food security and nutrition interventions, including geographic and household-level targeting criteria. The 2021 CFSVA also introduced a new module analysing the impacts of the COVID-19 pandemic on livelihoods and food security.

This report provides a comprehensive analysis of who the food insecure and vulnerable people are in the country, where they live, how many they are, why they are food insecure/vulnerable, what can be done to improve their lives and livelihoods, the impacts of the COVID-19 pandemic, how the situation is likely to evolve, and the risks associated for food and nutrition security.

Although stunting rates have decreased since the 2018 CFSVA, this report provides evidence that food access, food consumption and chronic malnutrition remain issues that still need to be tackled. Moreover, additional focus should be prioritized to build household resilience to weather-related shocks and to avert the increase of poverty in Rwanda.

We are convinced that by analysing the underlying causes of both food insecurity and chronic malnutrition in Rwanda, this report will guide decision makers towards tackling these issues.

Yusuf MURANGWA

Director-General

National Institute of Statistics of Rwanda

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This Comprehensive Food Security and Vulnerability Analysis 2021 (CFSVA 2021) is a joint initiative between the National Institute of Statistics Rwanda (NISR), the Ministry of Agriculture and Animal Resources (MINAGRI) and the United Nations World Food Programme (WFP).

The 2021 CFSVA was made possible, thanks to the generous financial and in-kind support from the European Commission's Directorate-General for International Partnerships (INTPA), the Japan International Cooperation Agency (JICA), the Swiss Agency for Development and Cooperation (SDC), the United States Agency for International Development (USAID), the United Nations Children's Fund (UNICEF), and WFP.

The analysis was coordinated by the CFSVA technical working group composed of the NISR, MINAGRI and WFP in partnership with the Ministry of Local Government (MINALOC), the Local Administrative Entities Development Agency (LODA), the Rwanda Biomedical Centre (RBC), the National Child Development Agency (NCDA), the International Food Policy Research Institute (IFPRI), the United Nations Food and Agriculture Organisation (FAO), United Nations Children's Fund (UNICEF), the United Nations World Health Organisation (WHO), and the World Bank. We appreciate the contribution of the technical working group, which participated in the different steps of the process.

We thank the WFP team for their support to mobilise resources as well as for their role as technical leads of this assessment, coordinating the survey and training, supervising field work, data processing analysis and report writing in collaboration with MINAGRI and NISR.

We equally acknowledge the support of Mr. Fodé Ndiaye, United Nations Resident Coordinator for his liaison role throughout this process.

Lastly, we would also like to acknowledge the hard work of the data collectors and the generosity of the 9,000 heads of households who devoted their time to respond to all the survey questions.

Digitally signed by MINAGRI(Permanent Secretary)

Jean-Claude MUSABYIMANA

Permanent Secretary

Ministry of Agriculture and Animal Resources

EXECUTIVE SUMMARY

The 1999 World Food Summit definition of food security describes a situation in which "all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life". Food security has multiple drivers – including food availability, accessibility and affordability.

Despite significant growth in agricultural production over the last decade, food security and nutrition remain a concern in Rwanda, particularly when considering household vulnerability to shocks. Food security and nutrition are critical areas which the agriculture sector, in collaboration with other sectors, can help improve. While stunting has been decreasing at a steady pace, overall stunting rates remain very high compared with international standards.

According to the World Bank, Rwanda was experiencing an economic boom prior to the COVID-19 pandemic. Economic growth improved by 10 percent in 2019, driven primarily by large public investments required to implement the National Strategy for Transformation (NST1). Strong growth was expected to continue into 2020. The Strategic Plan for Agriculture Transformation (PSTA4) anticipated average annual agriculture growth of 10 percent through 2023 and the percentage of food-insecure households to be reduced to 10 percent by 2023/2024.

The Comprehensive Food Security and Vulnerability Analysis (CFSVA) is conducted every three years in Rwanda to provide monitoring information for food security and nutrition situation of households and to monitor changes over the years. This current CFSVA, conducted by MINAGRI, NISR, WFP, and other partners, particularly aimed to provide current information on food insecurity and malnutrition to monitor the progress of implementation of various policies and strategies, including priority areas number 2 and 3 of the PSTA4, which focus on ensuring food and nutrition security at the household level. This CFSVA was undertaken just over a year after the first COVID-19 case was confirmed in Rwanda. Although the economic consequences of the actions taken to curb the spread of the pandemic were unavoidable, COVID-19 has adversely affected income opportunities, reversing some of the economic gains achieved by some households as indicated by the deterioration of some key food security indicators. Bearing in mind that this is not a comprehensive COVID-19 impact study, the report should be read with the understanding that some of the observed trends highlighting the fragility of livelihoods and food security could have been influenced by the pandemic.

The state of food insecurity in 2021:

Food insecurity is reported through the Consolidated Approach to Reporting Indicators of food fecurity (CARI). This methodology classifies households into four descriptive groups: food secure, marginally food secure, moderately food insecure, and severely food insecure. CARI combines a suite of food security indicators, including food consumption score (FCS), food expenditure share, and livelihood coping strategies, into a summary composite indicator.

Results from the 2021 CFSVA have indicated that 20.6 percent of the population in Rwanda is food insecure, of which 18.8 percent are moderately food insecure and 1.8 percent are severely food insecure. National stunting rates have significantly decreased from 34.9 percent in 2018 to 32.4 percent in 2021. Out of this 24.0 percent of children under 5 years of age are moderately stunted and 8.4 percent are severely stunted. Acute malnutrition (or wasting) in children under 5 is 2.4 percent, with 1.8 percent experiencing moderate acute malnutrition (MAM) and 0.6 percent experiencing severe acute malnutrition (SAM). The prevalence of acute malnutrition has slightly increased by 0.4 percent compared to 2.0 percent in 2018.

In Rwanda, food insecurity and malnutrition are mainly caused by limited consumption of nutritionally diverse foods. Only 19.5 percent of children aged between 6 to 23 months receive a minimum acceptable diet (an increase of 2.5 percent compared to 2018), 32.8 percent reach the minimum meal frequency and 42.3 percent obtain the minimum dietary diversity of four food groups consumed. For women aged 15-49 years old, 32 percent meet the minimum dietary diversity for women (MDD-W) indicating that they have consumed at least 5 out of the 10 specified food groups in the last 24 hours, before the survey.

In comparison with 2018, the food security situation in Rwanda deteriorated by 2 percent. Food security continues to deteriorate exceedingly in Karongi (-14.7 percent), Ngororero (-13.8 percent), Burera (-13.4 percent), Nyamasheke (-12 percent) and Gatsibo district (-15.8 percent). Positively, food security has improved in 12 districts throughout the country. Significant changes were observed for Kayonza district, which has improved the prevalence of food secure households by 20 percent (from 67.3 percent in 2018 to 87.3 percent in 2021). High improvements are also observed in Kirehe (+12.6 percent), Gicumbi (+10.6 percent) and Kamonyi (+10.4 percent).

Geographical location of the most food insecure:

The Western Province of Rwanda has the highest prevalence of food insecure households (35.3 percent), followed by the Southern Province (22.2 percent), Northern Province (18.6 percent) and Eastern Province (14.6 percent). The lowest prevalence of food insecurity is found in the City of Kigali with 5.0 percent of moderately food insecure households. Stunting reduced in 4 provinces to below 40 percent, WHO's threshold for very high levels of stunting. In City of Kigali, however, the prevalence of stunting has slightly increased but remains the lowest in the country (15.4 percent).

Contributing factors to food insecurity in Rwanda:

The total land area of Rwanda is estimated at 2.467 million hectares, for which about 58 percent is used for agriculture. Rwandan agriculture is primarily small-scale and almost exclusively rainfed with only 9.2 percent of households using some form of irrigation. Rwandan agriculture is characterized by small production units. Around 71 percent of the cultivated area is a mixed cropping system. According to the data, 69 percent of households own farmland. Most of the households (57 percent) cultivate less than 0.5 hectares and 27 percent cultivate less than 0.1 hectares.

Most households in Rwanda have a high reliance on markets for acquiring food. On average, two-thirds of food was bought at the market the week before the survey, while the last third came from household production or a small part from other sources. As expected, the share of food coming from household production is higher among households that practice agriculture and increases in line with the size of the land owned. Economic vulnerability plays a major role in

food insecurity as 29.5 percent of households are spending more than 65 percent of their total expenditure on food. Trend analysis from secondary data on food prices shows a gradual increase in key food prices since 2019. The Food CPI was 19 percent higher in March 2021 compared to March 2018, and 15 percent higher in April 2021 compared to April 2018. The majority of households are thus more vulnerable to rising food prices which have diminished their buying power.

More than 24 percent of households classified in the poorest quintiles are food insecure compared to 10 percent in the wealthiest ones. The food insecure households make up more than 30 percent of households classified in Ubudehe[1] category 1, 20 percent in Ubudehe 2 and 15 percent in Ubudehe 3.

On average, 35 percent of households rely on only one livelihood activity, 44 percent on two livelihood activities, and 21 percent rely on three or more livelihood activities. The first activity contributes 76 percent of the household's income, while the second activity contributes 28 percent and the third, 13 percent. The activities most engaged in by households are agricultural production (90 percent of households), livestock raising for sale (83 percent but mainly as a second or third activity), daily labour agricultural work (49 percent) and unskilled daily labour (26 percent).

Nationally the COVID-19 pandemic was reported as the main shock, however, it mainly affected households living in the City of Kigali and in urban areas. Households living outside the City of Kigali were more affected by natural disasters and hazards. Irregular rains or drought are some of the natural hazards reported in the Eastern and Southern Provinces.

In 2021, 44 percent of households reported experiencing a shock or unusual situation during the last 12 months which affected the household's ability to provide for itself, to eat in the manner it is accustomed to or affected the household's assets. The City of Kigali was by far the most affected by a shock (71 percent of households) followed by the Western (54%) and Southern Provinces (46%). The COVID-19 pandemic was reported as the main shock, mainly affecting Kigali City (76% of households) and urban areas. This shock resulted in revenue losses and a decrease of assets mainly for skilled labourers, traders, and daily labourers. The data shows less impact from COVID-19 for agriculturalists. The second main shock reported was irregular rains/drought and landslides affecting mainly the rural areas..

Based on the findings, a list of recommendations covering the thematic areas below have been proposed. A full list is provided in Annex.

1. Improvement and diversification of food production.
2. Risk mitigation and improvement of household resilience by strengthening cross-sectoral collaboration and aligning social protection, agricultural and health priorities to deliver food security and nutrition interventions at a larger scale.
3. Market access facilitation through the promotion of intra-country trade of commodities, investment in storage and transportation facilities to minimise post-harvest losses.
4. Improved food consumption and nutrition through behavioural change.
5. Food security monitoring and analysis for accurate data on food availability, access as well as impact of programmes at the household level.
6. Improved targeting through integrated social protection safety nets.

[1]Ubudehe is a social stratification programme depending on income among households. Category 1 Very poor and vulnerable citizens who were homeless and unable to feed themselves without assistance. https://bit.ly/3vTiBo2

01. BACKGROUND

1.1. Geographical context

Rwanda is a landlocked, mountainous country with a total surface area of 26,338 square kilometres located in the Great Lakes Region of East-Central Africa. The country shares borders with Uganda to the north, Burundi to the south, Tanzania to the east and the Democratic Republic of the Congo (DRC) to the west.

1.1.1. Topography

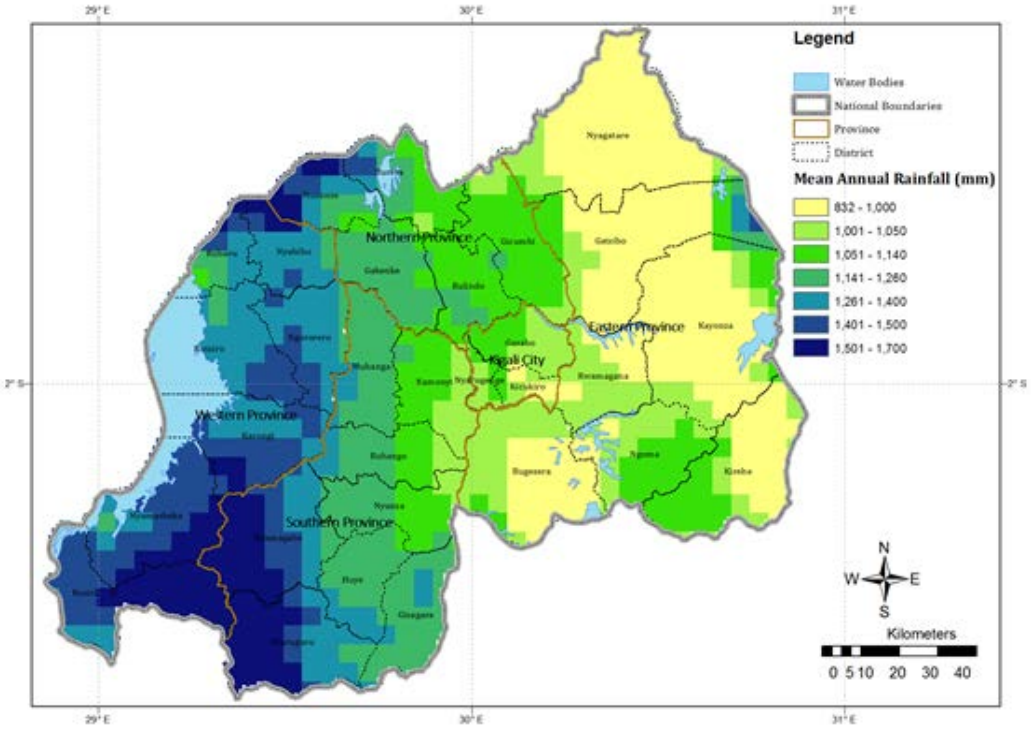
Known as "the land of a thousand hills", Rwanda has steep topography, lying at an altitude ranging between 915 m and 4486 m. High mountains up to 4.5 km above sea level sit in the west and northwest part of the country, including the Congo Nile Ridge, the Volcanic Range and the Buberuka highlands. Plains are found in the eastern part of the country, including the eastern savannah, the eastern plateau, the central plateau and the Bugesera-Mayaga. A large wetland reservation in the Akagera National Park is found in the northeast of the country.

1.1.2. Climate and rainfall

With a tropical temperate climate, the average annual temperature ranges between 16 °C and 20 °C, and the average rainfall intensity is 1,156 mm per year. The rainfall characteristics for Rwanda are known to exhibit large temporal and spatial variation due to varied topography and the existence of large water bodies near the country. The central and eastern part of the country are generally of semi-arid type owing to its position in the rainy shadow of the western highlands (Figure 1). Two rainy seasons are distinguishable from March to May and from October to December with an average of 110-200 mm per month.

Temporal variability of rainfall on some occasions has resulted in extreme events such as the floods of 1997/98, El Niño phenomena and frequent droughts that have far-reaching socio-economic impacts on the country.

Figure 1: Annual rainfall in Rwanda in mm (Source: MeteoRwanda [2])

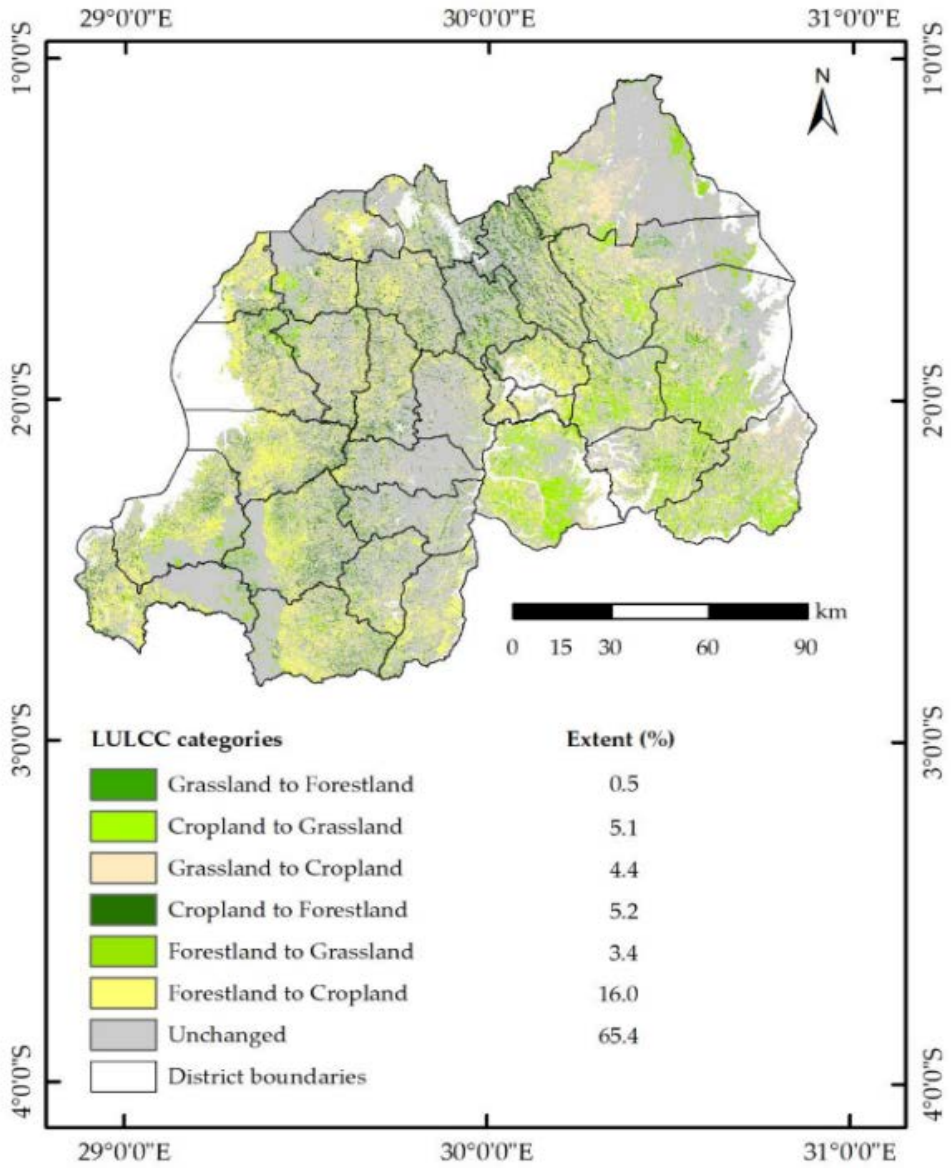


1.1.3. Land cover

Natural vegetation ranges from the dense equatorial forest in the northwest of the country to the tropical savannah in the east. Rwanda experienced the most rapid population growth and cropland expansion in Africa over the last decade. Over the period from 2000-2015, 34.6 percent of the total area of evaluated land use/land cover (LULC) types have changed. In 2015, more than 56 percent of the country's land areas were converted to croplands to meet growing food demands, resulting in massive deforestation. Forest occupancy dropped from 44 percent to 21 percent and grassland reached 16 percent of the country's area[2] (Figure 2). The deforestation phenomenon is intensified by the production of firewood and wood charcoal and constitutes a high threat to the entire population since the main source of energy in Rwanda is wood.

[2] Nambajimana, J.d.D et al., 2020. Land Use Change Impacts on Water Erosion in Rwanda.

Figure 2: Change in LULC categories for erosion-prone lands (2000–2015) (Source: Nambajimana et al.) [2]



1.1.4. Soil and soil erosion

Rwandan soils are naturally fragile, consisting primarily of basic schistose, quartzite, gneissic, granite and volcanic rocks and some alluvial soils. Most of its soil is acidic with PH varying between 4 and 5.5[2].

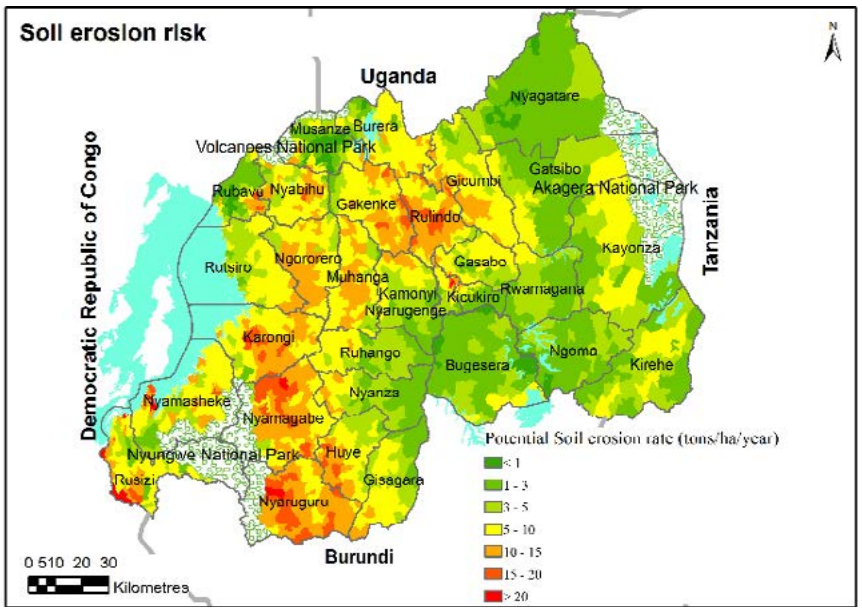
Rwanda is among the countries most susceptible to water erosion. Topography and rainfall correlated to high demography, changes in land use and unsustainable human activities, such as water diversion onto lowlands and water pollution are the major causal factors of soil erosion and environment degradation[3]. The loss of soil due to water erosion degrades the arable land and eventually renders it unproductive, consequently resulting in a drop in potential agricultural productivity and giving rise to concerns about food security. Rapid land conversion to agricultural use stands as a catalyst for accelerated soil erosion[4].

Several studies have highlighted soil vulnerability to erosion in many parts of the country using the Revised Universal Soil Loss Equation (RUSLE) model[5-6-7]. The RUSLE is an empirical-based modelling approach developed for estimating long-term mean annual soil loss due to rill and inter-rill erosion. The model has been applied in many other countries and is based on the annual average soil loss, rainfall erosivity, soil erodibility, slope length and slope steepness, landcover and land management practices. The estimated mean annual soil losses through RUSLE model were 48.6 t.ha−1.y−1 and 39.2 t.ha−1.y−1 in 2000 and 2015, respectively, resulting in total nationwide losses of approximately 110 million and 89 million tons (Figure 3).

[3] Mupenzi JdP, et al., 2012. Radical Terraces in Rwanda. East African Journal of Science and Technology, 1(1):53- 58.
[4] Ibid
[5] Fidele Karamage et al., 2016. Extent of Cropland and Related Soil Erosion Risk in Rwanda.
[6] Majoro, F. et al., 2020. Soil Erosion Modelling for Sustainable Environmental Management in Sebeya Catchment.
[7] Niyonsenga J.D. et al., 2020. Spatial analysis of soil erosion sensitivity using the Revised Universal Soil Loss Equation model in Nya- masheke District, Western Province of Rwanda.
[8] Enan M. Nyesheja et al., 2019. Soil erosion assessment using RUSLE model in the Congo Nile Ridge region of Rwanda.

Most of the unsuitable croplands are distributed in the Congo Nile Ridge and Volcanic Range Mountain areas in the west and the Buberuka highlands in the north. Soil erosion persists due to over-cultivation on small farmlands with steep slopes (>30%), insufficient soil conservation techniques, limited financial capacity and inadequate practical training to maintain existing techniques. Mean soil loss for Rwanda in 2015 was significantly correlated with poverty, extreme poverty, and increased use of chemical fertilizers.

Figure 3: Soil erosion risk based on RUSLE model (Source: Nambajimana et al, 2020)[1]



According to the Ministry of Environment, erosion risk reaches 33 percent of land in the Western, Northern and Southern provinces. The level of land at risk is estimated at 61 percent in Ngororero, 53 percent in Rutsiro and 44 percent in Karongi districts in the West, 49 percent in Gakenke and 40 percent of land in Rulindo and Burera district in the North, while 63 percent in Muhanga and 40 percent in Nyamagabe district in the South (Table 1).

Table 1: Districts with high risk of soil erosion (Source: MoE)

	District	% district land at risk
Western Province	Ngorero	61%
	Rutsiro	53%
	Karongi	44%
Northern Province	Gakenke	49%
	Rulindo	40%
	Burera	40%
Southern Province	Muhanga	63%
	Nyamagabe	40%

To prevent erosion and improve soil fertility, the population has been mobilized since the 1970's and enlightened about the bench terraces integrated with mulching and cover crops on large areas in all Agro-Ecological Zones (AEZs) of Rwanda to limit water flow. The soil conservation scenario analysis for Rwanda's cropland in 2015 revealed that terracing could reduce soil loss by 24.8 percent. Soil analysis is necessary to determine the type of soil before deciding on terraces to help farmers in their activities.

1.2. Natural risks and hazards

The country's topography and its natural environment to a large extent shape natural hazards including floods, landslides, droughts, windstorms, rainstorms, lightning and earthquakes. Over the last decade, the frequency and intensity of natural hazard-induced disasters have significantly increased, raising the toll of human casualties as well as economic and environmental losses. According to (MINEMA), in 2018 and 2019, natural disasters killed 388 people, damaged 20,600 houses and 23,900 hectares of crops.

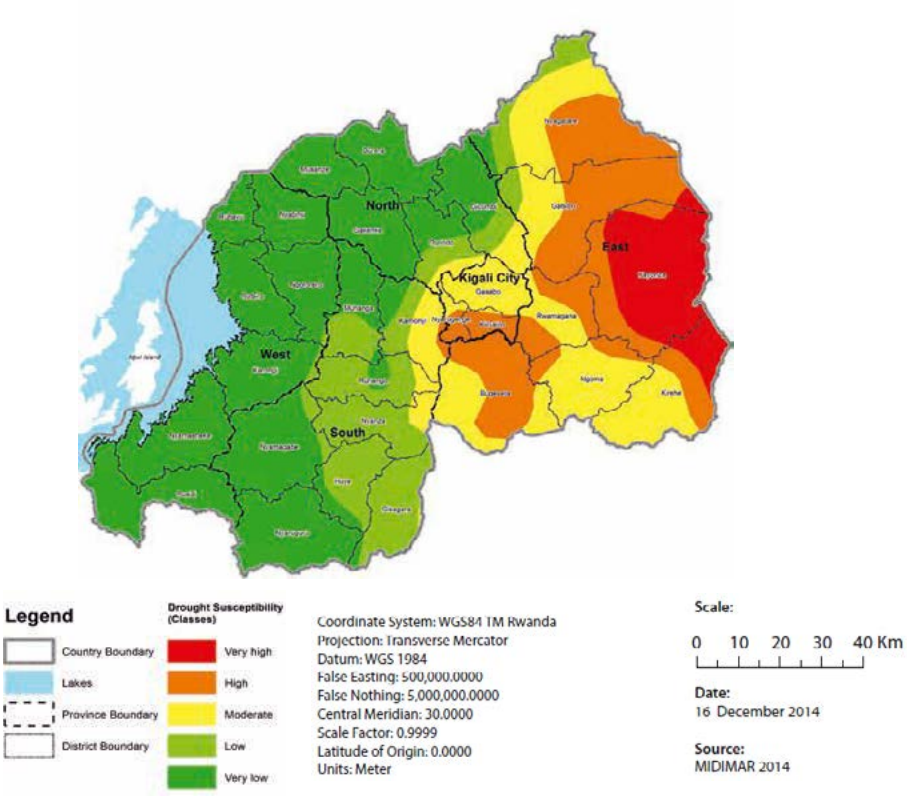
1.2.1. Landslides

The north-western provinces are the areas most vulnerable to landslides causing damage and loss of lives. The elevation, slope, poor land management and rainfall are the key drivers for landslides in this area. Rain harvest, which could minimize runoff, is rarely practiced, impacting livelihoods, killing, or injuring people, and damaging infrastructure and natural resources. Residents are also typically not aware of landslide causal factors due to low levels of education and training. Therefore, local community's awareness on its exposure and the extent to which their susceptibility impacts livelihoods would help to envisage appropriate risk reduction measures.

1.2.2. Floods

Due to its dense river network and large wetlands, the country is threatened mainly by riverine floods. The risk of flood hazards heightens with the increase of the population accompanied by the scarcity of land that has pushed people to settle in marginal land and flood-prone areas. Five flood plain areas have been recorded in the National Risk Atlas of Rwanda related to the following river's catchment: Nyabarongo, Nyabisindu, Sebeya, Mukungwa and Kagitumba. The flood analysis of the selected catchments shows that the total area affected by the flood is around 0.7 percent (197 km2) of the country. Nyabarongo River affected more districts than any other river analyzed, however, Bugesera district is the most affected area in terms of location, but not in population.

Figure 4: Drought hazard in Season B in Rwanda (MIDIMAR 2014)



1.2.3. Drought

Drought is one of the main natural disasters in Rwanda. It results in a decrease in production and impacts the livestock sector due to the limited availability of water and feed, particularly in the East and in the South, as shown in Figure 4. According to MINEMA[8], Kayonza district is still the most exposed to severe droughts, where 75 percent and 25 percent of its total area are in high and very high drought susceptibility classes. Other districts that have a high susceptibility to severe drought are Kirehe, Gatsibo, Kicukiro, Nyagatare, Nyarugenge, and Rwamagana, where more than 40 percent of their total area are in high or very high drought susceptibility classes.

1.2.4. Earthquake

Earthquakes and volcanic eruptions were underlined as major natural disaster risks. Two active volcanos are located in Eastern DRC, bordering Rwanda. The recent Nyiragongo eruption on May 22, 2021, caused damages and the displacement of 415,000 persons, of which 52,000 fled to Rwanda. In DRC, more than half a million people have lost access to safe water after lava destroyed one of the most important water supply sources, according to the International Federation of the Red Cross. Following the eruption, Rwanda experienced repeated earthquakes that left major cracks in residential, commercial, public buildings and unpaved and tarmac roads.

1.2.5. COVID-19 pandemic

Since March 2020, Rwanda has grappled with the COVID-19 pandemic, a shock unlike any felt in the last century. Rwanda's policy response to COVID-19 has been widely praised for being systematic and comprehensive in its efforts to contain the pandemic. The government's swift and efficient response to the pandemic has largely mitigated the potentially significant negative impact on essential health and nutrition services. Continued efforts to ensure coverage of nutrition and health services to vulnerable households are a priority. Although the actions taken to prevent the spread of COVID-19 were unavoidable, COVID-19 has adversely affected income opportunities, reversing some of the economic gains achieved by some households.

[8] Ibid

Cross-border trading has also been also constrained by COVID-19 regulations and have disproportionally affected small-scale traders who cannot meet the high transport costs and strict border regulations.

Figure 5: Epidemiological summary as of May 2nd, 2021 (RBC, 2021)

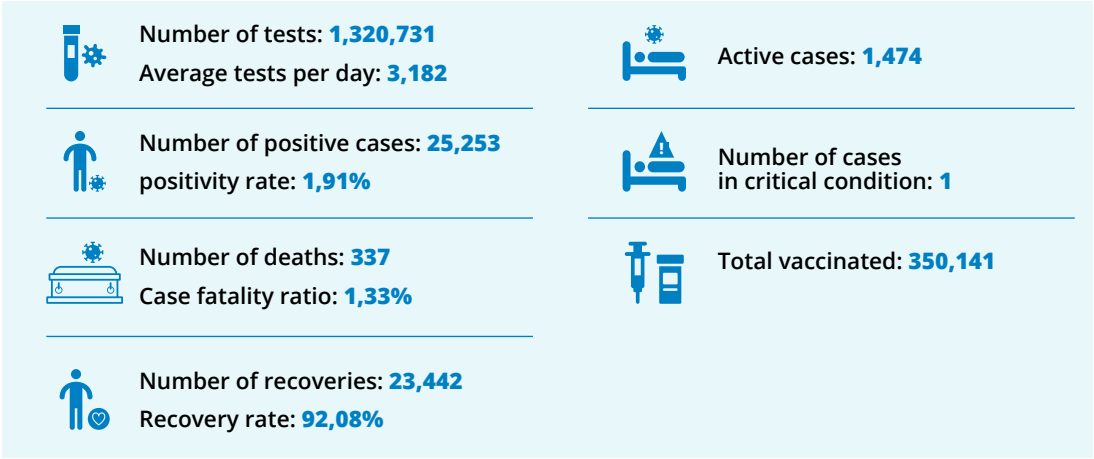
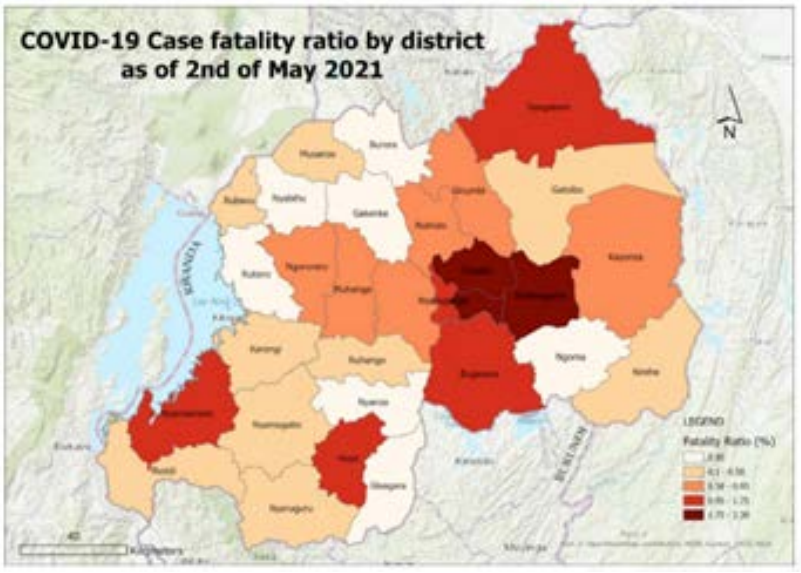


Figure 6: COVID-19 Cumulative Case Fatality Ratio by district as of 2nd May 2021 (RBC, 2021)



1.3. Macro-economic context

1.3.1. Gross Domestic Product

Over the last decade (with the support from the International Monetary Fund and the World Bank), Rwanda has been able to make important economic and structural reforms and sustain its economic growth rates. Rwanda's major foreign exchange earners include mining, tourism, coffee and tea. Rwanda's economic structure is dominated by the services and agricultural sectors. In the first quarter of 2021, 46 percent of GDP came from the service sector, 27 percent from agriculture and 20 percent from industry[9].

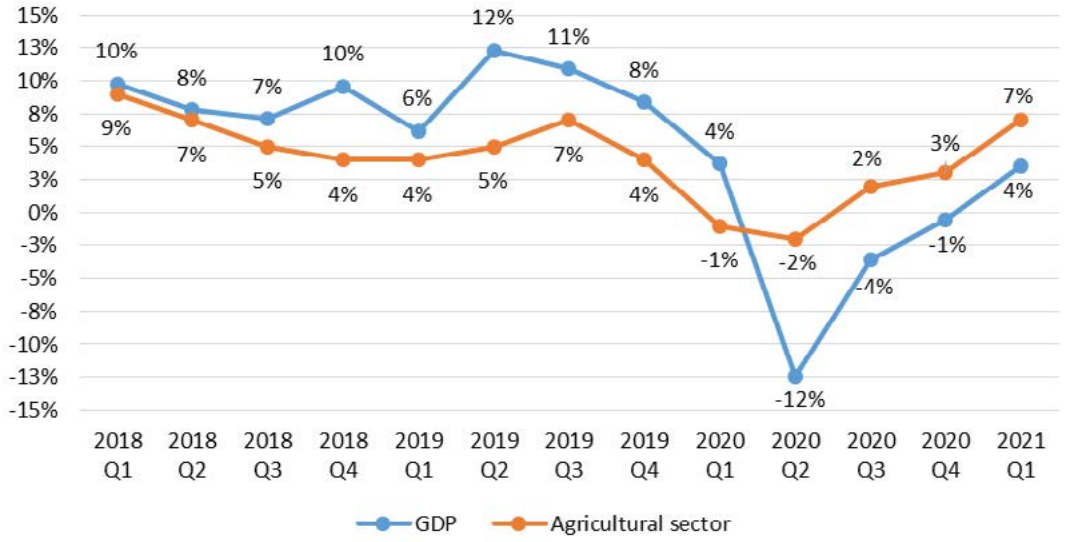
Before the COVID-19 pandemic, economic growth reached 10 percent per year, driven mostly by large public investments for the implementation for National Strategy for Transformation. Rwanda was ranked 38th out of 190 countries according to the 2020 Doing Business report[10].

The pandemic has disrupted international flows of goods and services with significant spillover to the broader global economy. Exports and tourism have taken a strong hit amid disruption in international trade and travel[11]. The lockdowns and social distancing measures, which were critical to control the COVID-19 pandemic, sharply halted many economic activities. In 2020, GDP decreased by 3.4 percent following a growth of 9.5 percent in 2019.

Indeed, in the second quarter of 2020, Rwanda's GDP decreased by 12.4 percent mainly driven by the transport (-29%), industry (-19%) and services (-16%) and a smaller effect on construction activities (-6%), wholesale and retail trade (-3%) and agriculture (-2%), which turned positive again in the third quarter. At the beginning of 2021, the GDP quarterly growth rate reached 4 percent and the agricultural sector in particular reached 7 percent.

[9] NISR, National Accounts, 2021.
[10] World Bank. 2020. Doing Business Report 2020.
[11] https://www.worldbank.org/en/country/rwanda/overview

Figure 7: GDP quarterly growth rate 2017-2021 (NISR database)



1.3.2. Rwandan Franc depreciation

According to the National Bank of Rwanda (BNR) in December 2020, the Rwandan Franc depreciated by 5.4 percent year-on-year against the USD, compared to a depreciation of 4.9 percent in December 2019. This decline reflects a significant drop in core inflation, following the downward revision of public transport fares in October 2020, and a deceleration in prices of fresh food products reflecting favourable agricultural production in 2021 season A[2]. The National Bank of Rwanda (BNR) has maintained the Central Bank Rate at 4.5 percent in a bid to support economic recovery, as countries around the world look to rebound from the impact of COVID-19.

1.3.3. Agriculture economy

The agricultural sector contributes approximately one-fourth of the GDP and it contributes 70 percent of the total labor force. Half of the people involved in the agricultural sector exclusively practice agriculture for subsistence, while 42 percent are market-oriented. The COVID-19 outbreak has not significantly disturbed agricultural production. However, movement restriction might have impacted transportation and market access for agricultural businesses.

The agricultural sector increased by 4 percent between 2018 and 2021 including a reduction of growth in 2020. Food crops increased by 4 percent, export crops (mainly coffee and tea) rose by 2 percent, while livestock and animal products remained the more significant sub-sector with a 10 percent increase. For the second trimester of 2021, "Food and live animals" was the second-largest export value (15% of total exports). Five countries (United Arab Emirates, Turkey, Democratic Republic of Congo, United Kingdom and the United States of America) accounted for a share of 68 percent of the total value of domestic exports (USD 368.66 million). Rwanda also imported "food and live animals" for the value of USD 143 million. The imports are mainly from China, Tanzania, India, United Arab Emirates and Kenya[12].

1.4. Social and development context

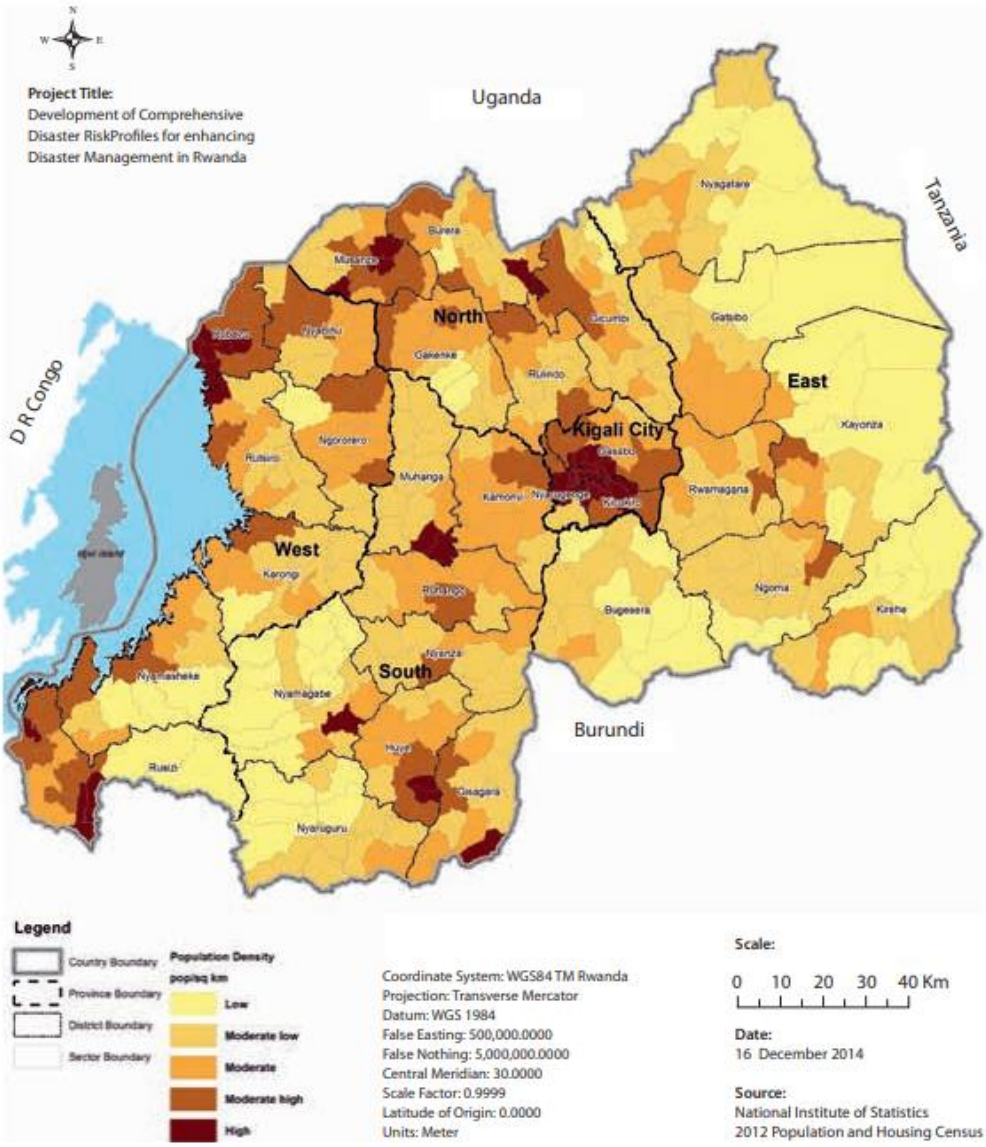
1.4.1. Population

One of the main development challenges Rwanda currently faces is population growth and density. The annual population growth rate of 2.6 percent (recorded between the 2002 national population and housing census and the 2012 census) is among the highest in Africa.

The estimated population in 2021 is 12,738,767 inhabitants, with more than 10 million living in rural areas[13]. The urban[14] population is estimated to be 2,924,764 people in 2021 which is almost 500,000 more than in 2018. The density of the population of Rwanda continues to grow and is the highest in the East African region with 500 inhabitants per square kilometre estimated in 2021 (Figure 8). The population is young, with more than 5.7 million of people under 17 years old. The 16-64 age group constitutes about 62.8 percent of the urban population. The female population share is 51.4 percent, and the fertility rate is 4.1 births per woman.[15]

[12] NISR. Formal External Trade in Goods Report, Quarter 3, 2020
[13] https://www.statistics.gov.rw/publication/size-resident-population
[14] The 2012 General Population and Housing Census defined an urban area based on the smallest administrative entity, the village (Umudugudu). To qualify as urban, a village has to fulfil two main criteria of possessing: (1) an important built-up area and (2) import- ant infrastructures (education facilities, electricity and water, markets, banks and other financial institutions).
[15] RDHS 2019-2020.

Figure 8: Population density in Rwanda (Source: MIDIMAR 2015)



1.4.2. Refugees and migration

According to UNHCR, as of September 30, 2021, Rwanda hosts approximately 127,163 refugees and asylum seekers, primarily from the Democratic Republic of the Congo and Burundi. About 90 percent of the refugees live in camps where they are provided with basic services, cash transfers as well as food and nutrition assistance. In March 2021, the WFP was forced to reduce its general food assistance by 60 percent due to funding shortfalls and the reduction in assistance.

Internal migration in Rwanda is a relatively recent phenomenon since 2010. According to EICV5 2016/2017, 12 percent of households have migrated internally in the last five years and mainly in Kigali. Overall, migrants constitute a larger share of the population in urban areas. Intra rural migration remained the dominant form of internal population movements followed by urban to rural migration. In contrast to popular belief, rural to urban migration is among the least common types of migration. The main destinations for people migrating internally within the country were Kigali (32 percent of the population are migrants from the last five years) and the Eastern Province (14 percent)[16].

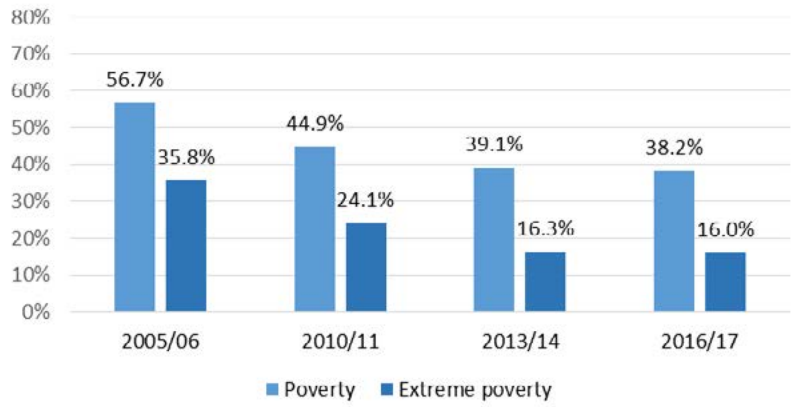
According to the World Bank study on urbanization in Rwanda, there are several migration patterns in Rwanda: an intra rural migration which appears to be mainly driven by demographic factors and life cycle effects, land scarcity, and localized absence of public infrastructure while rural to urban migration is linked to the higher returns to education in urban areas and with the districts of Kigali City attracting many migrants. Besides this, a parallel urban to rural migration is observed which has a dual character, consisting of people who do not have the level of education and skills to afford living in the city, but who are too well educated for jobs in the countryside, settling in the rural fringes (and likely still having their employment in the city); and relatively older and less educated city dwellers leaving for the Eastern Province the least densely populated province in Rwanda to farm.

[16] Enquête Intégrée des Conditions de Vie des ménages (EICV) 5, 2016/2017 database.

1.4.3. Poverty trends in Rwanda

According to the National Institute of Statistics in Rwanda (NISR), poverty declined from 44.9 percent to 38.2 percent over the period from 2011–2016. The rapid economic growth in Rwanda during 2010/11-2016/17 was broad-based, as it positively affected most sectors of the economy and all regions, but to differing degrees. The proportion of individuals who were poor in 2010/11 and moved out of poverty in 2016/17 reached 45 percent, while 21 percent of the non-poor fell into poverty during the same period.

Figure 9: Trends of poverty and extreme poverty between 2005 and 2016.



Poverty in Rwanda is essentially a rural phenomenon, hovering well over 40 percent in such areas as opposed to rates as low as 15 percent in urban areas. Kigali has a much lower rate than other Provinces, at under 20 percent, but did not decline over the period. Kigali has driven the reduction of impoverishment in urban areas (from 9.2% to 2.1%), implying that impoverishment in the remaining urban areas is much higher.

The increase in impoverishment comes from the Southern and Western Provinces, which have recorded high increases in people moving into poverty and are now at much higher levels than the other provinces. In the Western Province, 10.6 percent of individuals were non-poor from 2010 to 2013 and became poor in 2016 (Table 2).

Table 2: Distribution of Individuals by poverty spells 2010/11, 2013/14, 2016/17 (%) – P=Poor, N=Non-poor (Source: NISR)

Medium-term mobility; Living standards between 2010/11 and 2016/17	Poverty spells								
	PPP	PPN	PNP	NPP	PNN	NPN	NNP	NNN	Total
All Rwanda	19.2	7.8	5.3	5.1	12.5	5.5	6.6	38.1	100
Urban/ rural									
Urban	9.0	5.1	2.3	3.5	9.9	6.0	3.4	60	100
Rural								32.0	100
Provinces									
Kigali	10.8	7.9	1.5	4.1	7.3	51	0.5	62.8	100
Southern	20.4	6.1	7.9	4.9	15.0	3.4	6.8	35.7	100
Western	21.0	6.6	5.3	6.4	8.8	5.8	10.6	35.5	100
Northern	24.5	9.2	4.7	4.1	20.3	6.1	3.7	27.5	100
Eastern	15.7	9.5	4.7	5.1	10.5	6.9	6.6	41.0	100

According to the NISR, individuals who stayed poor in both 2013/14 and 2016/17 are over-represented among female-headed households, households whose head was aged 40-49, and households with 6 members or more. In terms of occupation, households whose head worked as a farm labourer exhibited the highest likelihood of staying in poverty (45 %)[17]. Education was the strongest correlation for poverty in Rwanda, determining the command of individuals over income-earning opportunities through access to employment. Households whose heads completed at most some primary years of education represent 77 percent of those who fell into poverty. Better housing conditions, as well health insurance, wage income and household size are strongly correlated with the movement of households out of poverty.

A total of 36.4 percent of households experienced a natural, economic, health or other shock as per EICV 2016/17 data. Poor households experience more shocks as compared to non-poor households. The rate of households experiencing shocks is particularly high in specific parts of the country: East (65.5 %) and South (42.5 %). The occurrence of shocks increases poverty levels, while without shocks, poverty tends to go down.

[17] IPAR/CPAN, 2019. Understanding the dynamics of poverty in Rwanda.

1.4.4. Socio-economic indicators

Table 3: Selected social and economic indicators

Demography, Education, Water and Sanitation	NISR 2020
Mean dependency ratio	78
Percentage of individuals (6+ years) that have ever attended school	89%
Net enrolment rate in primary school	99%
Net enrolment rate in secondary school	25%
Percentage of households with improved drinking water source	89%
Percentage of households with improved sanitation	89%
Percentage of households with electricity for lighting	54%
Health and Nutrition	**RDHS 2019/2020**
Average time (in minutes) to reach a health center	47
Under 5 mortality rate	45‰
Infant mortality rate	33‰
Children 6-59 months stunted	33%
Children 6-59 months wasted	1%
Children 6-59 months underweight	8%
Children 6-59 months overweight	6%
Maternal mortality rate	0.25‰
Exclusive breastfeeding for children under 6 months	81%
Minimum Acceptable Diet for children 6-59 months	22%
Employment	**LFS Feb 2021**
Employment to population ratio	42%
Unemployment rate	17%

1.5. Government policies

1.5.1. Vision 2050

Vision 2050 is a long-term development vision that focuses on the transformation of the entire economy and society through a private sector-led growth and transformation economic model. In the next 3 decades, the country will make long-term investments in future endowments: enhanced human capabilities, strong innovation and technological capacity capabilities, socio-economically integrated forms of urbanization, and effective and accountable institutions of governance.

1.5.2. National Strategy for Transformation 2017-2024 – NST 1

Following the Economic Development and Poverty Reduction Strategy (EDPRS 2), the National Strategy for Transformation (NST1) which is also the Seven Year Government Programme (7YGP) continues to accelerate the transformation and economic growth with the private sector at the helm. NST1 provides the foundation and vehicle towards Vision 2050, which aspires to take Rwanda to high living standards by the middle of the 21st century and high-quality livelihoods. Specific priorities and strategies are presented under three pillars: (i) economic transformation, (ii) social transformation and (iii) transformational governance. The strategy also prioritizes the following cross-cutting areas: capacity development, HIV/AIDS and non-communicable diseases, disability social inclusion, environment and climate change, regional integration and international positioning, gender and family promotion, disaster management.

1.5.3. Strategic Plan for Agriculture Transformation 2018-2024 – PSTA 4

The PSTA4 is the Sector Strategic Plan for Agriculture under Rwanda's National Strategy for Transformation (NST1). It guides public investments in agriculture and sets out the estimated required resources for the agricultural sector from 2018 through 2024 while contributing to the three NST pillars of economic, social, and governance transformation in line with the aspirations of Vision 2050. Furthermore, the PSTA4 is an implementation plan under the National Agricultural Policy (NAP 2017–2030), which sets the policy framework for a productive, green, and market-led agriculture sector towards 2030. PSTA4 is articulated around four priority areas: Innovation and Extension; Productivity and Resilience; Inclusive Markets and Value Addition; and Enabling Environment and Responsive Institutions. Four impact areas have been defined, aligned to the targets of the 2014 Malabo Declaration on Agriculture and Postharvest Losses:

1. Increased contribution to wealth creation
2. Economic opportunities and prosperity - jobs and poverty alleviation
3. Improved food security and nutrition
4. Increased resilience and sustainability

1.5.4. National Food and Nutrition Policy 2013-2018

The National Food and Nutrition Strategic Plan of 2013-2018 was a revision of the National Nutrition Policy of 2007. The NFNP links nutrition, household food security and social protection through seven strategic directions (SDs) that address Rwanda's nutrition issues using a conceptual framework adapted from the Health Sector Strategic Plan III (HSSP-3), which includes multi-sector ownership, responsibilities, and joint participation, with foundational principles of good governance and linkages to national and international policies.

Nutrition sensitive policies are in place in key sectors that have an impact on nutritional outcomes, these sectors include agriculture, poverty reduction and development, health, education and social protection. Two examples where nutrition has been well integrated as subprograms is in the PSTA4, and the HSSP-3. Nutrition programs are decentralised through District Action Plans to Eliminate Malnutrition (DPEM) and Joint Action Development Forum (JADF).

1.5.5. The National Early Childhood Development Strategic Plan 2018-2024

This National Strategic Plan for Early Childhood Development (2018-2024) has been developed to speed up the implementation of the National Policy on ECD, and ensure it is in line with the national development objectives outlined in the National Strategy for Transformation (NST 2017-2024). It is a statement of intent underlining what should be done to ensure that Rwandan children are given a fair chance to survive, grow, develop and participate. While the pivotal role of ECD services in supporting child development is well recognized, such services are accessed by less than one-fifth of eligible children in Rwanda. This Strategic Plan is designed therefore to increase access to ECD services, as well as to ensure that services are integrated and of adequate quality.

1.5.6. National Environment and Climate Change Policy of 2018

Within the path of development, Rwanda has recognized the importance of environment and climate change in sustainable development. While acknowledging that the 2003 environmental policy was adopted and reviewed in 2018, it is observed that there is a need now to focus on the core mission of regulation, protection, preservation, environmental awareness, education and research.

1.5.7. National Social Protection Policy, 2018

Most recently, the Government of Rwanda has updated the National Social Protection Policy (2018) which reconfirms its commitment to the realisation of an inclusive and comprehensive social protection system. The policy defines social protection as, 'All public and private income transfers schemes, social care services, livelihood support and insurance schemes that, together, ensure that all extremely poor and vulnerable people have income security, a dignified standard of living and are protected against life-cycle and livelihood risks with a view to achieving sustainable graduation and self-reliance.' (MINALOC, 2018).

The policy is backed by a Social Protection Sector Strategic Plan (2018-2024) (MINALOC, 2017), which classifies Rwanda's social protection interventions under four pillars: (1) Social security schemes, both non-contributory and contributory, that aim to achieve consumption-smoothing and a minimum standard of living through the provision of income support; (2) Emergency assistance, which provides temporary or one-off assistance to address short-term risks or deprivations (3) Social care services (4) Linkages to complementary livelihood support services. These interventions are intended to support seven priority objectives, one of which is, 'to strengthen support for households and communities affected by disasters and shocks' (MINALOC, 2017, p. 25).

02. RATIONALE AND OBJECTIVES

According to the World Bank, Rwanda was experiencing an economic boom prior to the COVID-19 pandemic. Economic growth improved by 10 percent in 2019, driven primarily by large public investments required to implement the National Strategy of Transformation (NST 1). Strong growth was expected to continue into 2020. The Strategic Plan for Agriculture Transformation (PSTA 4) anticipated average annual agriculture growth of 10 percent through 2023 and the percentage of food insecure households to be reduced to 10 percent by 2023/2024.

Despite substantial growth in agricultural production over the past 10 years, food security and nutrition remain a concern, especially when looking at the vulnerability to shocks at the household level. Consequently, food security and nutrition are important areas to which agriculture can accelerate its effort. While stunting has been reducing at a steady pace, overall stunting rates remain high compared with international standards. CFSVA 2018 showed that household food security slightly improved from 80 percent in 2015 to 81.3 percent households who were food secure in 2018, while chronic malnutrition (stunting) for children 6-59 months has dropped from 37 percent to 35 percent between 2015 and 2018. Previous CFSVA reports found that the western province accounted for the highest rates of food insecure households (37% and 29.9 % respectively) with stunting in serious range (44%).

The CFSVA is conducted every three years in Rwanda to provide monitoring information with regards to the food security and nutrition situation of households and to monitor changes over the years. This current CFSVA, conducted by MINAGRI, NISR, WFP, and other partners, particularly aimed to provide current information on food insecurity and malnutrition for monitoring the progress of implementation of various policies and strategies, including priority areas number 2 and 3 of PSTA4, which focus on ensuring food and nutrition security at the household level. This report has assessed the impact of the COVID-19 outbreak on households' livelihood and food security from the respondent's views.

Objectives

The 2021 CFSVA was conducted in March-April 2021, just after the main season A harvest. It provides a relatively favourable snapshot of the food security situation in the country, reflecting not only on the food production that many households will be expected to have from the season A harvest, but also access and utilisation.

The assessment broadly aimed to:

1. Analyse socio-economic and demographic determinants linked to food and nutrition insecurity (according to key questions, see box below);
2. Train and build capacity of government partners to manage and conduct food security and nutrition assessments; and
3. Formulate specific recommendations for social protection and food security and nutrition interventions, including geographic and household-level targeting criteria.

Key questions of the CSFVA assessment

1. Who are the food insecure, malnourished, or vulnerable people?
2. How many people are food insecure, malnourished, or vulnerable?
3. Where do they live?
4. What have been the historical food security and nutrition trends and the outlook for the country?
5. What are the underlying causes and threats of food insecurity and malnutrition?
6. What are the implications of social protection, food security, and nutrition interventions?

03. METHODOLOGY

3.1. Food security & nutritional concepts

3.1.1. Food security

Food security is a state in which "all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life".[18] Food security is a multidimensional function which includes:

Food availability - the amount of food physically available to a household (micro-level) or to an area (community, district, region, or country), which includes domestic production, commercial imports, reserves, and food aid.

Food access - the physical ability (road network and market) and economic ability (own production, exchange and purchase) of a household to acquire adequate amounts of food regularly. It may include home production and stocks, purchases, barter, gifts, borrowing, and food assistance.

Food utilization - the intra-household use of the food they have access to and the individual's ability to absorb and use nutrients (a function of their health status and of the efficiency of food conversion by their body).

Stability - a fourth dimension that emphasizes the importance of reducing the risk of adverse effects on food availability, access, or utilization.

Food security is an outcome of household livelihood strategies and activities. The strategies are based on the assets and/or capital available to the household.

3.1.2. Nutrition

Nutrition - is the intake of food, considered in relation to the body's dietary needs.[19] It is part of "food utilisation" at the individual level.

Malnutrition - occurs when an individual's diet does not provide adequate nutrients for growth and maintenance, or when the body is unable to fully utilize the consumed food due to illness.[20] There are several forms of malnutrition:

Acute malnutrition - also known as "wasting", is measured by low mid upper arm circumference (MUAC) or weight-for-height and/or oedema. It is characterized by a rapid deterioration in nutritional status over a short period related to a severe or recurrent lack of nutrients (lean period, severe epidemic, sudden or repeated change in the diet, or conflict). There are different levels of severity of acute malnutrition: moderate acute malnutrition (MAM) and severe acute malnutrition (SAM).

Chronic malnutrition - also known as "stunting", is defined as low height-for-age and is a form of growth failure which develops over a long period of time. Inadequate nutrition over long periods (including poor maternal nutrition and poor IYCF practices), repeated infections, and/or inadequate parental care practices can lead to stunting. It also has moderate and severe forms.

Underweight - is defined as low weight-for-age as a result of acute or chronic malnutrition or a combination of both.

Micronutrient malnutrition - refers to vitamin and mineral nutritional deficiency diseases caused by dietary insufficiency and/or inadequate absorption. Vitamin A deficiency, iron deficiency anaemia and iodine deficiency disorders are among the most common forms of micronutrient malnutrition.

Overweight and obesity - are defined as "abnormal or excessive fat accumulation that presents a health risk". Depending on the age, different methods to measure a body's healthy weight are available.

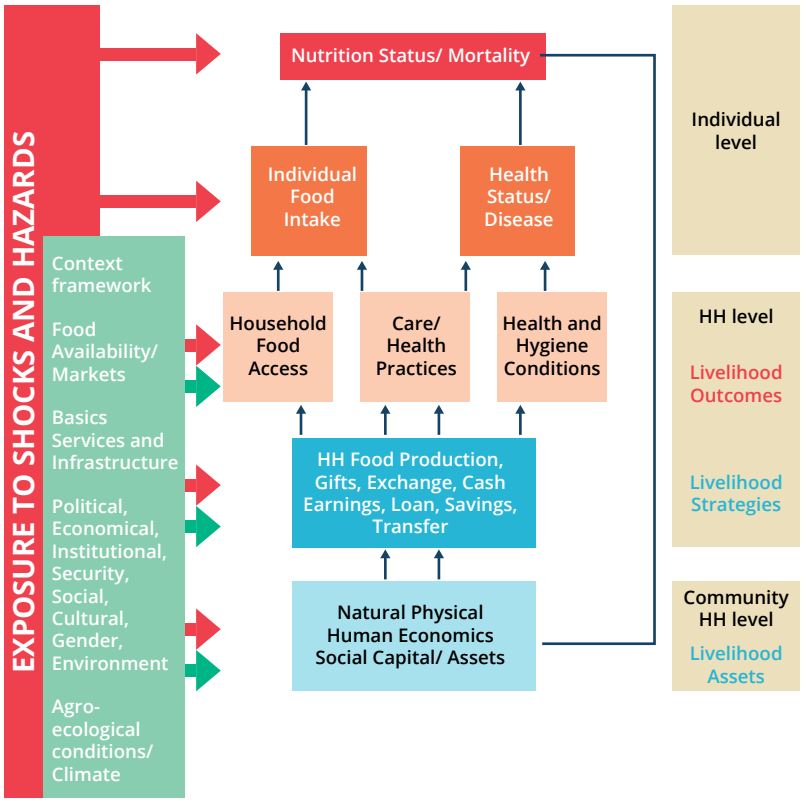
Children 6-59 months are considered the most sensitive to nutritional stress. The 6–59 months age group is most commonly chosen as representative of the magnitude of the the situation for the entire population.

3.2. Conceptual framework

The 2021 CFSVA is based on the Food and Nutrition Security Conceptual Framework which helps to identify determinants of food insecurity and malnutrition (Figure 10). The framework presents the linkage between food security and nutrition. Food security and nutritional status primarily deteriorate because of inadequate feeding practices and disease. Chronic and acute food insecurity are some of the critical underlying factors of undernutrition. Climatic or human-induced shocks often limit or disrupt existing household livelihood mechanisms including their use of assets, production and access to food. For poor populations, changes in production, food prices, wage structures, and other variables often lead to deteriorating household food security and, subsequently, nutritional status. In addition to factors influencing household access to food, an increase in the incidence of communicable diseases related to hygiene conditions and care practices often undermines nutritional status.

[18] World Food Summit, 1996
[19] World Health Organization.
[20] Nutritional security is achieved when a household has secure physical, economic and environmental access to a balanced diet and safe drinking water, a sanitary environment, adequate health services and knowledgeable care to ensure adequate nutritional status for an active and healthy life at all times for all its members.

Figure 10: Food and nutrition security conceptual framework (UNICEF)



3.3. CARI approach

This food security analysis is based on WFP's Consolidated Approach for Reporting Indicators of Food Security (CARI)[21] - a method that combines a suite of food security indicators, including the household's current status of food consumption (food consumption score) and its coping capacity (food expenditure share and livelihood coping strategies) into a summary indicator – the Food Security Index (FSI). The FSI classifies households into four standard descriptive groups: food secure, marginally food secure, moderately food insecure, and severely food insecure. The latter two groups can be combined and classified as food insecure households. Table 4 below describes the different food security categories. The overall prevalence of food insecurity in the population is calculated by summing up the rates of the "moderately food insecure" and "severely food insecure" categories.

[21] CARI is an approach developed by WFP for reporting the severity of household food insecurity using a combination of indicators: Food Consumption Score, Share of Food Expenditure, livelihood coping strategies adopted, daily per capita intake in kilocalories, and poverty status. For more details on CARI guidance.

.Table 4: Description of the food security index categories

Food Security Index	Description	Food in/secure
Food secure	Able to meet essential food and non-food needs without engaging in atypical coping strategies	Food secure
Marginally food secure	Has minimally adequate food consumption without engaging in irreversible coping strategies; unable to afford some essential non-food expenditures	
Moderately food insecure	Has significant food consumption gaps OR marginally able to meet minimum food needs only with irreversible coping strategies	Food insecure
Severely food insecure	Has extreme food consumption gaps OR has extreme loss of livelihood assets that will lead to food consumption gaps or worse.	

3.4. Data collection

The CFSVA combines qualitative and quantitative primary data collection with secondary data review. Primary data was collected from households and key informants at the community level in all 30 districts by 30 enumerator teams over 40 days from April to the first week of May 2021. Secondary data, which includes a review of food security literature in Rwanda, were used to complement primary data analysis.

3.4.1. Survey instruments

Three instruments were used for qualitative and quantitative primary data collection:

- a community questionnaire administered to key informants (including local leaders and local population) through focus group discussions around questions about community infrastructure, market information, agricultural crop calendar, nutrition, shocks, and assistance received, which will helped to contextualize the results from the household interviews.
- a household questionnaire administered to randomly selected households that included questions on demographics, housing facilities, assets, agriculture, livelihoods, income and expenditure, access to credit, food consumption and food sources, shocks, coping strategies, and assistance received.
- a mother and child questionnaire administered to women of reproductive age (15-49 years) within households, which included questions regarding pregnancy, health, hygiene, and food consumption. In addition, the questionnaire included an anthropometric section for children 6-59 months and a section on IYCF practices, pertaining to children between 6-23 months.

The instruments were first developed in English and subsequently translated into Kinyarwanda. Tablets programmed with the questionnaires under Open Data Kit (ODK) were used for the data collection.[22]

3.4.2. Sampling

The sampling frame for the 2021 CFSVA was designed to provide statistically representative and precise information for food security and nutrition at the district level. Both urban and rural households from all 30 districts, including the City of Kigali, were included in the sample.

A two-stage cluster sample procedure was applied by district. The first stage comprised random sampling of 30 villages per district with probability proportional to the population size. In the second stage, 10 households in each of the 30 villages in the 30 districts were selected for participation in the survey. A systematic random sampling technique was employed to select 10 households from the list to be interviewed. A household was eligible for participation in the survey if its members lived in one of the selected villages at the time of the interview.

In total 9,000 households were interviewed countrywide, including 8,012 women aged 15 to 49 years old. Questions were asked to caretakers of 5,776 children aged 0 to 59 months. Anthropometric measurements were administrated to 5,137 children between the ages 6 to 59 months. The IYCF module was administered to caretakers of 2,154 children between 6 to 23 months. In addition, focus group discussions were carried out in the 900 villages where the assessment took place.

3.4.3. Survey quality assurance

All possible steps were taken to ensure that the results accurately represent the food security and nutrition situation in Rwanda. The enumerators were trained on the methodology and questionnaires, including training on taking anthropometric measurements and conducting interviews.[21] A careful translation of the questionnaires was conducted to avoid misunderstanding of the questions and to ensure questions were asked correctly. Moreover, data collection of the 30 enumerator teams was closely supervised by a team of 30 supervisors, including WFP, NISR, MINAGRI, and UNICEF, who were deployed for weekly field visits throughout the data collection period to ensure that data was collected in a standardized manner, including daily checks on anthropometric data.

[22] https://opendatakit.org

[23] A total of 179 enumerators participated in 9 days of training prior to data collection. The training covered instructions on how to select respondents, conduct interviews, and take anthropometric measurements. It included field testing and practice sessions. After the training, the best 150 enumerators and team leaders were selected through a test and were sent to the field in teams of five (2 for food security, 2 for nutrition and 1 team leader).

3.4.4. Data cleaning and analysis

Data was downloaded directly from the tablet used for data collection to a Microsoft Access database and exported to SPSS software for analysis. Data was cleaned and analysed according to the analysis plan validated by the technical committee for descriptive statistics on demographics, housing and facilities, assets, access to credit, agriculture production, livelihoods, incomes and expenditures, food consumption, shocks, coping strategies, assistance variables, and nutrition for women and children under 2 (IYCF). Causal analysis was also done to elucidate underlying causes of food insecurity and malnutrition. Z-scores for wasting, stunting, and underweight were computed using ENA software. Despite the ongoing COVID-19 pandemic, data collection was fully completed with 100 percent coverage of the sample reached.

3.5. Study limitations

Nutrition sampling

The survey was designed to be statistically representative for nutritional data at the district level. Based on ENA software and 2012 population statistics, which indicates that 15 percent of the population is made of children aged 6-59 months, the plan was to measure 199 children 6-59 months among the 300 households that were interviewed in each district (i.e., 5,970 children 6-59 months in total). The planned sampling for children under five could not be reached in all districts because the number of children under 5 were below the expected numbers. The discrepancy between the planned and actual numbers of children of this age group per district varies from -60 children in Kamonyi to +91 in Gicumbi. Nevertheless, the nutritional data remains representative in the district level, but with a wider confidence interval (1%).

Seasonality

The 2021 CFSVA data collection was conducted from the beginning of April into the first week of May, just before the lean season (starting around mid-May), while the 2018 CFSVA was conducted in the beginning of March up to the beginning of April. The period of data collection may influence the food security trends.

Key informant questionnaire

The sampling for community information was not designed to be statistically representative at the village-level in Rwanda; thus, the information from key informant focus groups was used as contextual information only.

04. HOUSEHOLD CHARACTERISTICS

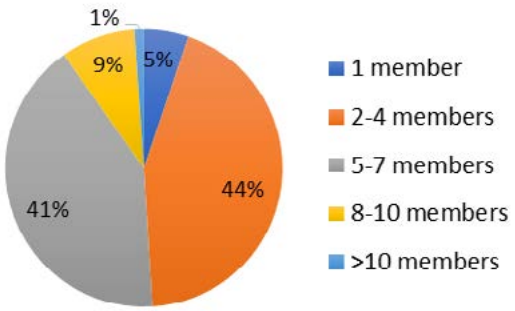
KEY MESSAGES

- Household size is 4.7 persons on average with a dependency ratio of 1:1.
- 74 percent of households are headed by a man and 26 percent by a woman, 11 percent by a disabled person and 26 percent by a 60+ years aged person.
- The poorest households live in the Southern Province (57 percent of households are in the two poorest wealth quintiles).
- 16 percent of households interviewed are in Ubudehe 1, 41 percent in Ubudehe 2, 40 percent in Ubudehe 3 and 1 percent in Ubudehe 4.
- 35 percent of households rely on only one source of livelihood, while 44 percent rely on two
- 21 percent of households rely on three livelihood activities. The first activity typically contributes to 76 percent of income.
- 90 percent of households are farmers and 83 percent raise livestock (as a 2nd or 3rd activity). For this study, 60 percent are considered as agriculturalists, 25 percent are daily labourers (agricultural or unskilled) and 15 percent are traders, salaried workers, skilled or artisanal workers.
- Around 9 percent of households changed their main livelihood activity in the last 12 months because of the impact of the COVID-19 outbreak.
- At national level 76 percent of households have access to drinking water and 80 percent have improved sanitation facilities.

4.1. Household demographics

According to the 2021 CFSVA, the average household size is 4.7 and on average 50 percent of household members are dependents (younger than 15 years or older than 60 years). The ratio of active members is 0.46, with most households having two active members. Households with a higher number of members over the age of 18 years are generally wealthier.

Figure 11: Size of households



4.1.1. Head of households

Heads of households are mainly aged between 40 and 60 years old and 25 percent of heads of households are more than 60 years old. Nationally, 26 percent of all households are headed by women. In total, 11 percent of all heads of households are disabled.

Around 58 percent of heads of households are married with one spouse (2.2% of head have more than one spouse), 22 percent are single or widowed, and 6 percent are separated or divorced.

According to the 2021 CFSVA, 67 percent of heads of households have some education and 63 percent know how to both read and write. When comparing households headed by men and women, the latter had fewer opportunities to be educated. On average, 58 percent of female heads of household have received an education compared with 82 percent of male heads of household. Around 24 percent of female heads completed primary school and 2 percent secondary school while 44 percent of male heads completed primary school, 7 percent secondary school and 3 percent university.

Around 10 percent of heads of households have a managerial role in the community where they live. One-third are involved in an association or cooperative and 17 percent of them have a managerial role in this cooperative.

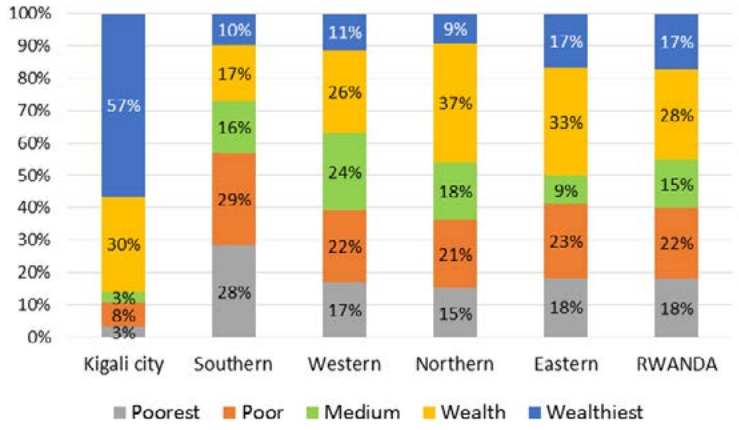
4.2. Wealth poverty

4.2.1. Wealth index

Since the 2015 CFSVA, a wealth index was introduced to classify households according to their estimated wealth status. The wealth index was developed based on a principal component analysis (PCA) and ranks households based on asset ownership and housing characteristics into wealth quintiles. The assets and housing characteristics included in the 2021 CFSVA were the same as for the 2018 CFSVA: ownership of an iron, TV, mobile phone, cooker, fridge, plough, grinding mill, sewing machine, improved lighting, improved flooring, improved walls, improved toilet and more than two sleeping rooms in the house.

The wealth index measures relative wealth, and unlike a poverty line, it is not an absolute measure of poverty or wealth. When referring to the wealth of households based on the wealth index, households can be described as relatively poorer or wealthier, but households cannot be identified as absolutely poor or wealthy. Wealth index gives an indication of the longer-term economic status of a household (Figure 12). The Southern Province presents 57 percent of households in the two poorest quintiles while only 11 percent for Kigali City.

Figure 12: Percentage of households in each wealth quintile by province

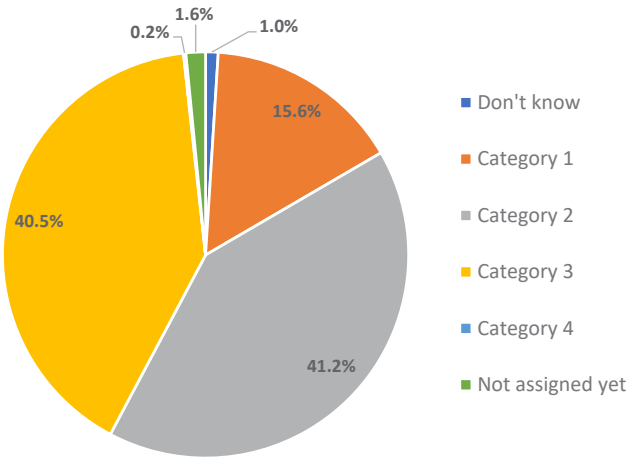


4.2.2. Ubudehe Categories

In 2015, The Government of Rwanda adopted a community based system of classifying all Rwandan households into four categories (Ubudehe categories) that reflect their socioeconomic status (see description in Annex). MINALOC undertook the third revision of Ubudehe classification and extended it to five categories starting from January 2021. Nonetheless, the previous classification was used for this 2021 CFSVA.

The districts with a higher percentage of households in category 1 (poorest) are Nyamasheke (40%), Nyaruguru (30%), Gisagara and Nyamagabe (21%), Musanze, Ngororero, Ruhango, Burera and Karongi (20%). The number of households classified in category 4 was very little (0.2 percent of sampling). Those households live in Kigali City.

Figure 13: Repartition of households into Ubudehe categories



4.3. Livelihood groups

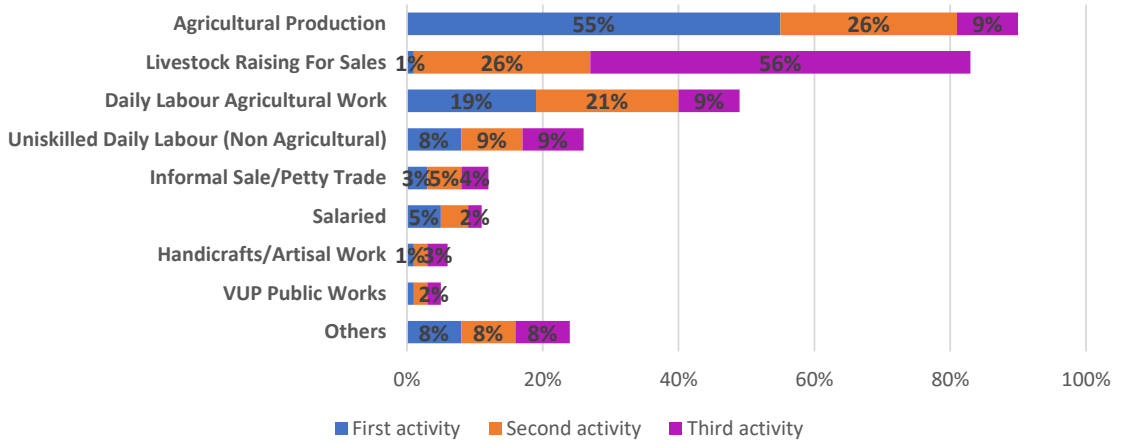
4.3.1. Income-generating activities

Food security status and vulnerability to different shocks depends on households' livelihoods and the way they sustain them. In the 2021 CFSVA, households were asked how many activities they relied on to sustain their livelihoods, and what their three most important income activities were.

In Rwanda, 35 percent of households relied on only one livelihood activity, 44 percent on two livelihood activities, and 21 percent rely on three or more livelihood activities. The first activity contributes 76 percent of income, while the second activity contributes 28 percent and the third, 13 percent. Only 12 percent of household members (different from the head) contribute to income activities and 0.7 percent are children between 16-18 years old.

The activities most commonly engaged in by households are agricultural production (90% of households), livestock raising for sale (83% but mainly as a second or third activity), daily labour agricultural work (49%) and unskilled daily labour (26%). Only 9 percent of households reported having changed their main activity due to COVID-19.

Figure 14: Percentage of households involved in three main income-generating activities



4.3.2. Livelihood groups

To reduce the number of livelihood groups in the analysis, households were grouped primarily based on their main income-generating activity, followed by similarities like the activity and in per capita expenditure. Based on this information, households were initially classified into eight groups according to their primary livelihood activity. In addition, households relying on agriculture as their main livelihood activity were divided into three groups: agro-pastoralists earning at least 10 percent of their income from livestock, low-income agriculturalists (purely crop-growing farmers) with an annual per capita expenditure of less than 159,375 RWF and medium/high income agriculturalists earning more than 159,375 RWF per year.

This classification resulted in nine livelihood groups: (1) low-income agriculturalists; (2) medium/high income agriculturalists; (3) agro-pastoralists; (4) agricultural daily labour; (5) unskilled daily labour; (6) skilled labour; (7) formal/informal trade and petty trade; (8) salaried work and own business and; (9) artisanal work.

Table 6: Profile of livelihood groups

LIVELIHOOD GROUPS (% proportion	DESCRIPTION (based on average group characteristics)	2018	2021
		% in the two lowest wealth quintiles	% in the two lowest wealth quintiles
Low-income agriculturalists Rwanda: 35%	Low income agriculturalists obtain the vast majority (79%) of their income from their own land, with some contribution from daily agricultural labour (10%).	48%	47%
Agricultural daily labour Rwanda: 19%	Agricultural daily labourers gain 75 percent of their income from daily agricultural labour and 18 percent from their own crop production.	64%	66%
Agro-pastoralists Rwanda: 15%	The main income source of Agro-pastoralists is crop production on their own land (63%) with an important contribution from raising livestock for sale (28%).	38%	29%
Medium/high income agriculturalists Rwanda: 9%	The medium/high income agriculturalists obtain the vast majority (80%) of their income from their own land and other numerous activities.	17%	25%
Artisanal work/other Rwanda: 5%	Artisans and households in other activities gain 37 percent of their income from artisanal work and 43 percent from "other activities" with other contributions from own agricultural production (10%).	14%	34%
Unskilled daily labour Rwanda: 7%	These households combine income from daily labour (73%) with agricultural production (13%).	34%	40%
Salaried work/own business Rwanda: 5%	This group gains 66 percent of income from salaried work and 17 percent from their own business or self-employment.	3%	5%
Trade/petty trade Rwanda: 3%	These households on average get 67 percent of their income from informal/petty trade, 10 percent from trade with agricultural products and 9 percent from their own agricultural production.	6%	17%
Skilled labour Rwanda: 2%	This group gains 40 percent of income from unspecified skilled labour activities and 36 percent from transport.	5%	18%

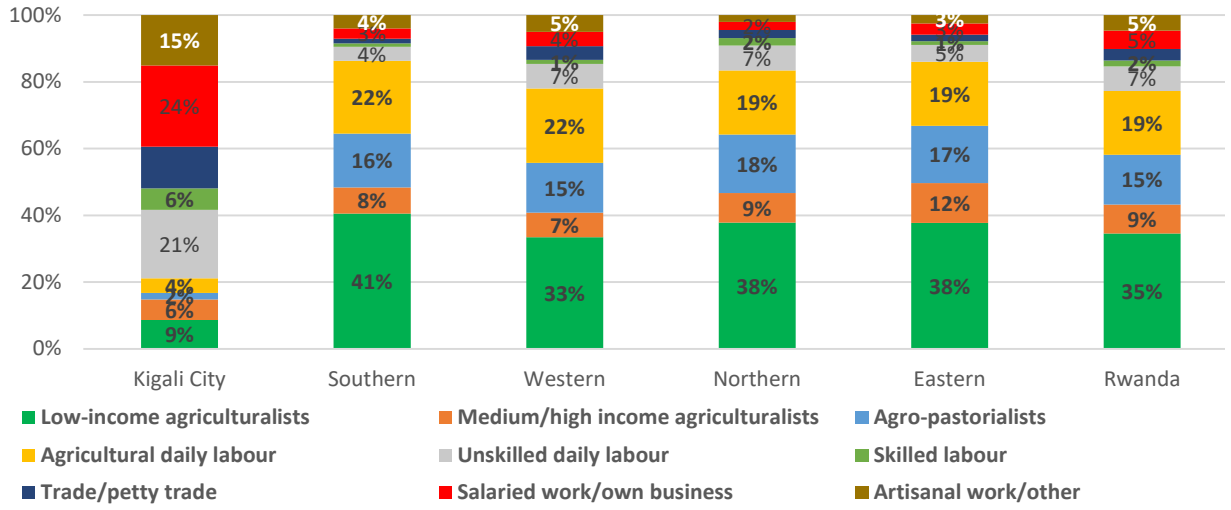
Almost 90 percent of households rely mainly on agriculture, but 59 percent in this assessment are considered agriculturalists because they earn at least 60 percent of their income from their land (low/medium/high-income agriculturalist and agro-pastoralists). Agricultural daily or unskilled labourers represents around 26 percent of the livelihoods. Around 15 percent of households make a living from trade, business, skilled labour, artisanal work or salaried work (Table 6).

Compared to CFSVA 2018, there is a slight increase of low-income agriculturalists (+2%), medium/highincome agriculturalists (+2%) and agricultural daily labourers (+3%). Agro-pastoralist households are less represented in the two poorest quintiles (from 38 percent in 2018 to 29 percent in 2021) while there is an increase of skilled daily labourers (from 5% to 18%) and traders (6% to 17%) among the poorest.

Households living mainly from agriculture (low/medium/high-income agriculturalists) are equally headed by a female or a male. However, households that have salaried workers/business or skilled labourers are generally managed by a man while those involved in precarious livelihood such as agricultural daily labour are mainly headed by a female.

In terms of geography, agricultural households and are equally represented throughout the Provinces except for Kigali City. The Eastern Province has slightly more medium to high agriculturalists. It was observed that there are more traders, salaried workers, business holders and artisanal workers in the Western Province. In the City of Kigali, households comprised mostly salaried/own business workers (24%), and non- agricultural unskilled daily labourers (21%), artisanal workers (15%) and petty traders (12%) (Figure 15). Households in Rwanda, except in Kigali City, remain highly dependent on agricultural activities.

Figure 15: Livelihood groups by province

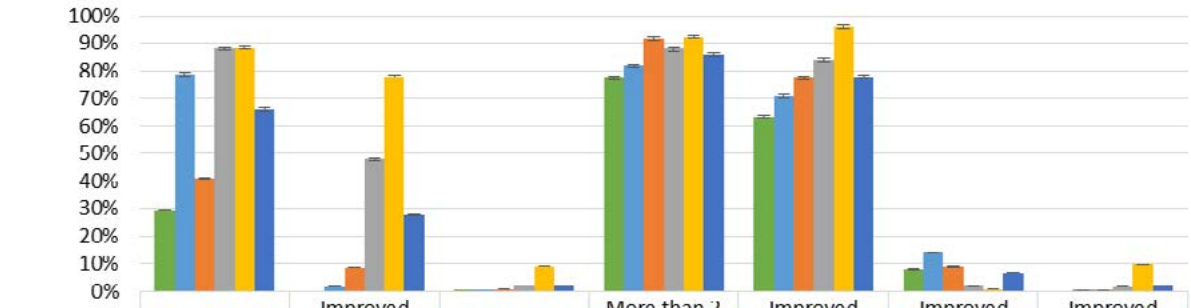


4.4. Housing status

Half of the households (51%) are settled in villages referred to as an "umudugudu" and 6 percent in town. For the city of Kigali, 44 percent live downtown, 42 percent in suburban areas and 14 percent in a village. Almost 90 percent of households in the country own their house. In Kigali City, 55 percent are landlords, 45 percent are renting, and 5 percent of households live rent-free. Enhancement in wealth status is related to better housing facilities. For this study, 86 percent of households have more than two bedrooms, 78 percent have improved toilets, 66 percent improved roofs, 28 percent improved flooring and 2 percent improved walls. Only 6 and 2 percent of households benefitted from adequate lighting and cooking facilities (Figure 16).

Regarding house crowdedness, 18 percent of households have at least one room per person and 43 percent one room per two persons.

Figure 16: Housing facilities by wealth quintile



	Improved roof	Improved floor	Improved wall	More than 2 bedrooms	Improved toilet	Improved lighting	Improved cooking
Poorest	30%	0%	0%	77%	63%	8%	0%
Poor	79%	2%	0%	82%	71%	14%	0%
Medium	41%	9%	1%	92%	77%	9%	0%
Wealth	88%	48%	2%	88%	84%	2%	2%
Wealthiest	89%	78%	9%	92%	96%	1%	10%
RWANDA	66%	28%	2%	86%	78%	6%	2%

4.5. Access to water source and sanitation

4.5.1. Water source and treatment

The 2021 CFSVA findings show that access to drinking water reaches 76 percent of households (compared to 79% in 2018) with 95 percent in Kigali City and 68 percent in the Eastern Province. The main source of drinking water outside Kigali City is a public tap (32%) and boreholes with a pump (32%). In the Eastern Province, still a high level of households (26%) reported fetching water for drinking from the lake, pond and/or river. In Kigali City, almost half of households (47%) own a water tap at home (Table 7).

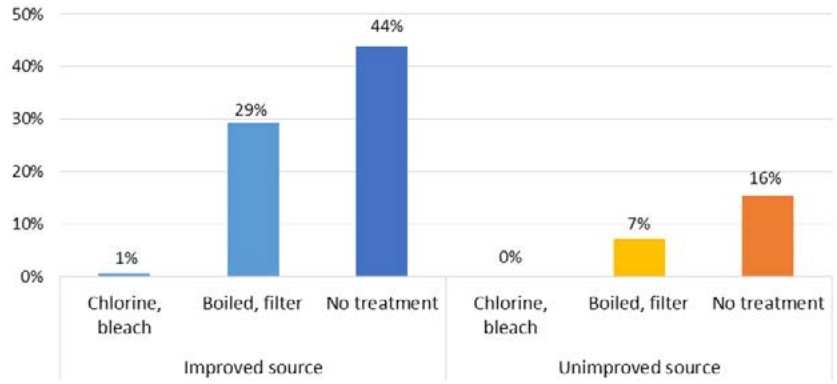
Table 7: Percentage of households using different sources of water by Province

	IMPROVED SOURCES						UNIMPROVED SOURCES				
	Protected dug well or spring	Public tap/ piped water	Water tap at home	Borehole with pump	Vendor	Total improved sources	Surface water (Pond, lake, river or stream)	Unprotected well or spring	Rain water2	Other	Total unimproved sources
Kigali City	1%	39%	47%	7%	0%	**95%**	1%	3%	0%	1%	**5%**
Southern	2%	17%	6%	58%	0%	**82%**	8%	9%	0%	0%	**18%**
Western	1%	29%	8%	34%	1%	**73%**	11%	14%	1%	1%	**27%**
Northern	1%	39%	6%	32%	0%	**78%**	10%	11%	1%	0%	**22%**
Eastern	2%	39%	6%	15%	1%	**64%**	26%	9%	1%	1%	**36%**
RWANDA	1%	32%	11%	32%	0%	**76%**	12%	10%	1%	1%	**24%**

Most household members walk to get their water, which takes on average 20 minutes. However, in the Eastern Province some households reported walking for more than an hour. Around 43 percent of households must use an alternate source of water which is mainly rainwater (53%) or water fetched from the lake, pond and/or river (11%). Some use water from boreholes and/or a public pipe (38%) and must pay for its use (22%).

A majority of households (60%) do not treat water before using it, but among those that do, the most common water treatment method is boiling (35%). The largest share of households consumes untreated water from an unimproved source (40%), followed by treated water from an improved water source (36%) (Figure 17).

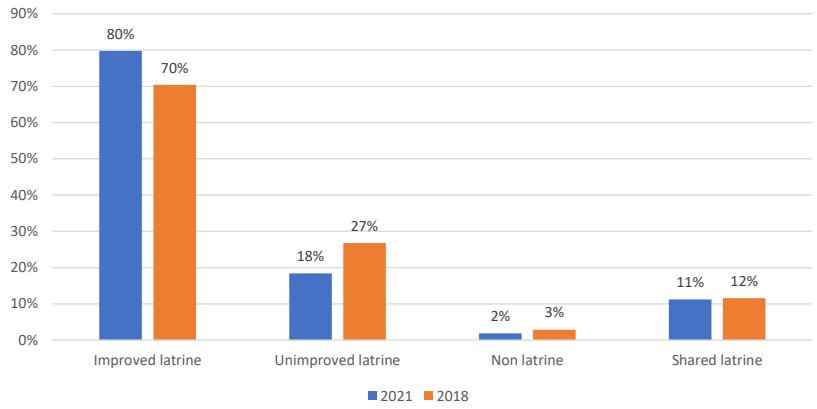
Figure 17: Percentage of use of water source and treatment



4.5.2. Sanitation

From the 2021 CFSVA findings, 80 percent (+9% compared to 2018 CFSVA) of households have access to improved sanitation facilities which are mainly non-shared and have a covered pit latrine. Still 13 percent of households reported sharing toilet facilities with neighbours.

Figure 18: Sanitation



05. FOOD AVAILABILITY

KEY MESSAGES

- Main food crops grown by households included: beans (81%), maize (58%), white fleshed sweet potato (31%) and Irish potato or tubers (22%).
- Crop season 2021A were globally higher compared to season 2020A and 2018A.
- 57 percent of households have a plot size < 0.5 ha and 27 percent < 0.1 ha divided into 3 to 4 sub-plots.
- 84 percent of low-income agriculturalists own less than 0.5 ha.
- Households sourced 60 percent of food from production and 40 percent from market.
- 77 percent of beans and 65 percent of maize production are consumed by household, 10 percent and 33 percent are sold.
- Households' food stock for beans and Maize last for 3.8 and 3.4 months in average.
- 38 percent of households rear cattle and 28 percent consume animal products.

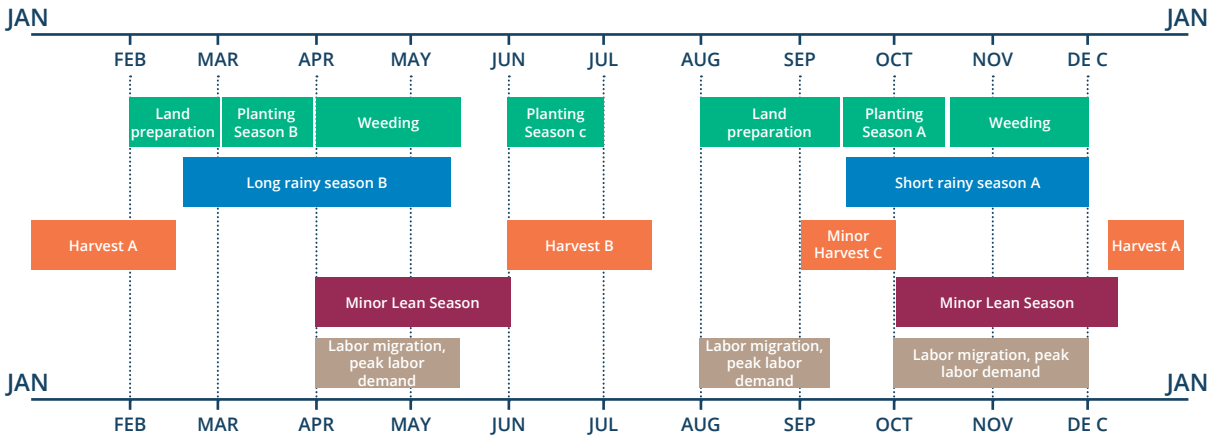
5.1. Farm characteristics and agricultural practices

The total land area of Rwanda is estimated at 2.377 million hectares for which 1.43 million hectares (60% of total country land) is used for agriculture. Rwandan agriculture is smallscale, almost exclusively rainfed with only 9.2 percent of households that irrigate part of their land. Differences in rainfall patterns and the timing of moisture availability will influence the variety and type of crops that are grown across the country. The adoption of modern technologies and practices is progressive.

There are two distinct agricultural seasons across the country as well as a third season that occurs in lowland marshland areas during the drier season (Figure 18):

- **Season A** starts in September and ends in February of the following calendar year, with the main harvest in December to February.
- **Season B** starts in March and ends in June of the same calendar year with the main harvest in June-July.
- **Season C** starts in July and ends in September of the same calendar year with the harvest in September.

Figure 19: Seasonal agricultural calendar for Rwanda (FEWS NET)



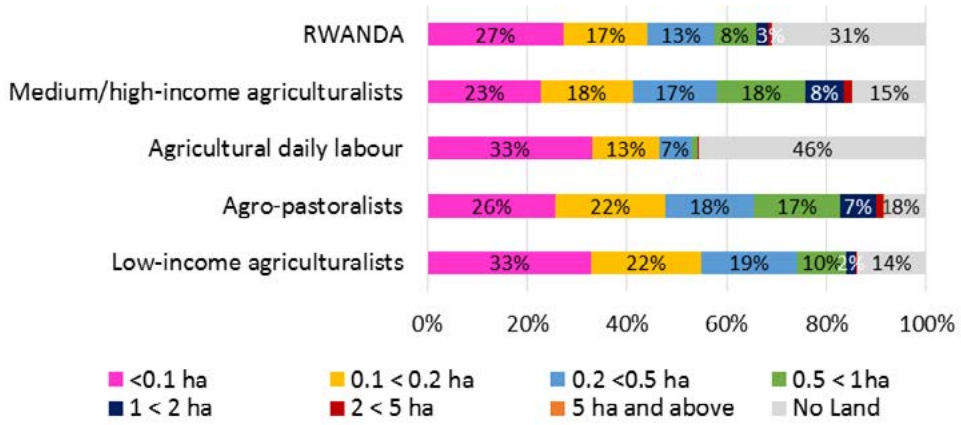
Rwandan agriculture is characterized by small production units. Around 71 percent of the cultivated area is a mixed cropping system. According to CFSVA 2021, 69 percent of households own farmland. Most of the households (57 percent) cultivate less than 0.5 ha and 27 percent farm less than 0.1 ha divided into three to four sub-plots (Figure 20). On average, 3.2 crops per plot are grown. The small size of the plots is one of the main agricultural constraints that hinder sufficient agricultural production for agricultural households.

Farmlands are wider in the Eastern Province (between 0.2 to 0.5 ha on average) and smaller in the Western Province (between 0.1 and 0.2 ha on average). In Kigali City, only 23 percent of households own farmland.

Figure 20: Farmland size in 2018 and 2021

Looking at rural households, 84 percent of low-income agriculturalists own less than 0.5 ha. Most of the agricultural daily labourers have no land (63 percent) or land smaller than 0.1 ha (23 percent). Large plots belong to agro-pastoralists and medium/high-income agriculturalists, but only 10 percent of them own land larger than one hectare (Figure 21).

Figure 21: Land size by household's agricultural profile



The infrequent use of chemical fertilizers and pesticides, low level of equipment and limited use of research-based technologies result in small yields which are also very vulnerable to climatic changes.

Figure 22: Percentage of households by land practices

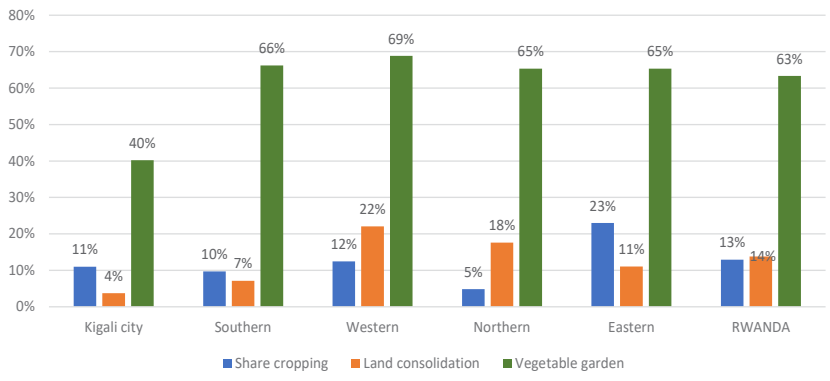
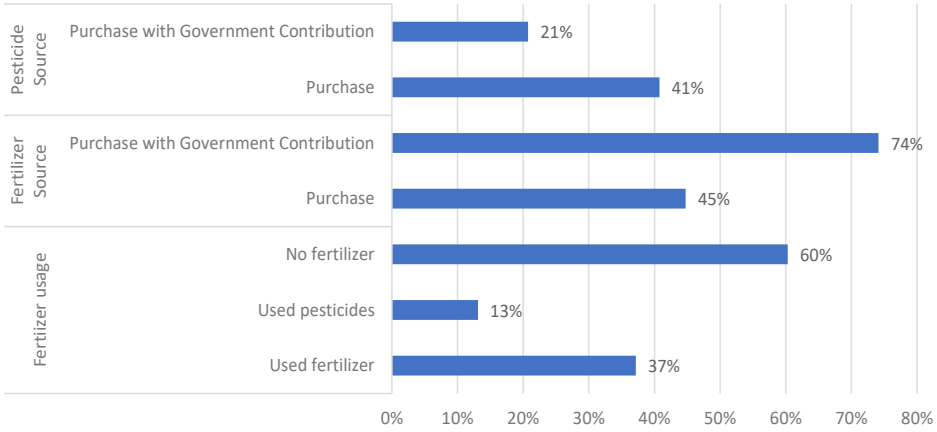


Figure 23: Expected agricultural production (in MT) for 2018, 2020 and 2021 A seasons (SAS)



The 2021 CFSVA findings show that 37 percent of farmers used fertilizers and 13 percent pesticides. Fertilizers and pesticides are mainly purchased by farmers (43% and 74%) or with government contribution (43% and 22%). Regarding land use, 13 percent of farmers practice share cropping and 14 percent land consolidation. Irrigation is applied by 7 percent and soil conservation by 61 percent of farmers. About 63 percent of households reported cultivating a vegetable garden (Figure 22 & 23). The soil conservation mentioned here includes terraces, agroforestry and other soil and water conservation practices

The decisions about agriculture production are taken by both the head of household and the spouse together in 67 percent of cases, and by the head alone in 27 percent.

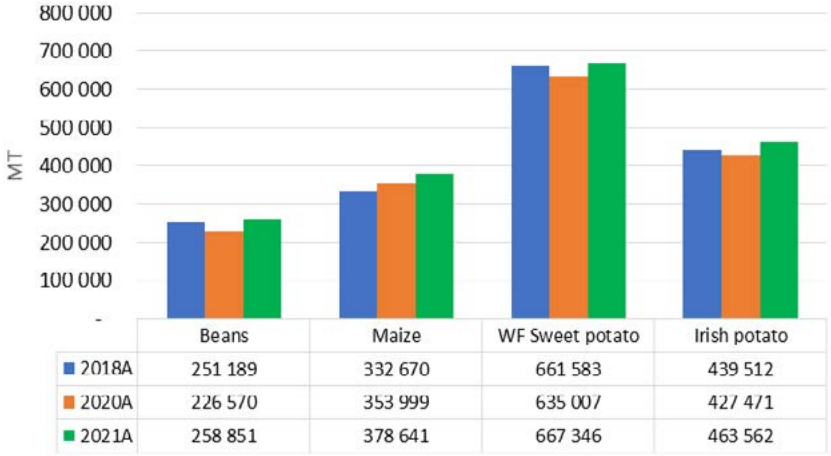
5.2. Crop production

The main food crops planted are maize, bean, sweet potato, cassava, banana, sorghum and potato, of which the first five are present in 90 percent of farmlands and constitute the common basis for all the regions of Rwanda. Some crops, like bananas, potatoes, different varieties of wheat, sorghums and beans are subject to a very large scale trading. Coffee, tea and pyrethrum are the main cash crops.

The 2021 CFSVA findings show that 81 percent of households cultivated beans, 58 percent maize, 31 percent white-fleshed sweet potato, 22 percent Irish potato or other tubers as one of their main crops during the season 2021A.

The SAS 2021A showed an increase in the global crop production compared to 2020A (7 percent higher for maize, 14 percent for beans, 5 percent for white flesh sweet potato and 8 percent for Irish potato) (Figure 24). In comparison with the season 2018A (related to the last CFSVA), crop productions globally increased by 3 percent for beans, 14 percent for maize, 1 percent for white flesh sweet potato, and 5 percent for Irish potato nationally. However, beans and maize productions decreased in Gisagara, Gicumbi, Gatsibo and Rulindo for the same comparison periods (see annex 2).

Figure 24: Expected agricultural production (in MT) for 2018, 2020 and 2021 A seasons (SAS)



	Beans	Maize	WF Sweet potato	Irish potato
2018A	251 189	332 670	661 583	439 512
2020A	226 570	353 999	635 007	427 471
2021A	258 851	378 641	667 346	463 562

Crop production varies following rainfall pattern and agricultural practices. 2021A season was particularly humid (Figure 25). However, some regions were periodically facing rainfall deficit which had an impact on the development of crops. The Southern Province, in particular the districts of Nyaruguru and Huye encountered a rainfall deficit of 80% < Long Term Average (LTA) in December 2020.

According to the Agricultural Stress Index (ASI) from FAO/ GIEWS, the districts of Ngororero, Karongi, Nyamasheke, Huye and Nyaruguru were subject to hydric stress (>25% of average) in October 2020 (Figure 24).

Figure 25: Precipitation anomaly from September 2020 to February 2021

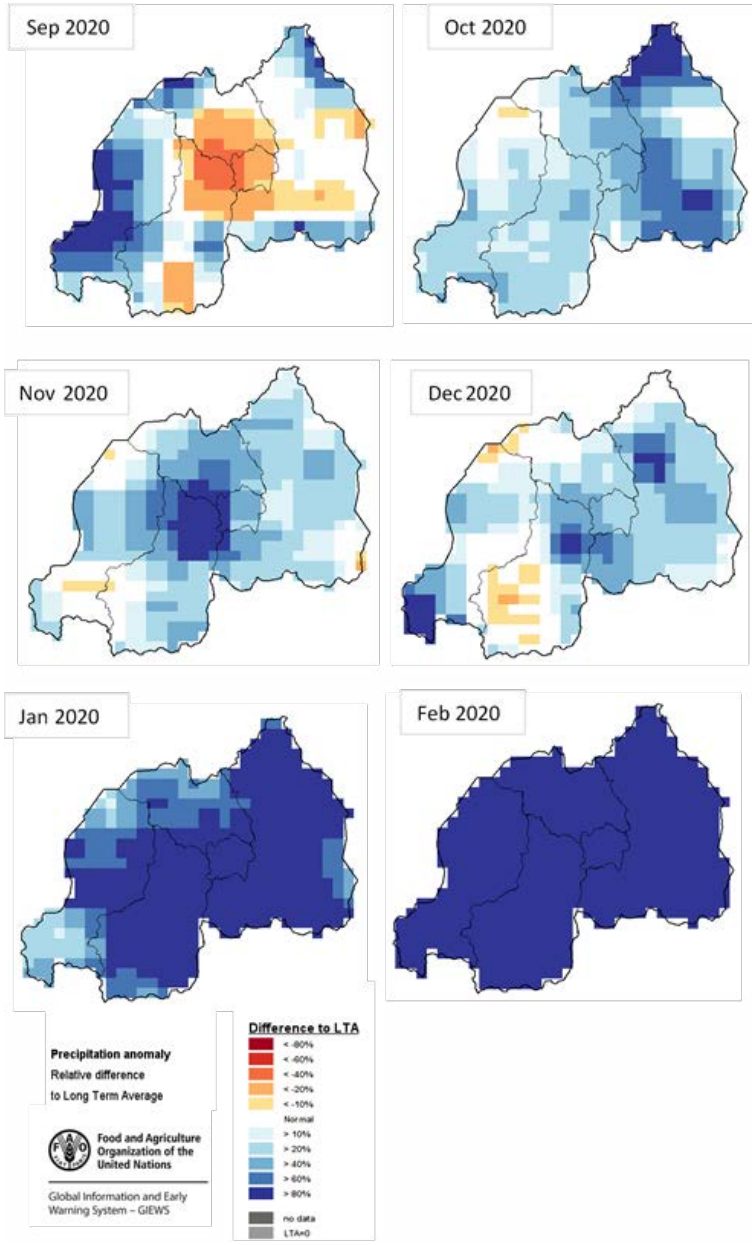
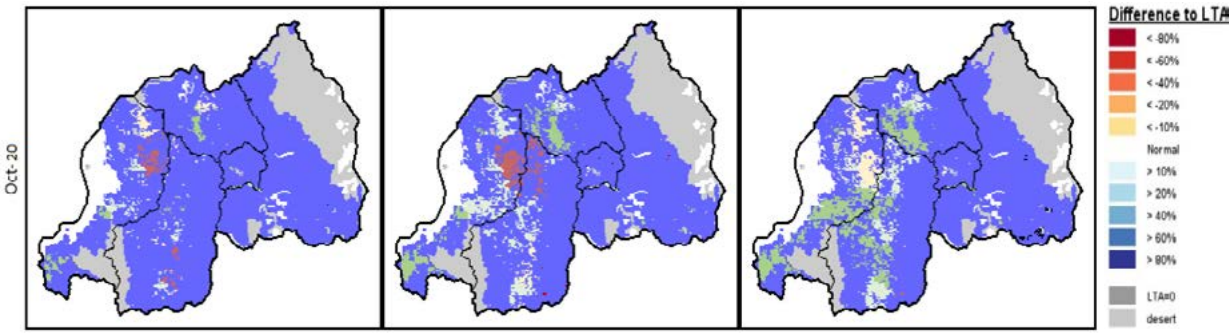


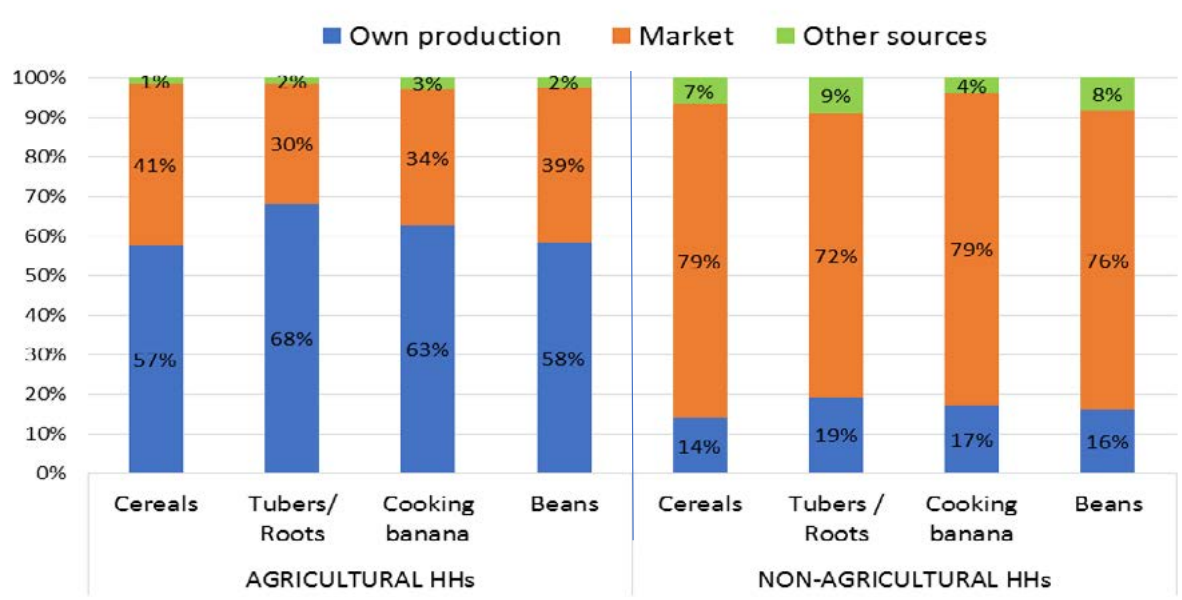
Figure 26: Agricultural Stress Index in 3 decades of October 2020 (FAO/GIEWS)



5.3. Use of crop production and food stock

Even though the percentage of food from household production was higher in farming households, these households sourced around 60 percent of their main commodities (cereals, tubers, beans and leafy vegetables) from their own production and 40 percent from the market (Figure 25). This implies that the small-scale agriculture production system remains limited in terms of quantity and diversity of food produced as well as lack of post-harvest and storage management at the household level.

Figure 27: Food sources for main commodities during the last 12 months



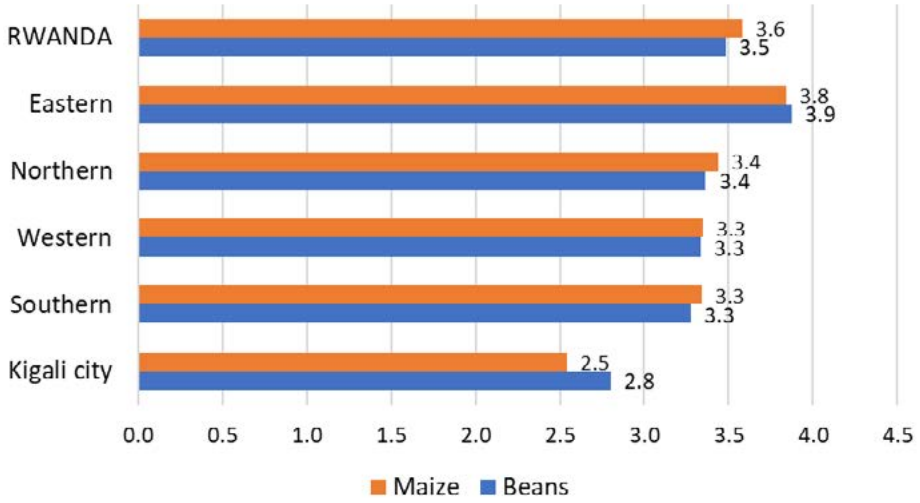
This CFSVA showed that for Season 2021A, around 77 percent of beans produced at the household level was kept by households for their consumption, 10 percent was sold, 9 percent was kept for seeds and 3 percent was given to relatives or was spoiled. For maize, around 65 percent was kept for household consumption, 33 percent was sold, 1 percent for seeds and 1 percent was given away or spoiled. Producers sell beans mainly to traders in sector markets (33 percent), directly in village markets (27 percent), and individual consumers/family/relatives (18 percent). Maize is sold to individual consumers/family/relatives (35 percent), to traders in district markets (24 percent) and sector markets (22 percent) (Table 8).

Table 8: Use of beans and maize from household's productions

	Beans	Maize
% cultivation	**93%**	**88%**
Use of production:		
For consumption	77%	65%
For sale	10%	33%
For seeds	9%	1%
For other purposes	3%	1%
Duration of stocks	**3.8 months**	**3.4 months**
Production sale:		
Sector market	33%	22%
Village market	27%	10%
Individual consumer, family and relatives	18%	35%
Purchasers in the field	12%	5%
District market	9%	24%
Average distance to buyers (in min)	**36 min**	**29 min**

During the survey, households were asked how long their stock for beans and maize kept for household consumption will last. Duration of stock slightly varies according to the area but on average maize and beans stocks last for three to four months except in Kigali where stocks last less than three months (related to land size, crop rotation and food preference) (Figure 28).

Figure 28: Duration of household's beans and maize stocks by province (in months) at the time of the survey



In case of emergency, the Government of Rwanda has established the National Strategic Grain Reserve to ensure food stocks availability. Under MINAGRI's leadership, the reserve addresses potential shocks to the food supply, improves food security while avoiding any market distortion.

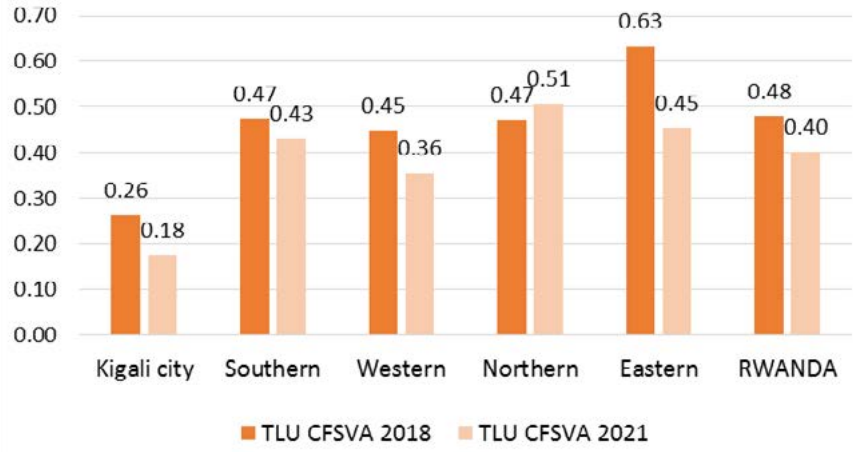
Rwanda has rolled out food relief programs amidst measures to curb the spread of COVID-19 with distribution from the National Strategic Grain Reserves across the country.

5.4.Livestock production

In Rwanda, animal breeding is limited to the size of the family and a small number of animals per household. As agriculture occupies the largest portion of land, the cattle graze in fallows, on-road borders, and in some parts of marginal lands. This obliges farmers to adopt semi-permanent stabling and to grow fodder crops; however, ranching is extending in the Umutara and Gishwati areas.

Livestock census was conducted through the 2012 Rwanda General Population and Housing Census[24]. In addition, the NISR conducts comprehensive agriculture household survey through the Agricultural Household Survey every 3 years. The EICV4 2013/2014 reported in 2013/2014 that about 68 percent of Rwandans raised livestock, mainly goats, cattle and chicken. The last 2018 CFSVA reported that around 50 percent of households raised livestock of which 39 percent was cattle. Based on the Tropical Livestock Unit, we observe a decrease in livestock ownership since 2018 in all provinces except the Northern Province (Figure 29).

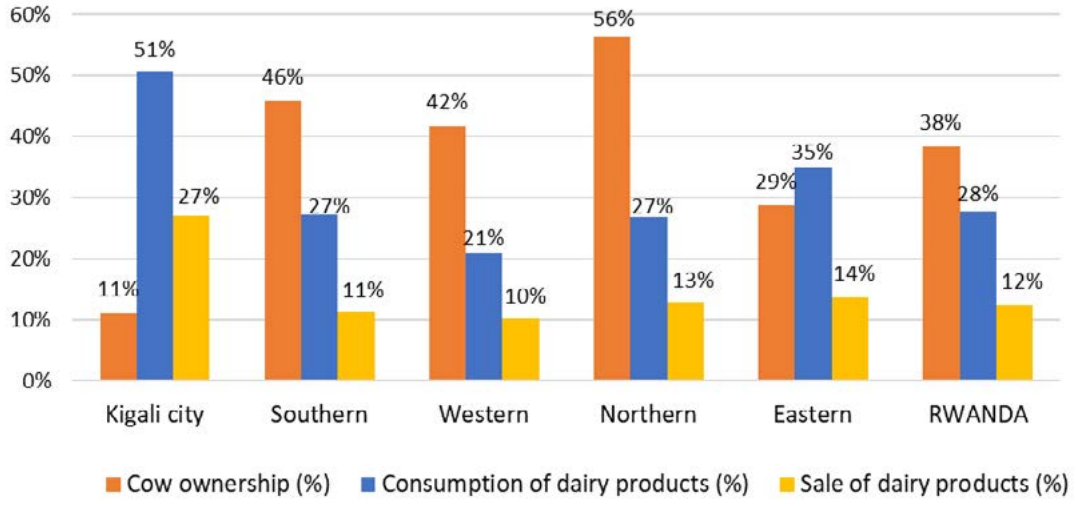
Figure 29: Tropical Livestock Unit by Province in 2018 and 2021



[24] National Institute of Statistics of Rwanda (NISR), Fourth Population and Housing Census, Rwanda, 2012; Main indicators report, page[91], https://www.statistics.gov.rw/publication/rphc4-main-indicators-report

In 2021, 38 percent of households surveyed reported rearing cattle and 56 percent specifically in the Northern Province. Girinka program highly contributed to this rise although no accurate statistics on cattle distribution is available. On average, households own 1.5 cows and 2.3 goats, except in the Eastern Province and Kigali City where they own more than 2 cows and 2.5 goats on average. In the months preceding the survey, 28 percent of households owning a cow consumed the products from their animal (milk, meat) and 12 percent sold the animal products. These percentages increase in Kigali City, to 51 percent and 27 percent respectively (Figure 30). Cattle are most of the time kept as a livelihood asset by speculation and for manure.

Figure30: Percentage of HHs owning a cow, selling and consuming their dairy products.



06. FOOD ACCESSIBILITY – MARKET ANALYSIS

KEY MESSAGES

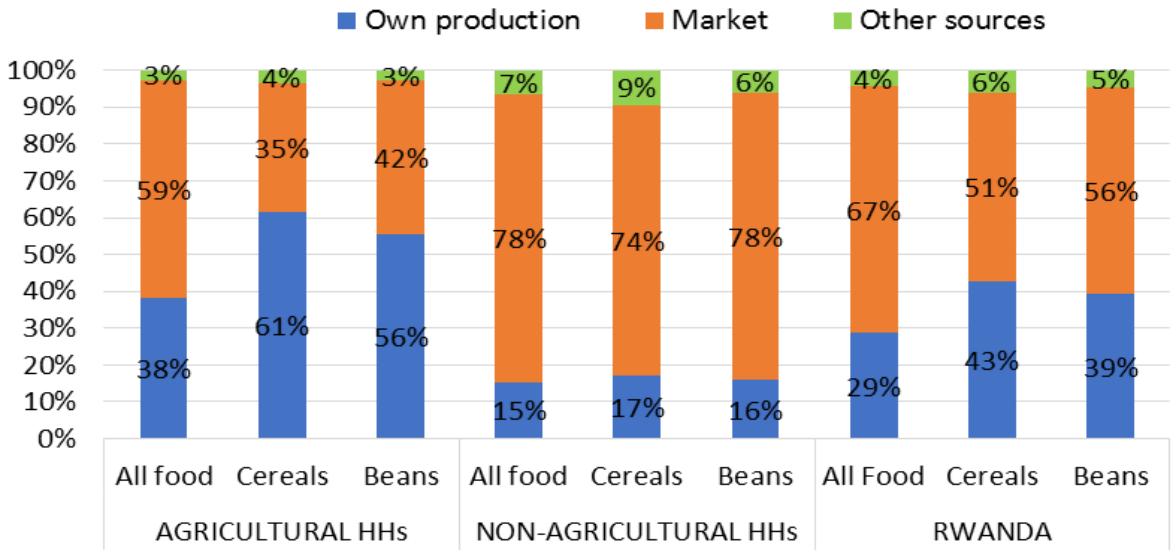
- 55 percent of food consumed by households come from markets (42% for beans and 35% for cereals) and 40 percent come from household production (in average for the last 12 months).
- Food availability on markets was sufficient even during the COVID-19 outbreak context.
- Food price (CPI) was 19 percent higher in March 2021 compared to March 2018.
- Incomes decreased in urban areas compared to 2018, mainly due to loss of wages and economic activities during COVID-19 containment measures.
- Terms of trade for beans and maize have progressively decreased since 2015 mainly for households living from agricultural wages.
- In April 2021, households spent on average 48 percent of their total budget on food and 14 percent of households spend more than 75 percent of budget.
- Highest food expenditure shares are observed in Rustiro (56%), Rubavu (56%), Ngororero (55%) and Burera (53%).
- Agricultural and unskilled daily labourers and female-headed households are the most vulnerable in terms of economic access to food.
- Nationally, 29 percent of households used credit to purchase food in the last 12 months.

Economic vulnerability is one of the domains analysed in addition to food consumption and asset depletion to assess household food insecurity.

6.1. Market dependency

The larger part of crops cultivated by households is consumed by households themselves, but crop growing households do not produce enough to cover their food needs. On average, two-thirds of food was bought at the market the week before the survey, while the last third came from household production or a small part from other sources. As expected, the share of food coming from household production is higher among households that practice agriculture and increases in line with the size of the land owned (Figure 31). The survey was carried out from the beginning of April to the beginning of May 2021. In most cases at that time, households still had food stocks.

Figure 31: Source of main food commodities during the week before the survey by household's main activities



Looking at a 12-month recall, agricultural households reported that 42 percent of beans and 35 percent of cereals are purchased at the market. This confirms a high market dependence for food, which is a finding similar to the previous CFSVAs.

Geographic disparities were also observed for market dependency. Households purchased 56 percent of beans at the market during the last 12 months (Figure 32). In districts with a large proportion of urban areas, the prevalence rises above 80 percent. However, some rural districts present a high market dependency like Rutsiro district (76% of beans purchased on market), Nyamagabe (69%) and Ngororero (66%), which underlines some food production or food stock issues.

Figure 32: Source of beans during the last 12 months by district

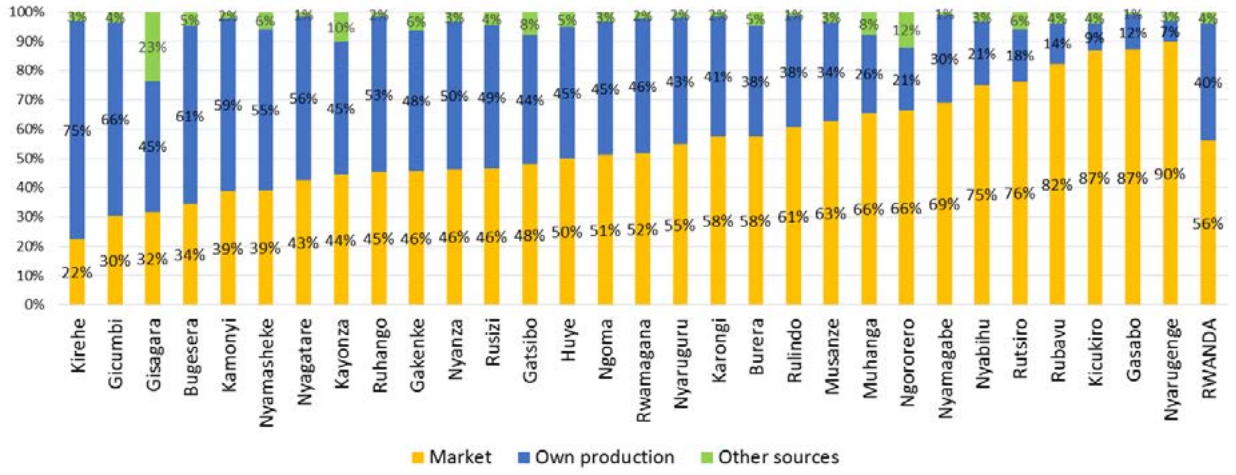


Figure 32 above provides information about household food sources at the time data was collected for the CFSVA. Food sources are not static over the year and follow seasonal patterns. The percentage of agricultural households sourcing their beans and cereals from their production peaks in the harvest period (June/July and from December to February) and the percentage of households buying foods from the market increases during the lean season (October/November and March). The source for roots, tubers, and cooking bananas vary slightly over the year. For non-agricultural households, the main source remains the market throughout the year.

6.2. Market performance

6.2.1. Food availability on the market

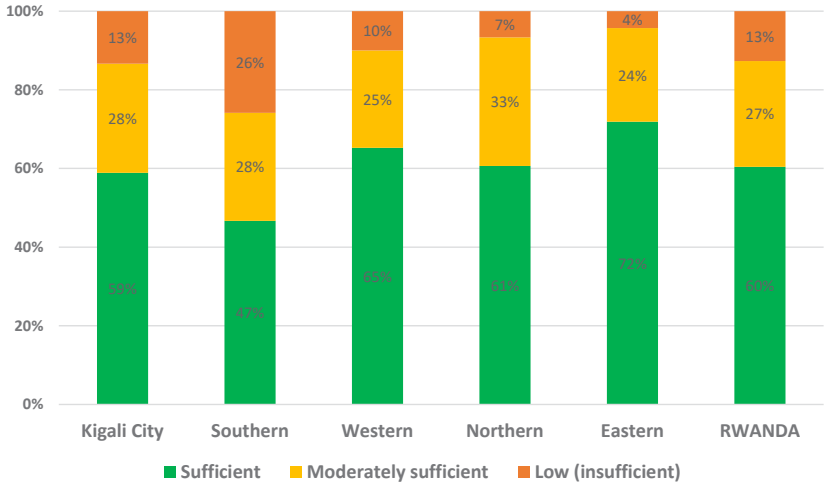
According to the 2014 WFP market assessment, the supply chain for major commodities such as maize and beans tends to be short and is comprised of three main supply channels: (i) collectors and assemblers towards large wholesalers/traders; ((ii) local retailers toward local consumers; (iii) cooperatives to government and relief agencies. Perishable commodities (potatoes, roots and tubers, bananas, and vegetables) have a shorter supply chain.

The 2021 CFSVA shows that around 10 percent of beans and 33 percent of maize produced by farmers are sold mainly on sector or village markets.

Despite COVID-19 preventive measures and global economic instability, the availability of general commodities was estimated to be sufficient (60%) and moderately sufficient (27%) by households, except in the Southern Province where 25 percent of households estimated that the availability of commodities in the markets was too low. In general, basic food commodities such as bread, wheat and rice were available at 94 percent in the market and shops, while fresh food commodities such as milk, eggs, meat, vegetables were available at 87 percent and 9 percent partially available. For non-food items, soap and hygiene products were available at 96 percent in the market and shops (96%).

At the district level, a lower availability of commodities was underlined in the markets of Muhanga (reported by 70% of villages), Gisagara (57%), Gasabo (40%), Nyamasheke (30%) and Ngororero (27%)

Figure 33: Food availability on markets by province

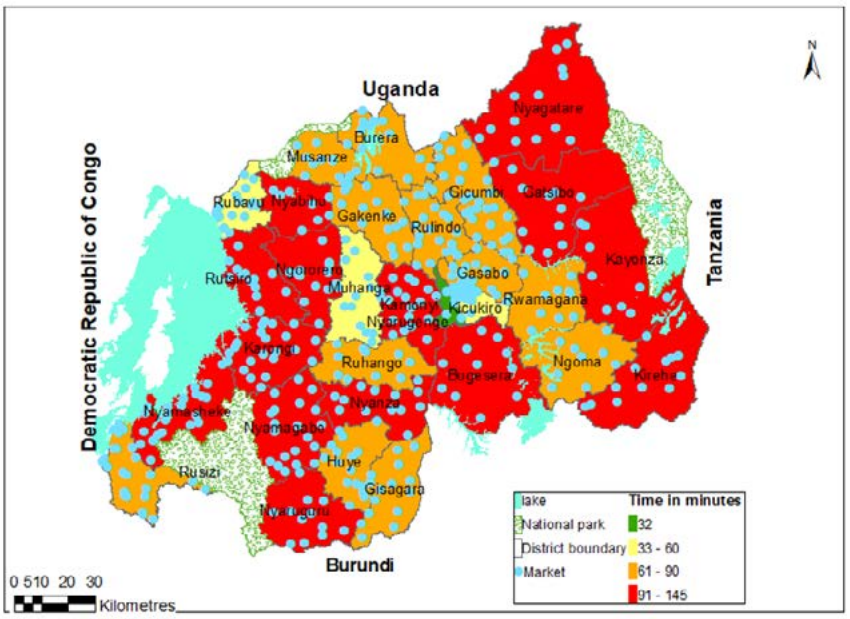


6.2.2. Market physical access

Rwanda has a notable number of markets (almost 450 in total), with at least one main market in each district. Nonetheless, the 2021 CFSVA found that only 4 percent of the sampled villages had a market at the village level. In villages without a market, it took on average 94 minutes to reach the nearest market. For 63 percent of villages, the market is accessible all-year-round using transport other than walking.

Villages in Bugesera, Kayonza, Ngoma, Muhanga, Gicumbi, Ngororero and Nyabihu district have more difficulties in accessing their main market all year-round other than by foot and it takes more than two hours to reach it (Map 1).

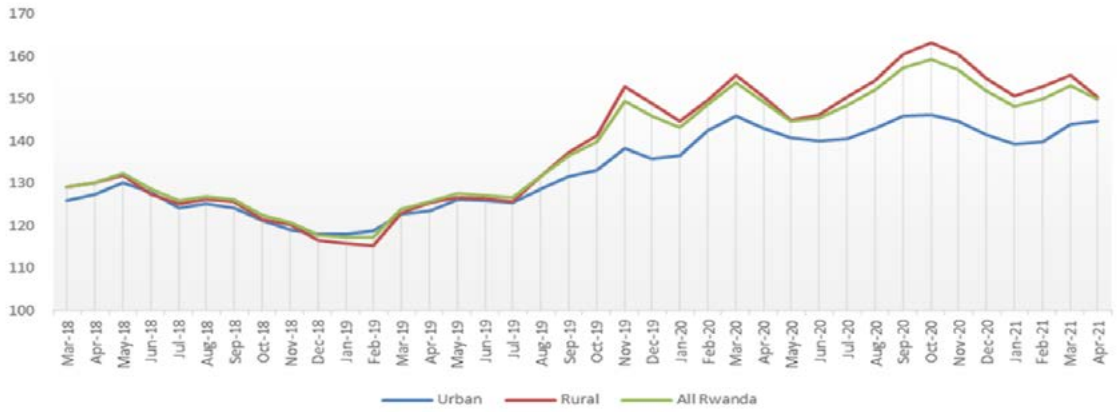
Map 1: Market location and average time to access the main market by district



6.2.3. Consumer Price Index (CPI) trends

According to the NISR database, the food CPI in March-April 2021 was higher than March-April 2018, for both rural and urban settings. From the graph below (Figure 32), the food CPI was 19 percent higher in March 2021 compared to March 2018, and 15 percent higher in April 2021 compared to April 2018.

Figure 34: Urban and Rural Consumer Price Index for food and non-alcoholic beverages



Since March 2020, COVID-19 has had a profound impact on the Rwandan economy. In addition to the public health challenge, the pandemic has also severely affected many economies following measures that were and are still being implemented to contain the spread of the virus.

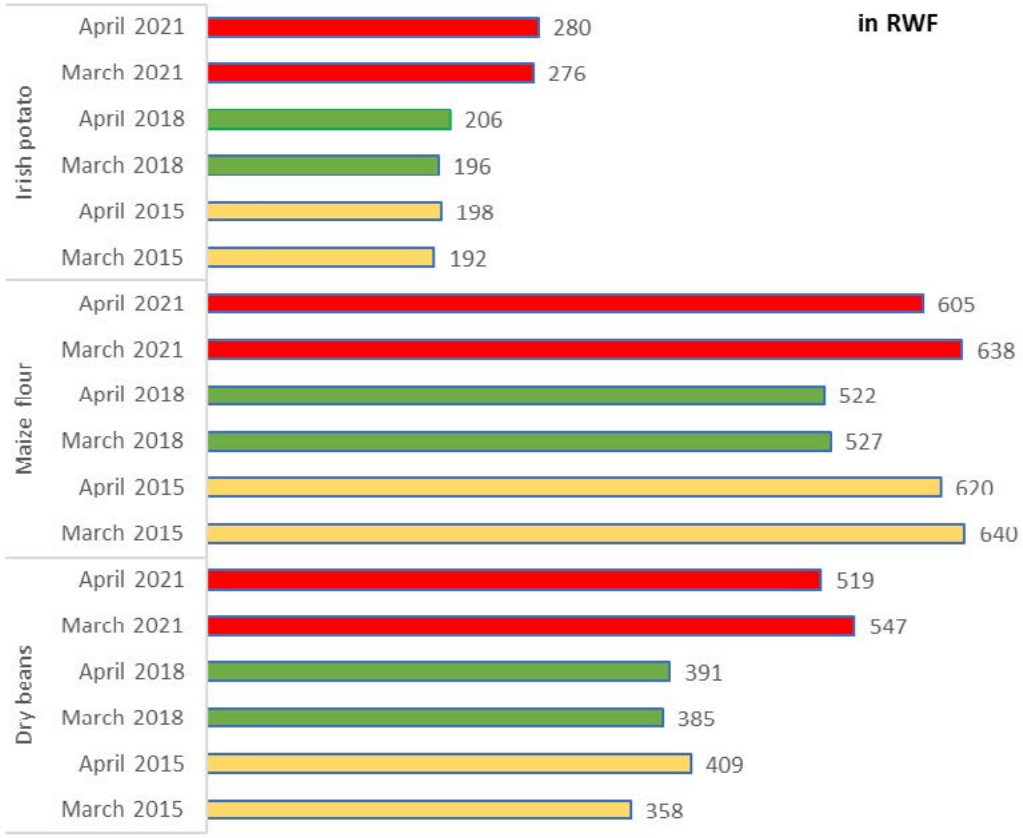
Between April 2020 and April 2021, according to the NISR, the year-on-year inflation rate was estimated at 2.4 percent in April, while food and non-alcoholic beverage inflation was estimated at just 1.2 percent. The price of bread and cereals decreased by 5.4 percent, while prices of vegetables, accounting for the largest share of the food basket, declined by 3.9 percent annually. By contrast, prices of meat increased by 2.9 percent, milk, cheese and eggs by 1.9 percent and fresh products by 2.0 percent over the same period.

In other sectors, transport increased by 4.7 percent and education by 10.8 percent while energy decreased by 6.3 percent when comparing annually.

6.2.4. Food price trends

A close look at key staple prices shows a similar trend, whereby the average price (RWF/kg) in March-April 2021 compared to March-April 2018 was 37 percent higher for dry beans, 19 percent higher for maize flour and 38 percent higher for Irish potato (Figure 35).

Figure 35: Market prices (in RWF) for key commodities in March-April 2015, 2018, 2021



For most crops, price varies following the lean and harvest periods under the laws of supply and demand. Staple prices increase mainly from September to December during the long lean period until the season A harvest. Another smaller peak of price increase appears in April/May for beans, Irish potatoes, and cooking bananas and later, in June, for maize. Cassava flour price is more constant because of storage practices.

6.2.5. Market integration

Market functioning depends on how different markets are integrated. Market integration refers to co-movement in prices between different markets, indicating that the supply is effectively meeting market demand throughout the country. Previous market analysis showed that markets in Rwanda are quite well integrated for main commodities (beans, maize, and Irish potatoes). Nonetheless, some markets in the Western Province are not adequately integrated. For instance, the Ngororero market is well connected to the Gisenyi market but less to Musanze, Kibuye or Kigali market. Mukamira market in Nyabihu district is relatively well integrated with the Northern Province markets (probably again a matter of proximity). The Gisenyi market at the border with the DRC is not well integrated with Kigali. A more in-depth and cross-border analysis would probably show stronger connections with prices in the DRC.

6.3. Households' economic access to food

6.3.1. Income trends

The COVID-19 pandemic and the necessary containment and response measures have had and will continue to have an impact on Rwanda's economy at the macro and micro levels. COVID-19 was reported as the main shock for the last 12 months for 68 percent of households living in urban areas and 24 percent of rural ones and in more than 95 percent, this situation caused a reduction or a loss of income.

Based on the CFSVA 2015, 2018, and 2021 findings, an overall income reduction was observed. Incomes decreased above all in urban areas resulting from loss of wages and economic activity due to COVID-19 containment measures. Income in rural areas remains almost at the same level as in 2018.

Households classified in Ubudehe 3 (40% of sampling) were the most affected by this situation. In terms of livelihoods, all groups faced a loss of income except for salaried workers, low-income agriculturalists and agricultural daily labourers. Low-income agriculturalists earned 80 percent of their income from their land. 2021A season was relatively productive and market food prices have slightly increased, which contributed to a stabilized income for this group. Agricultural daily labourers' wages slightly followed the national inflation of about 2.4 percent. Most of the salaried workers continued their activity and earned a total or partial salary even with COVID-19 measures (Table 9).

Table 9: Income by livelihood group, Ubudehe category and type of geographic area in 2015, 2018 and 2021

	Income		
	2015	2018	2021
RWANDA	**56 647**	**42 011**	**38 535**
Urban	138 327	109 045	98 493
Rural	29 270	27 412	27 291
Ubudehe Categories			
Ubudehe 1		15 525	17 128
Ubudehe 2		26 193	26 826
Ubudehe 3		61 667	53 359
Ubudehe 4		628 082	629 312
Livelihood groups			
Low-income agriculturalists	12 127	17 471	**17 923**
Medium/high income agriculturalists	39 148	60 578	45 699
Agro-pastoralists	43 296	34 342	31 341
Agricultural daily labour	10 492	13 970	**16 034**
Unskilled daily labour	27 462	32 245	26 222
Skilled labour	109 035	85 722	78 984
Trade/petty trade	80 497	73 015	68 767
Salaried work/own business	271 170	198 854	**235 233**
Artisanal work/other	88 112	72 927	54 630

(in blue: increased income; in red: income highly devalued)

6.3.2. Terms of trade and purchasing power

Income has a significant impact on a household's ability to access food. Terms of trade mean that with the average daily salary, one can purchase a certain number of kilograms of beans or maize to feed a household (wage/kg commodity). Although there is a lack of long-term data regarding casual labour wages, this study has found that the unskilled agricultural daily average reaches RWF 870 per person, with the lowest and highest daily wages being RWF 500 and RWF 2,000 respectively.

Based on NISR price in rural areas, the terms of trade in April 2021 were established at 1.9 for dry beans compared to 2.1 in 2018; and remains 1.7 for maize flour. Since 2015, the terms of trade for the two main commodities in rural areas have progressively decreased, indicating a reduction in rural households' food purchasing power, particularly for those living on agricultural wages (Figure 36).

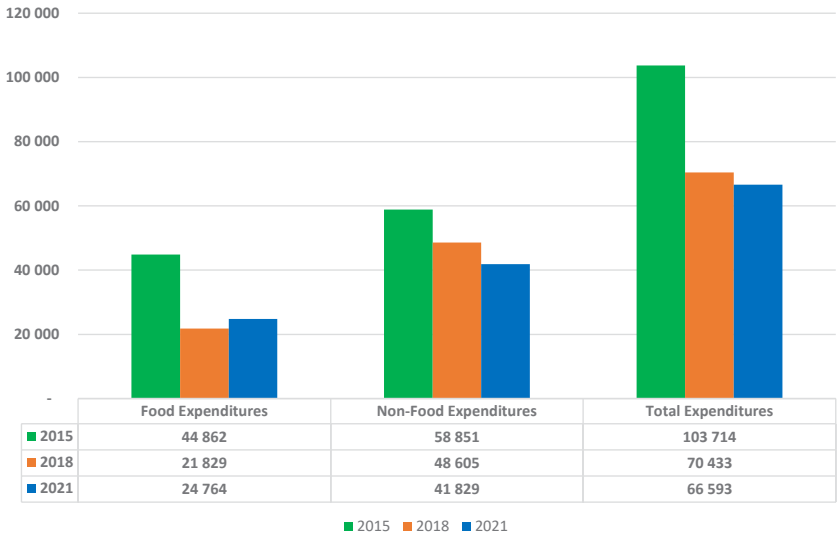
Figure 36: Terms of trade for dry beans and maize flour in 2015, 2018 and 2021

6.3.3. Food and non-food expenditures trends

Since 2015, the survey observed a decline in households' expenditures. Total monthly expenditures decreased from RWF 103,700 in 2015 to RWF 66,500 in 2021 on average for

In April 2021, households spent on average 48 percent of their total budget on food. Referring to the previous CFSVA, food expenditure share decreased from 54 percent to 46 percent between 2015 and 2018 and slightly rose to 48 percent in 2021 (Figure 40).

Figure 37: Total, food and non-food monthly expenditure trends since 2015



	Food Expenditures	Non-Food Expenditures	Total Expenditures
2015	44 862	58 851	103 714
2018	21 829	48 605	70 433
2021	24 764	41 829	66 593

Among food expenditures, households spend more on cereals (41% of food budget) and pulses (18%) (Figure 38). For non-food, expenditures mainly cover soap and hygiene products (16%), education (13%), agriculture-related expenses (10%), debts and mortgage (7%), clothing (7%) and light energy (7%) (Figure 39). In terms of proportion, no significant changes were observed compared to CFSVA 2018.

Figure 38: Composition of food expenditures

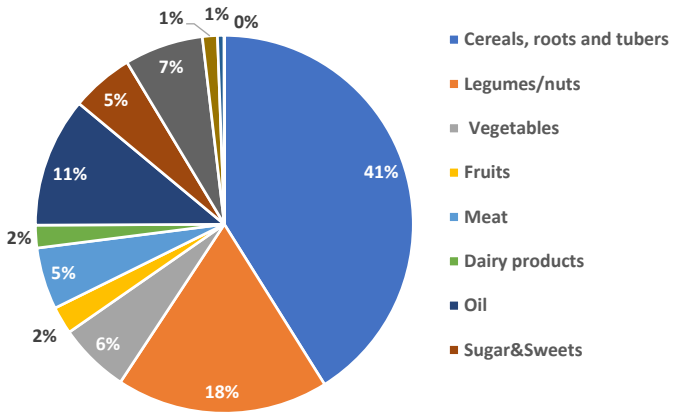
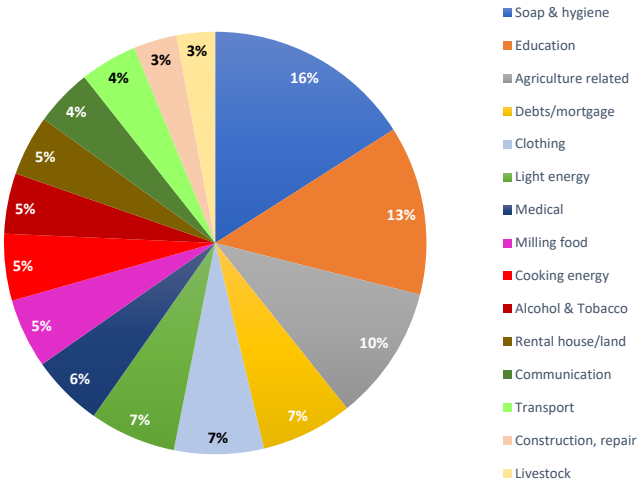


Figure 39: Composition of food expenditures



6.3.4. Food expenditure share

The share of the total household budget spent on food was calculated by dividing the total amount spent on food by the total monthly expenditure on both food and non-food items. The share out of the total household budget spent on food can be used as a measure of economic vulnerability. In general, the poorer the household, the larger the share of the total household budget spent on food.

In April 2021, households spent on average 48 percent of their total budget on food. Referring to previous CFSVA, food expenditure share decreased from 54 percent to 46 percent between 2015 and 2018 and slightly rose to 48 percent in 2021 (Figure 40).

Between 2015 and 2018, food expenses decreased more than non-food expenses. This can be related to the drop in market food prices and therefore an increase of purchasing power for food. As a result, the food expenditure share reduced from 54 percent to 46 percent.

Figure 40: Trends in food and non-food expenditure shares

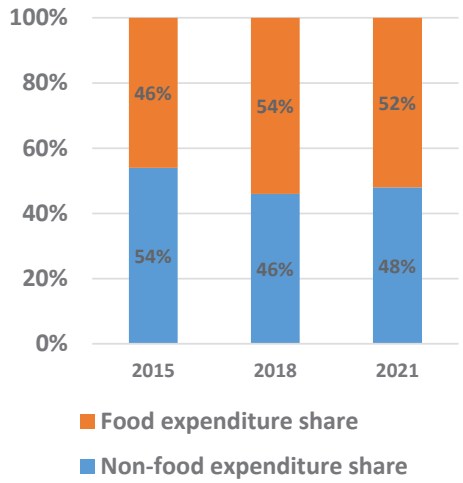
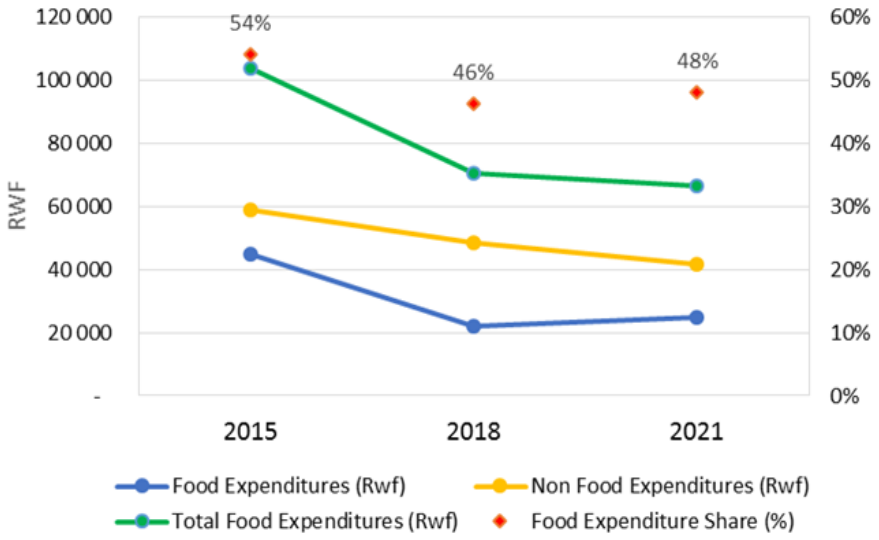


Figure 41: Trends in food and non-food expenditures in between 2015 and 2021



Between 2018 and 2021, total expenditures remained at a constant level. Food expenditures slightly increased while non-food expenditures decreased. As a result, the share of food expenditure rose by about 2 percent (from 46% in 2018 to 48% in 2021).

The increase in food expenses might be attributed to the upturn in market food prices between 2018 and 2021. As mentioned earlier, the purchasing power between 2018 and 2021 has decreased. This means that households spent the same amount of money for less food. Some might even have reduced the quantities purchased (Figure 41).

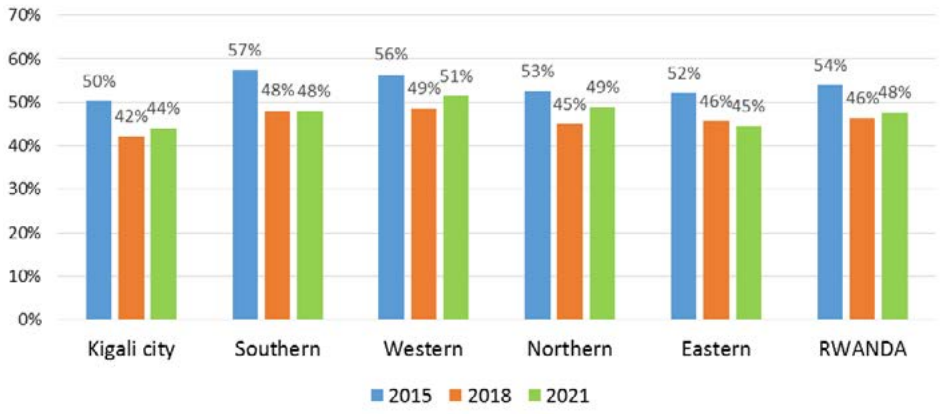
COVID-19 restriction measures and the general slowdown of the economy could have had an impact on some non-food expenditures, reducing the expenses for transport, education, health, and construction.

The poorest households are more likely to be vulnerable to any shocks as they spend most of their budget on basic requirements and have little left to cope with a shock. In terms of livelihoods, agricultural daily labourers and unskilled daily labourers are the most vulnerable to access food as well as female-headed households compared to male heads (Table 10). The highest share of food expenditures was observed in the Western and Northern Provinces and mainly in Rutsiro, Rubavu (with 56% of the budget spend on food on average at district level), Ngororero (55%), Huye and Karongi (54%) and Burera (53%) (Figure 42).

Table 10: Food expenditure share by level of wealth, Ubudehe, livelihood, and gender of household's head

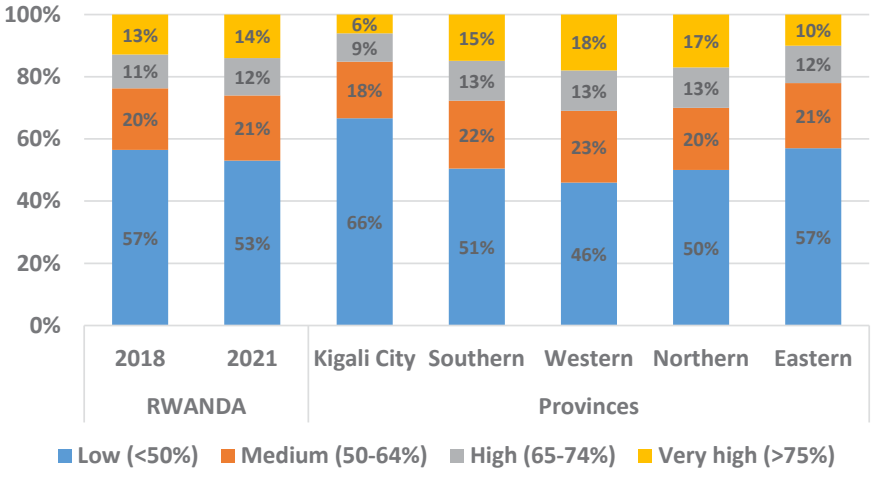
Share of food expenditures (mean)		
Wealth index categories		**Livelihood groups**
Poorest	56%	Agriculture daily labour
Poor	53%	Unskilled daily labour
Medium	49%	Low-income agriculturalists
Wealthy	44%	Skilled labour
Wealthiest	38%	Artisanal work/other
Ubudehe categories		Trade/Petty trade
Category 1	56%	Agro-pastoralists
Category 2	48%	Salaried work/own business
Category 3	43%	Medium/high income agriculturlists
Gender of household head		
Female headed HH	51%	RWANDA
Male headed	46%	

Figure 42: Trends in food expenditure share by province



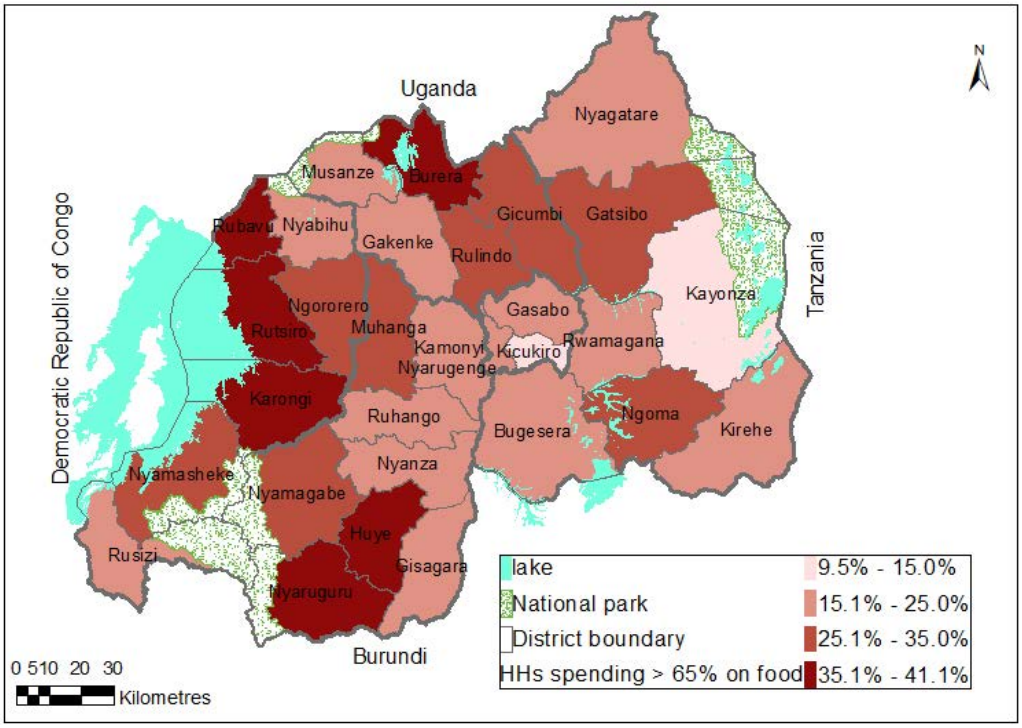
Households were classified into four different groups based on the share of their total budget that they spent on food: low (<50%), medium (50%-65%), high (65%-75%) or very high expenditure (>75%). On average, 14 percent of all households have a very high share of expenditure on food (Figure 43). The classification of households into the food expenditure share categories is one of the three indicators used to categorise a household's food security status through the CARI approach.

Figure 43: Percentage of households spending shares of budget on food in 2018, 2021 and by provinces



The districts of Rutsiro (41%), Rubavu (39%), Burera (39%), Karongi (37%), Huye (37%) and Nyaruguru (35%) have high food expenditure share as shown on Map 2. This is a significant economic vulnerability to food access. Food insecurity is exacerbated by a higher share of food expenditure.

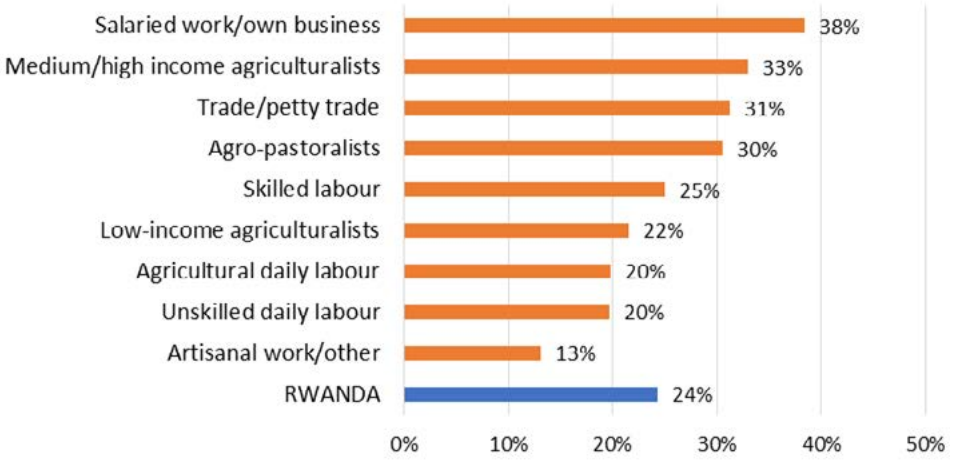
Map 2: Percentage of households which spend more than 64% of budget on food



6.3.5. Access to credit

24 percent of households requested a loan in the last 12 months and the majority (98%) received it. Wealthy households are more likely to have access to credit. In terms of livelihood groups, the salaried workers or owners of business, medium- high income agriculturalists or agro-pastoralists, and some petty traders requested more credit than the other economic groups as per Figure 44 below.

Figure 44: Percentage of households that requested a loan during the last 12 months



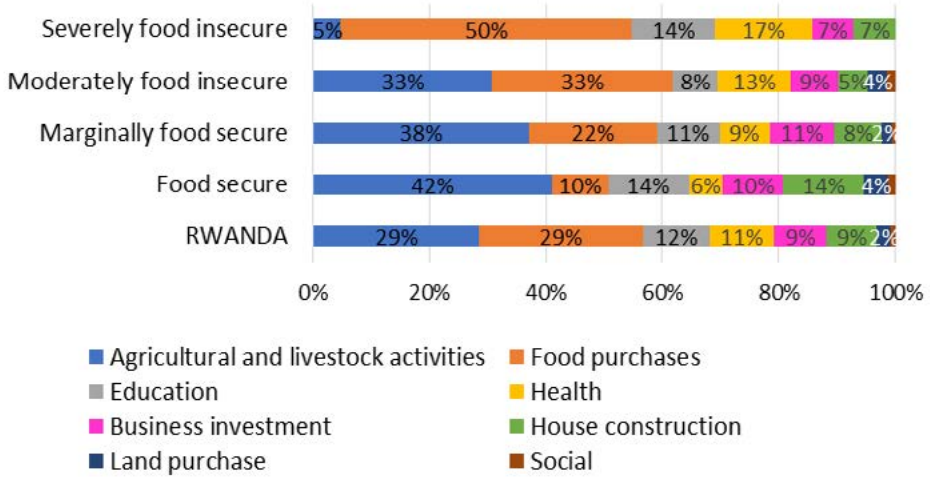
Rwandans prefer to use informal credit sources to borrow money, such as the tontine/cooperative system (54%), followed by banks (15%) or micro-finance institutions (14%). The proportion of households that rely on informal sources of credit increases with poverty status. A lower proportion of food insecure households (15%) asked for a loan compared to food secure households (27%).

Nationally, many households used credit for food purchase (29%) and agricultural or livestock activities (29%) followed by education (12%) and health (11%). Compared to the CFSVA 2018 findings, the proportion of households asking for credit for food purchases increased. While it is the main reason food insecure households requested a loan, 22 percent of marginally food secure and 10 percent of fully food secure also requested it. This confirms the pressure that households are facing to access food (Figure 45).

Food secure households mainly requested a loan for agricultural and livestock activities and 56 percent of this type of loan was dedicated to buying inputs (such as seeds, chemical, vet products), 33 percent to prepare land and 10 percent for post-harvest activities.

In some districts, a large portion households requested a loan for food purchase like in Karongi (16% of total households), Muhanga (13%), Nyamagabe (12%), and Rutsiro (9%). In Ngororero district, few households (4%) requested for a loan for food purchase or for agricultural activities (5%).

Figure 45: Reasons for requesting a loan by food security status



07. FOOD CONSUMPTION

KEY MESSAGES

- In April 2021, 73 percent of households had adequate food consumption, 24 percent borderline and 3 percent poor food consumption.
- Compared to 2018, food consumption improved in 12 districts.
- In 2021, 11 districts had more than 80 percent of households with adequate food consumption.
- Adequate food consumption improves with household's wealth status and education of household's head.
- Poor food consumption is mostly found in Ngororero, Rutsiro, Burera, Karongi and Nyamasheke.
- In 2021, 60 percent of households consumed protein-rich food.
- Household's dietary diversity score (HDDS) remains stable with some progress in the Northern Province.
- Households with low dietary diversity are in Ngororero, Karongi, Burera, Nyaruguru, Gatsibo, Nyamagabe and Rutsiro.

7.1. Food Consumption Score

The food consumption score (FCS) is one of the three indicators used to compute food security status at the household level. The FCS is calculated from the types of foods and the frequency with which they are consumed during seven days before the survey. Based on their score, households are then classified into three consumption categories: poor (FCS≤21), borderline (21<FCS≤35) and acceptable consumption (FCS≥35). Those with poor and borderline food consumption are grouped and classified as having inadequate food consumption.

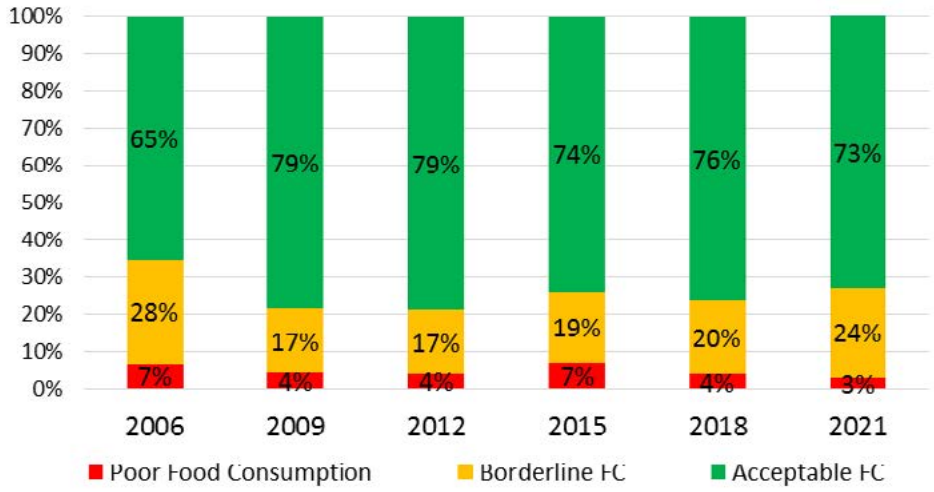
Table 11: Description of food consumption groups

Food consumption group	Description of food consumption groups in 2015 CFSVA	FCS cut-off point
Poor	Households with poor food consumption have a diet limited to starches and vegetables, which are consumed on average five and three times a week respectively. In addition, pulses and oil are consumed once a week.	≤ 21
Borderline	Households with borderline food consumption consume starches and vegetables almost daily. In addition, they consume pulses and oil three times a week. Sugar is consumed once a week, while items such as meat and milk are rarely consumed.	21.5 -35
Acceptable	Those with acceptable food consumption consume starches, pulses, vegetables and oil almost daily with the addition of sugar, milk, fruits and meat a few times a week.	> 35

7.1.1. Food consumption trends

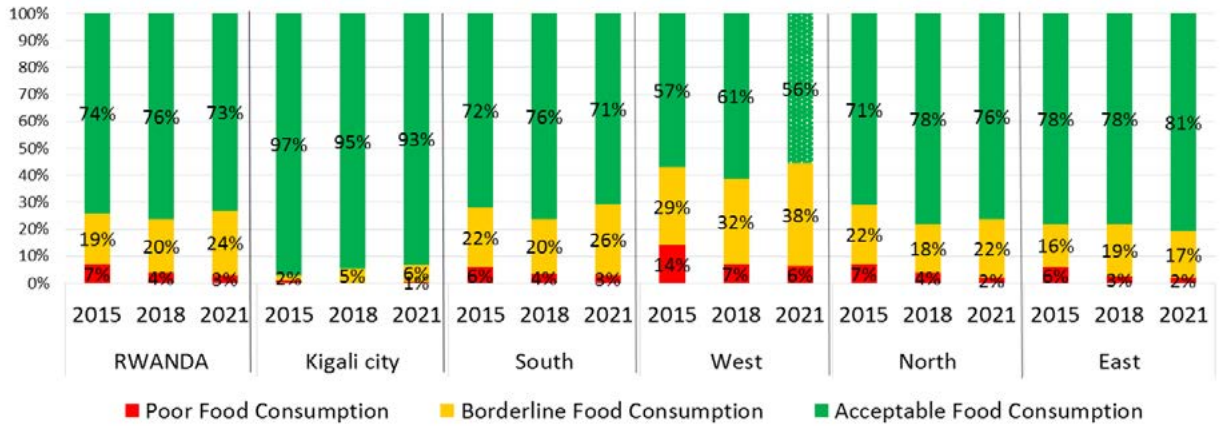
In April 2021, 73.3 percent of households had adequate food consumption, 23.7 percent consumed a borderline diet and 3.0 percent had a poor diet. Since 2015, food consumption patterns have not significantly changed. Nonetheless, the proportion of households with poor food consumption prevalence decreased from 7 percent in 2015, 4 percent in 2018 to 3 percent in 2021 (Figure 46).

Figure 46: National trends of food consumption groups (2006-2021) (CI: 95%)



At the province level, there is a reduction in poor food consumption in all provinces except Kigali City. The situation improved in the Eastern Province with more than 3 percent of households with adequate food consumption. Nevertheless, around 5 percent of households moved from 'adequate' to 'borderline' food consumption in the Southern and Western Provinces. In the Western Province, only a little more than half of the households consume frequent and adequate diets (Figure 47).

Figure 47: Trends of food consumption groups in 2015, 2018, 2021 by province



7.1.2. Geographical disparities in food consumption

In 2021, 11 districts have more than 80 percent of households with adequate food consumption. The 3 districts of Kigali City, Gicumbi and Rwamagana show more than 90 percent of households. Five districts - Ngororero, Rutsiro, Burera, Karongi and Nyamasheke - are still struggling with less than 60 percent of households, with adequate food consumption (Map 3). Indeed, these districts represent more than five percent of households with poor food consumption as well as Nyanza, Nyamagabe and Rubavu districts (Figure 48).

Map 3: Percentage of households with an inadequate food consumption in 2021

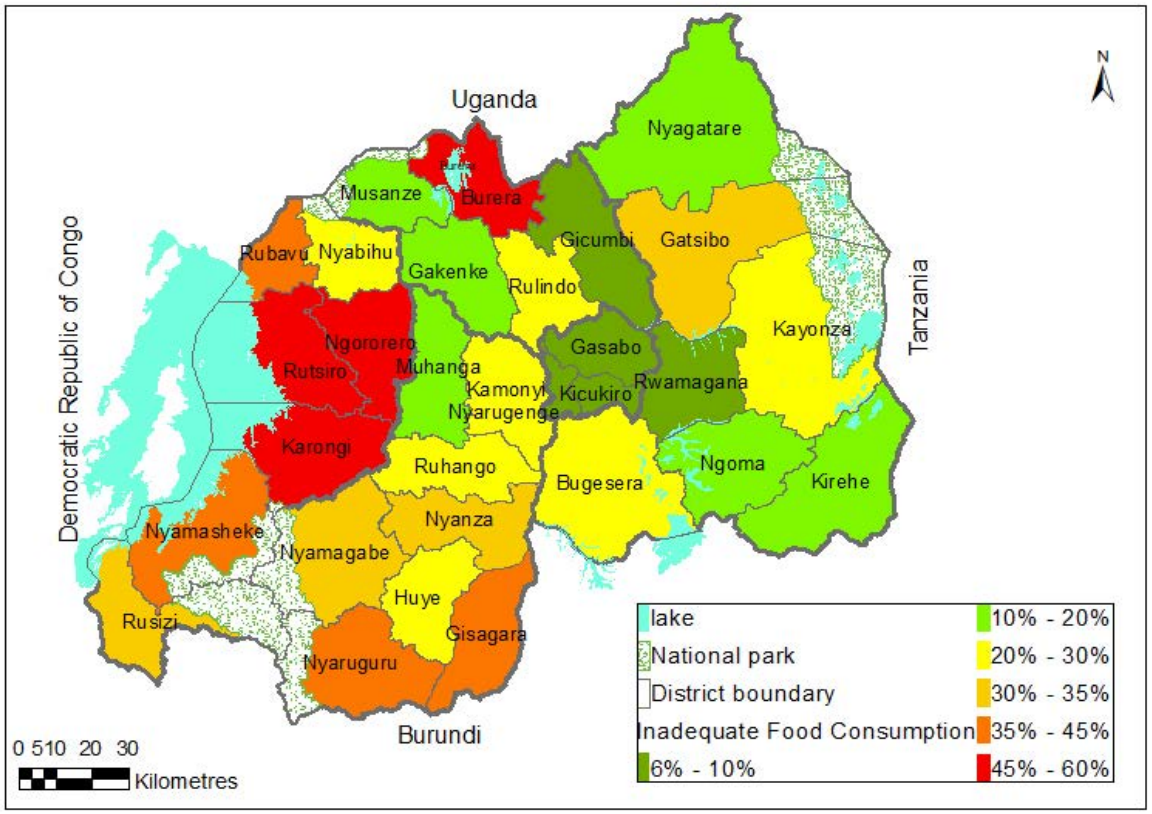
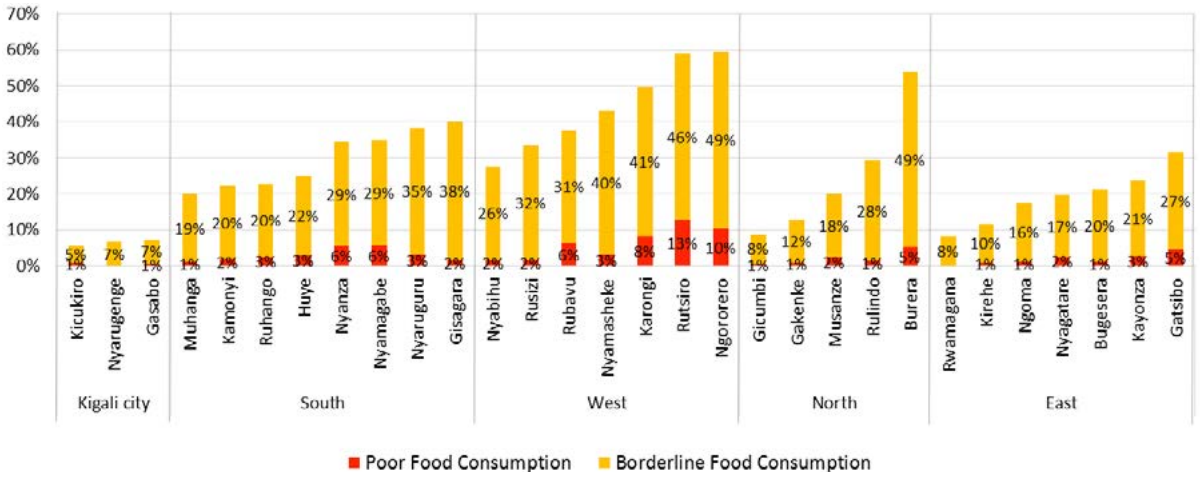


Figure 48: Percentage of households with an inadequate food consumption in 2021 by district

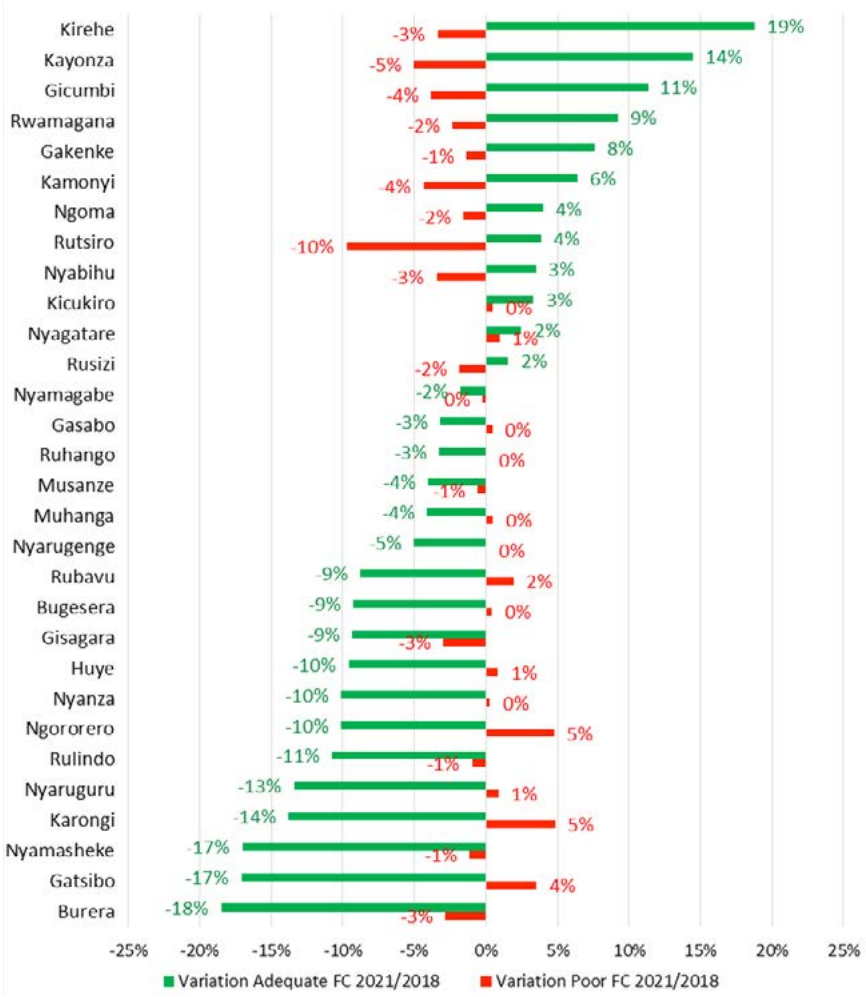


7.1.3. Evolution of food consumption at district level

Compared to 2018, food consumption improved in 12 districts. Kirehe, Kayonza, Gicumbi and Rwamagana districts showed the best enhancement with 19 percent, 14 percent, 11 percent, and 9 percent of additional households with adequate food consumption respectively. Improvements were also observed in Rutsiro, Kayonza, Kamonyi and Gicumbi with a subsequent decrease of poor food consumption (Figure 49).

Although Rutsiro district remains with a high level of inadequate food consumption, 10 percent of households improved their consumption from poor to borderline (23% in 2018 to 13% in 2021) and 4 percent from borderline to acceptable (37% in 2018 to 41% in 2021).

Figure 49: Variation of adequate and poor food consumption between 2018 and 2021



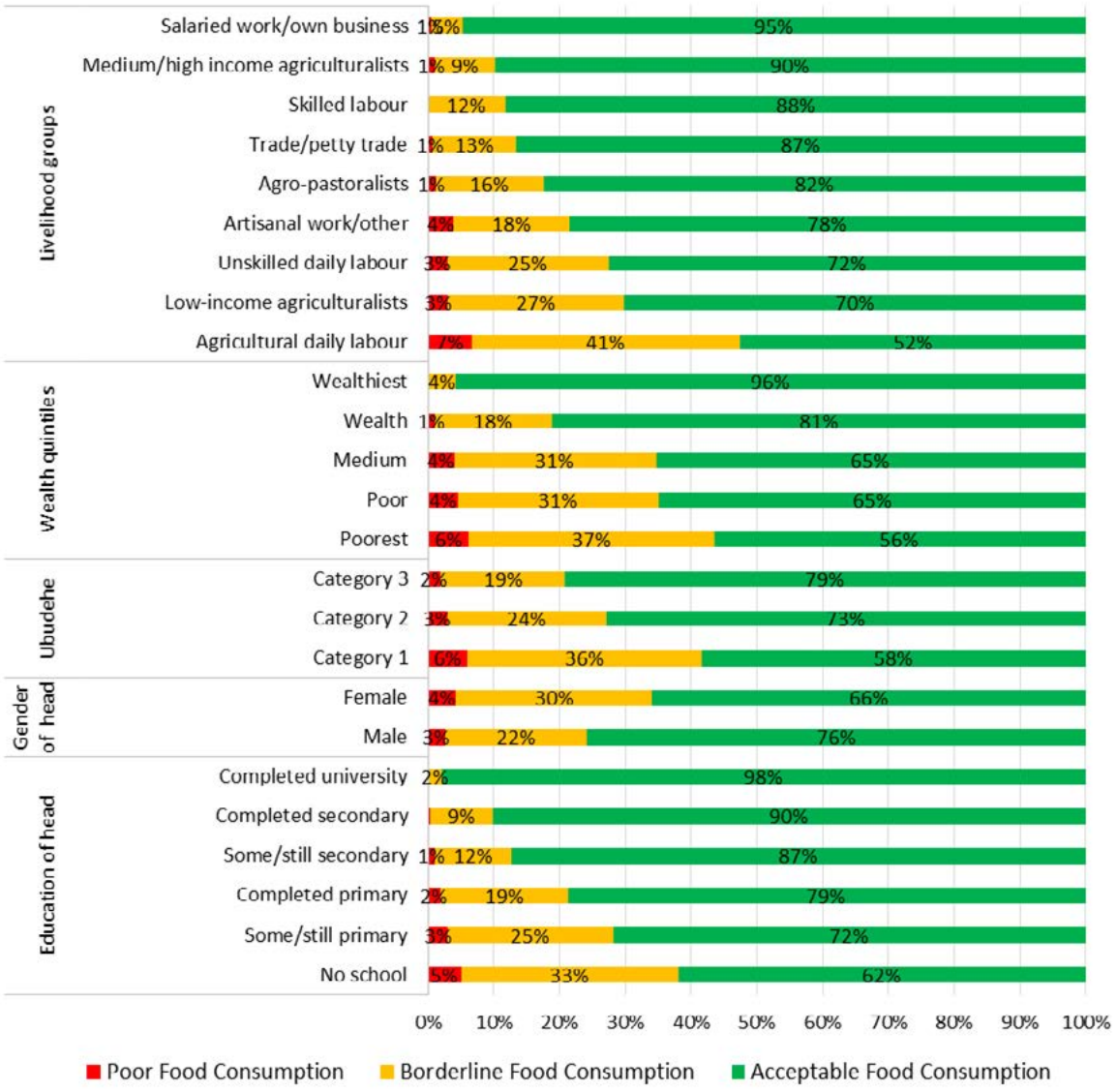
7.1.4. Food consumption by households' characteristics

There are significant differences ($p<0.05$) in food consumption depending on the characteristics of the household (Figure 50). Adequate food consumption enhances a household's wealth status, from 56 percent of households in the poorest quintiles to 96 percent in the wealthiest. This is also correlated to Ubudehe categories (58% for Ubudehe 1 to 76% in Ubudehe 3).

According to the livelihood groups, better food consumption is observed in households with salaried workers/own a business (95%), high or medium-income agriculturalists (90%) or skilled labourers (88%) than low-income agriculturalists (70%) or households living from daily labour (52%).

A higher prevalence of adequate food consumption is found among non-single households, or among male-headed households (76% against 66% for female), or households headed by a person with a higher education (98% for university graduates against 62% for those with no education).

Figure 50: Food consumption by household's characteristics



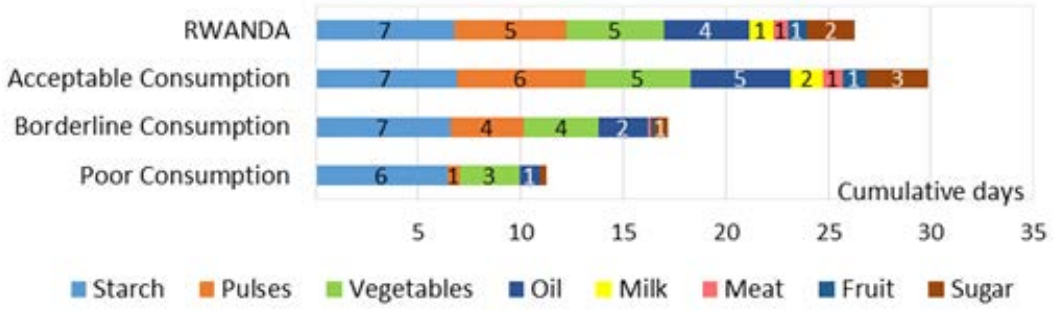
7.2. Dietary diversity

7.2.1. Composition of the diet

The food consumption score is based on the frequency (number of days) of food groups and their nutritional value. The pattern of acceptable, borderline, and poor food consumption is represented in Figure 51. The Rwandan diet is based on staples, vegetables, pulses (beans) and oil.

All households have at least one daily consumption of starch and around five days per week for vegetables. Pulses and fat consumption vary from one day a week for poor consumption to five and six days a week for acceptable one. The consumption of animal products (meat and milk) is very rare and appears to reach a frequency level at least 3 days/week when the total dietary pattern is very rich, with a daily consumption of staples, pulses, vegetables and fat. FCS increases steadily when households consume more pulses (vegetable proteins) and animal products (animal proteins).

Figure 51: Number of days in a week different food groups are consumed, by household food consumption group

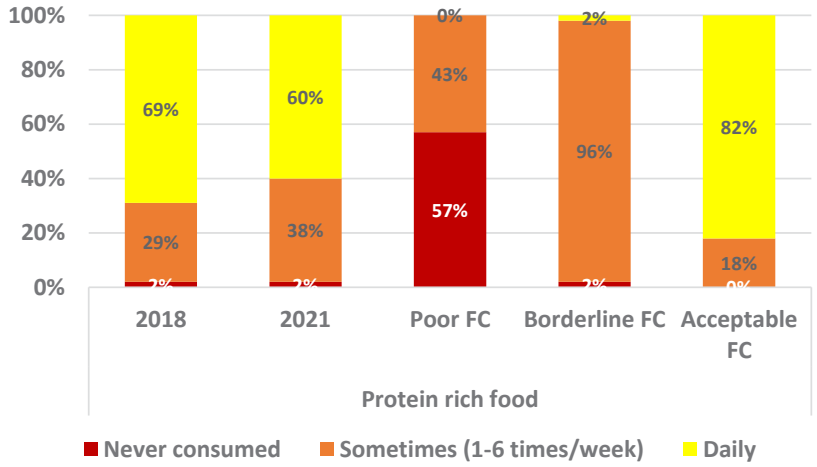


7.2.3. Nutritional value of food items consumed (FCS-N)

The FCS-N uses data derived from the FCS module to provide information on three specific nutrients: heme iron, plant-based vitamin A, and proteins. In the analysis, a distinction was made between households where the nutrients were never consumed (0 times/week), sometimes consumed (1-6 times/week), or consumed at least once daily.

In 2021, 60 percent of households consumed protein-rich food which is a decrease compared to 2018 (69%). 82 percent of households with adequate food consumption and only 2 percent for borderline food consumption eat protein-rich food every day. More than half of the poor food groups reported having not consumed protein-rich food in the past seven days (Figure 52).

Figure 52: Percentage of households consuming Protein-rich food groups by food consumption groups



The pattern for vitamin-A food items has not significantly changed since 2018. Half of the households (52%) consume vitamin-A food items daily and almost half (42%) consume at least once a week. But 11 percent and 18 percent of borderline and poor food consumption groups did not consume vitamin-A food during the last seven days (Figure 53).

The consumption of heme iron-rich food items, such as meat, organ meat, and fish/seafood remain a nutritional issue in Rwanda. These food items are occasionally consumed by a quarter (27%) of households with acceptable food consumption. Iron deficiency can lead to anaemia and reduce productivity and quality of life (Figure 54).

There are geographical patterns in the way food items are consumed in the country. Protein intake is relatively high in Kigali City. In addition milk, meat and eggs are most consumed in the East of the country, which is also famous for its livestock production. Fish is most consumed along Lake Kivu. Maize and cooking bananas are mostly consumed in the East, cassava in the South, sweet potatoes in the North and along the Congo Nile Crest. Pulses are widely consumed everywhere, but relatively less along Lake Kivu.

Figure 53: Percentage of households consuming vitamin A-rich food groups by food consumption groups

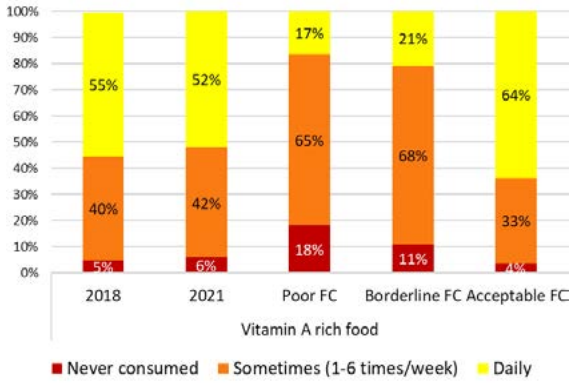
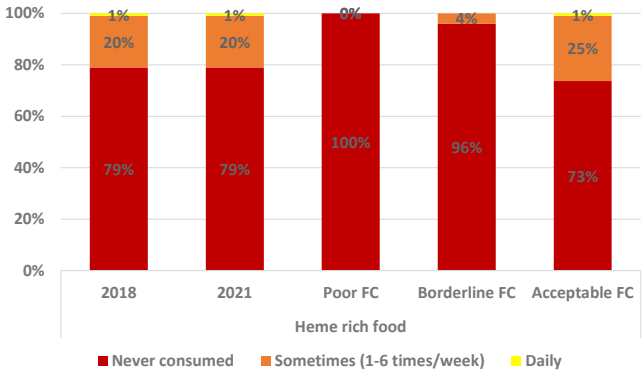


Figure 54: Percentage of households consuming heme Iron-rich food groups by food consumption groups

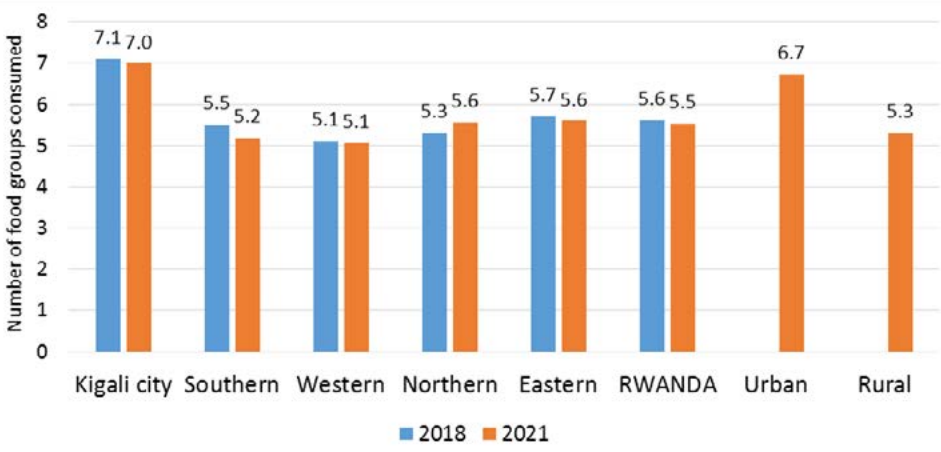


7.2.4. Household dietary diversity

The household dietary diversity score (HDDS) reflects, in a snapshot, the economic ability of a household to access a variety of foods, rather than the nutritional value of food items consumed. The score is calculated based on 12 food groups consumed in each household the day before the survey. Dietary diversity scores and percent of households consuming each food group can be used to assess changes in diet before and after an intervention or for ongoing monitoring.

Households have on average a diet consisting of items from five to six food groups. Households in the Southern and Northern Provinces consumed items from five food groups, while households in Kigali City consumed items from seven food groups. Compared to the 2018 CFSVA, the HDDS remains stable with some progress made in the Northern Province (Figure 55). In general, households living in urban areas have a better dietary diversity (6.7%) than in rural areas (5.3%).

Figure 55: Average dietary diversity score by province



While there are no established cut-off points in terms of the number of food groups to indicate adequate or inadequate dietary diversity for the HDDS, it has been observed from previous CFSVAs that food-insecure households generally consume less than five food groups (mainly tubers and roots, vegetables, pulses, and condiments). From this perspective, the districts with a higher percentage of households with a low diet diversity are Ngororero (29%), Karongi (28%), Burera (26%), Nyaruguru (25%), Gatsibo (25%), Nyamagabe (24%) and Rutsiro (23%). This reflects a higher economic vulnerability of these districts to access food.

08. SHOCKS AND HOUSEHOLDS' VULNERABILITY TO FOOD SECURITY

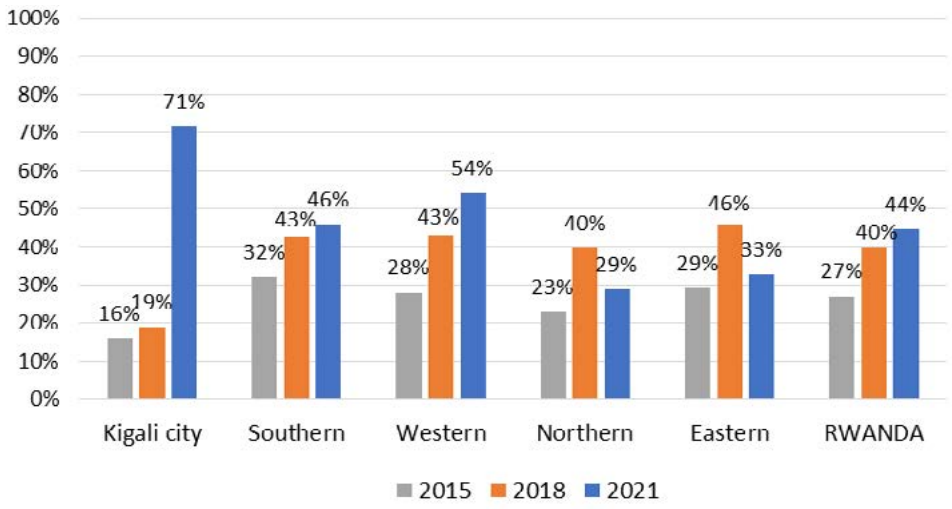
KEY MESSAGES

- 44 percent of households reported having experienced a shock or unusual situation during the last 12 months that affected their ability to provide food for household members or eat in their usual manner.
- The COVID-19 pandemic was reported as the main shock, mainly affecting Kigali City (76% of households) and urban areas. It caused revenue losses and decrease of assets and triggers economic access to food mainly for skilled labourers, traders and daily labourers. Agriculturalists were less affected.
- Irregular rains/ drought impacted the Eastern (33% of households) and the Southern Provinces (26%).
- Landslides impacted the Northern (28%) and Western Provinces (18%).
- 33 percent of households faced seasonal food access issues (agriculturalists), 27% acute food access issues (un/skilled labourers, traders and salaried workers) and 5% chronic access issues.

8.1. Shocks affecting household assets and food security

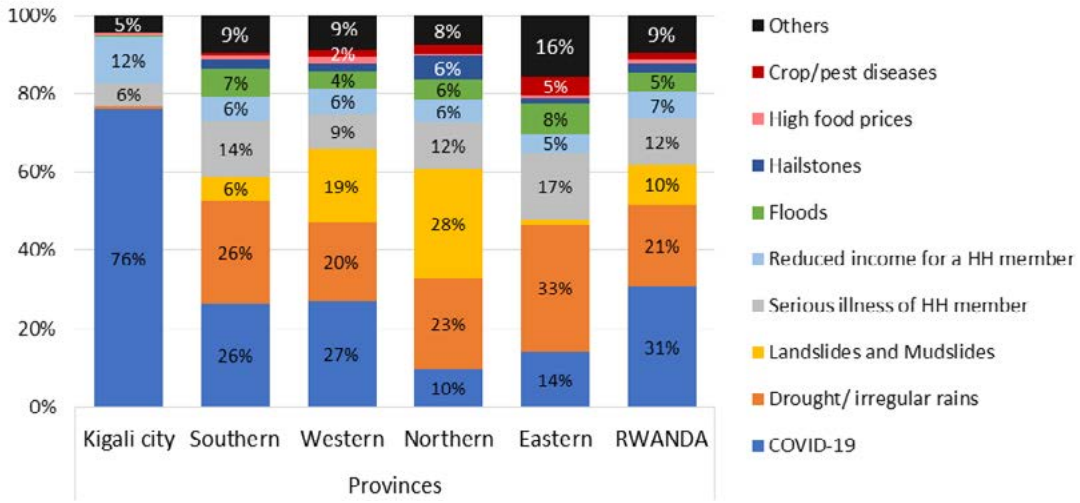
In 2021, 44 percent of households reported having experienced a shock or unusual situation during the last 12 months that affected the household's ability to provide for itself, ability to eat in the manner it is accustomed to or, affected the household's assets. The Province of Kigali City was, by far, the most affected by a shock (71% of households) followed by the Western (54%) and Southern Provinces (46%) (Figure 56).

Figure 56: Percentage of households who experienced a shock during the last 12 months



Nationally, the COVID-19 pandemic has been reported as the main shock. However, it mainly affected households living in Kigali City and in urban areas. Households living outside Kigali City have been more affected by natural disasters and hazards. Irregular rains or drought-impacted households in the Eastern and the Southern Provinces (respectively 33% and 26% of households reported as their main shock) while landslides impacted households in the Northern and Western Provinces (28% and 18% reported as their main shock). The illness of household members related to the decrease of income or more expenses is also reported a main shock by 12 percent of households, and mainly in the Eastern and Southern Provinces (Figure 57).

Figure 57: Main shocks reported by households by Province



8.2. The COVID-19 Outbreak

"We are facing a global health crisis unlike any in the 75-year history of the United Nations — one that is killing people, spreading human suffering, and unpending people's lives. But this is much more than a health crisis. It is a human crisis. The coronavirus disease (COVID-19) is attacking societies at their core." United Nations Secretary-General, António Guterres.

This 2021 CFSVA also aims to assess the impact of the COVID-19 pandemic on Rwandan households' global food security. In this objective, some additional questions were addressed to households, but they are not standard to a regular CFSVA.

The COVID-19 outbreak was reported as the main shock for the last 12 months for many households living in urban areas (68%) compared to rural ones (23%). In particular, the households in the districts of Gasabo, Nyarugenge, Kicukiro in Kigali city, Ruhango and the district of Rubavu at DRC border reported being mainly affected by the COVID-19 outbreak (Figure 58).

Figure 58: Percentage of households which reported COVID-19 as their main shock by district

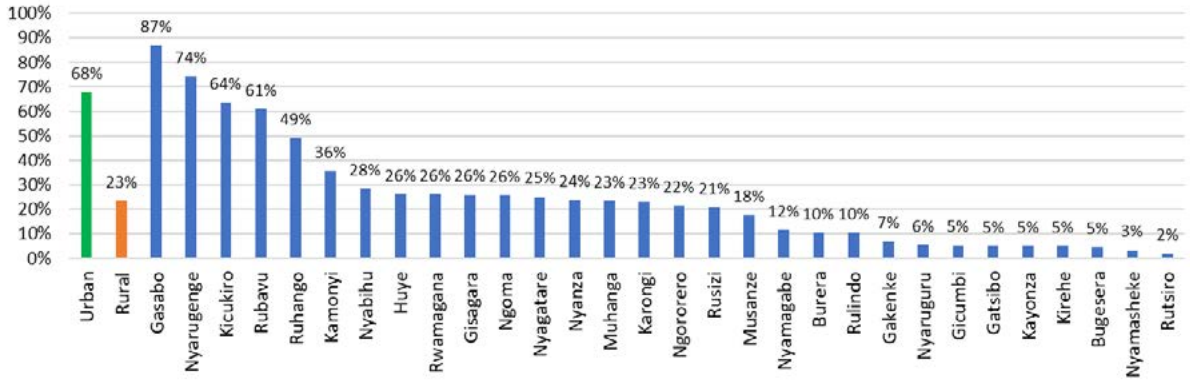


Figure 59: Percentage of households affected by COVID-19 outbreak over time

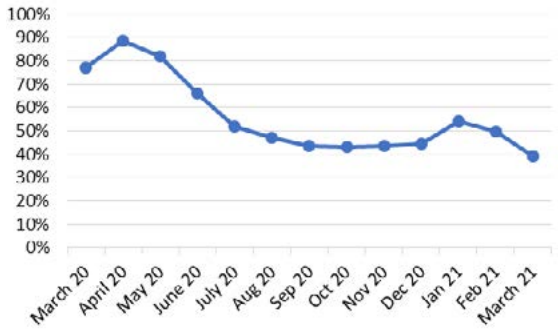
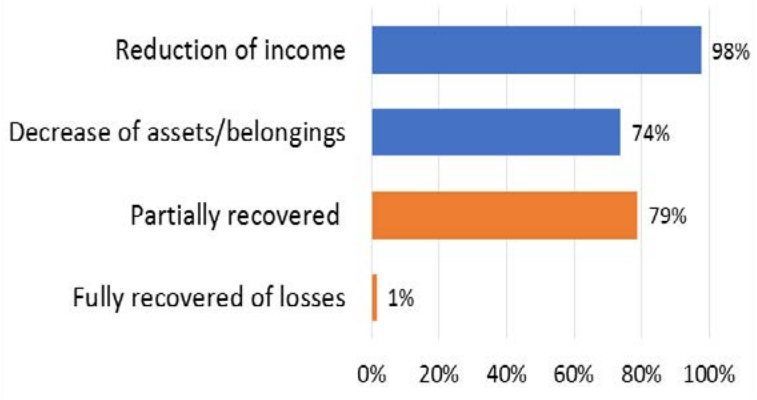


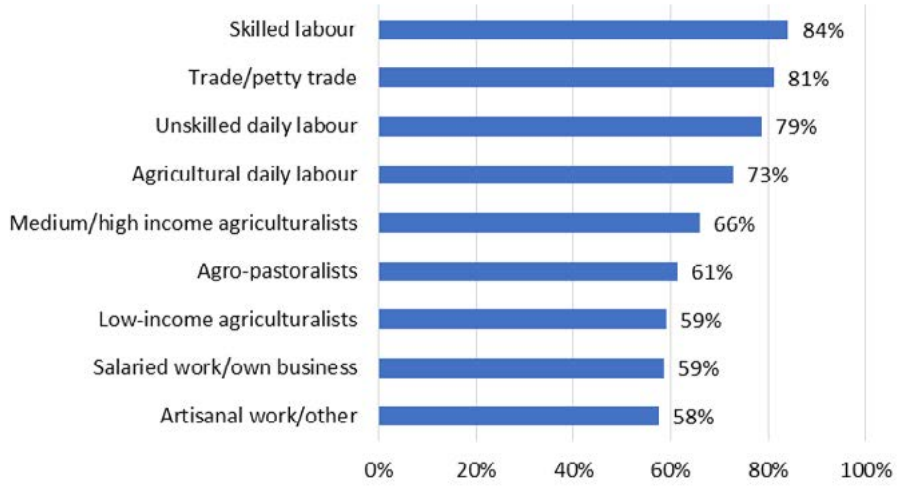
Figure 60: Impact of COVID-19 outbreak on households and level of recovery



The COVID-19 pandemic and the necessary containment and response measures had an impact all year round but mainly in April 2020 with the beginning of restriction measures and lockdown (Figure 59). The economic effect had severe adverse implications for households, as many faced revenue losses (98%) and a decrease of assets (74 %) (Figures 60).

The impacts of the COVID-19 response measures were unlikely to be evenly distributed across sectors of employment, poverty status, and household characteristics. The economic impact of COVID-19 has strongly affected all livelihood groups but particularly skilled labourers, traders, and daily labourers. Agriculturalists and salaried workers were proportionally less affected by income reduction (Figure 61).

Figure 61: Percentage of households reporting an income reduction due to COVID-19 by livelihood groups



Geographic disparities in income reduction were also observed. Districts with larger urban economic activities were most affected (including Nyarugenge, Rubavu, Kicukiro, Musanze) (Table 12).

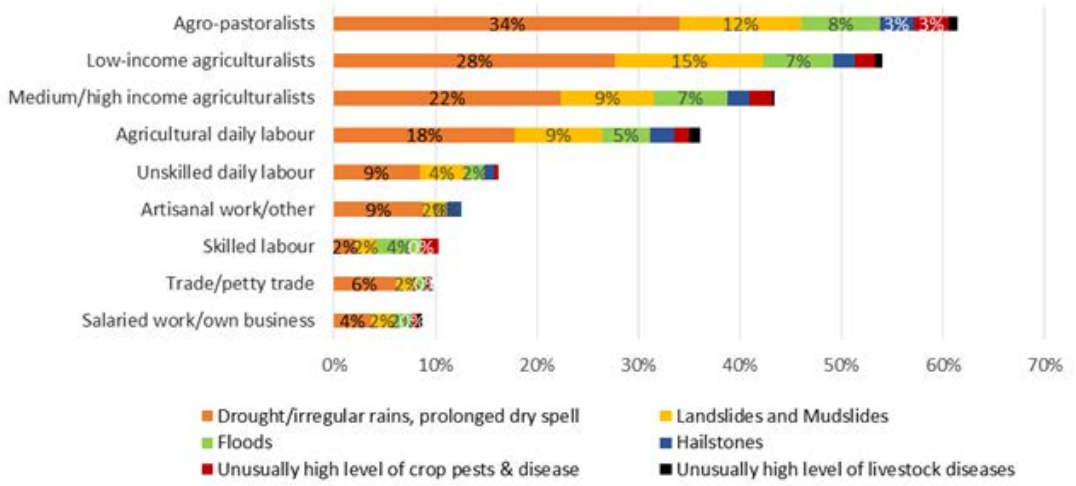
Table 12: Percentage of households reporting an income reduction due to COVID-19 by districts

Karongi	86%	Ngororero	73%	Nyamagabe	56%
Nyarugenge	85%	Nyanza	73%	Bugesera	56%
Rubavu	83%	Gasabo	72%	Burera	55%
Nyamasheke	81%	Gisagara	67%	Kayonza	52%
Nyabihu	79%	Ruhango	65%	Gakenke	52%
Musanze	79%	Rulindo	64%	Gatsibo	49%
Kicukiro	77%	Ngoma	62%	Rwamagana	48%
Rutsiro	77%	Nyagatare	62%	Gicumbi	47%
Kirehe	76%	Kamonyi	60%	Nyaruguru	47%
Rusizi	74%	Huye	56%	Muhanga	46%

8.3. Hazards and natural disasters

Outside of Kigali City, households were mainly affected by natural disasters and hazards like irregular rainfalls, drought or landslides and floods. Households more affected by natural disasters were agriculturalists and agro-pastoralists mainly affected by irregular rains or drought followed by landslides and floods (Figure 62).

Figure 62: Percentage of households affected by natural disasters and hazards by livelihood groups



8.3.1. Irregular rainfalls and drought

Low rainfall is mainly an issue in the eastern part of the country. But irregular rains or drought were reported as the main shock for the last 12 months by 25 percent of households (Figure 63). The districts where households reported being particularly affected by irregular rains are Kirehe (53%), Kamonyi (45%), Huye (39%) (Figure 64).

Figure 63: Percentage of households reporting main natural hazards outside Kigali City

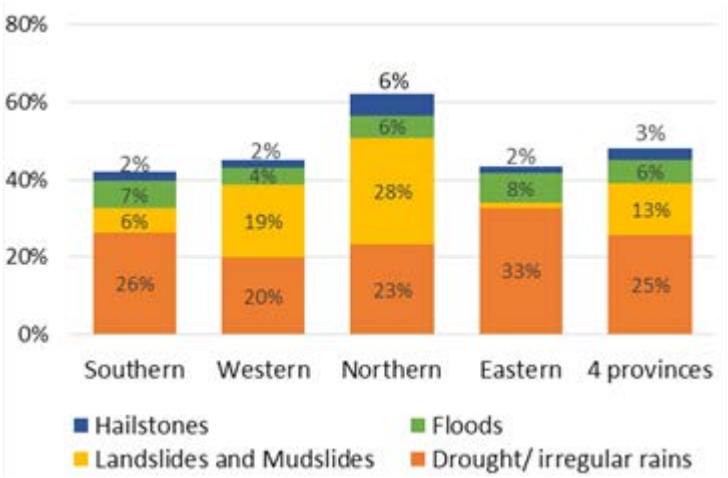
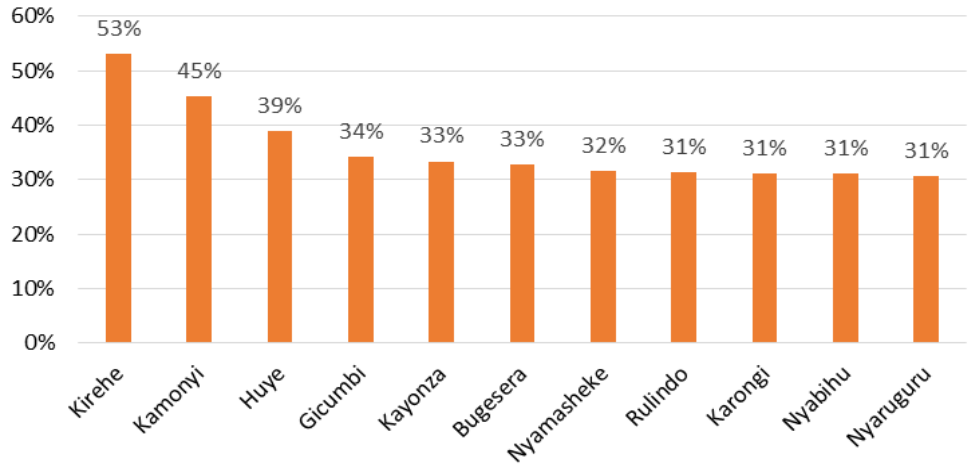


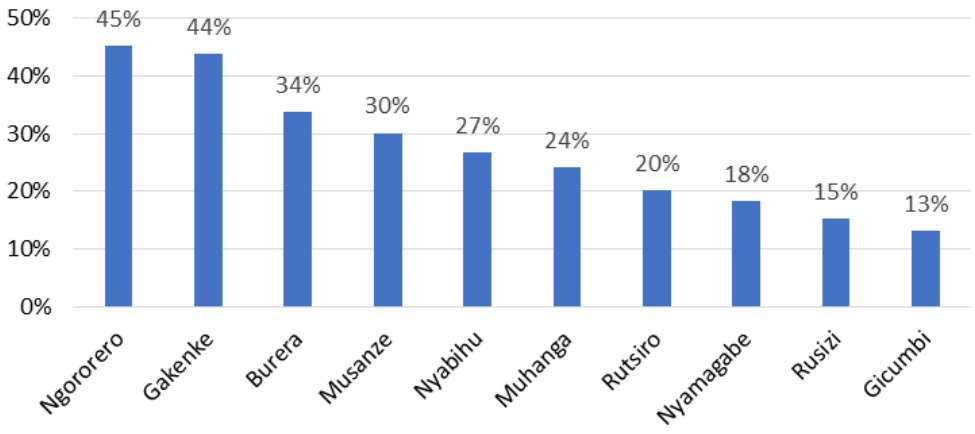
Figure 64: Percentage of households reporting irregular rains or drought as their main shock by district



8.3.2. Landslides

Almost one household out of two in the districts of Ngororero and Gakenke reported landslide as their main shock (Figure 65).

Figure 65: Percentage of households reporting landslides as their main shock



According to the Ministry of Environment, the land area at risk of erosion in Ngororero is estimated to be 41,450 hectares; about 61% of the total district land. Kavumu sector is particularly affected by landslides and Muhanda, Ndaro and Gatumba sectors by gullies. Erosion risk in Gakenke District is estimated to be 49 percent of the total district land; about 34,703 hectares are highly susceptible to erosion. Kivuruga sector is the worst affected by landslides and the Kamubuga sector by severe gullies.

In these regions, households own very small plots of farmland, sometimes less than 0.1 hectares. Landslide associated with erosion can partially or fully affect the quality of the soil and therefore strongly impacts household food production negatively.

8.3.3. Other natural hazards

Among other natural disasters, floods affected households' assets in Rusizi (13%), Ngoma (13%), Musanze (12%), Gicumbi (12%) and Gatsibo (11%). Hailstones caused severe damage in Nyaruguru (11%), Gakenke (9%), Gibumbi (9%).

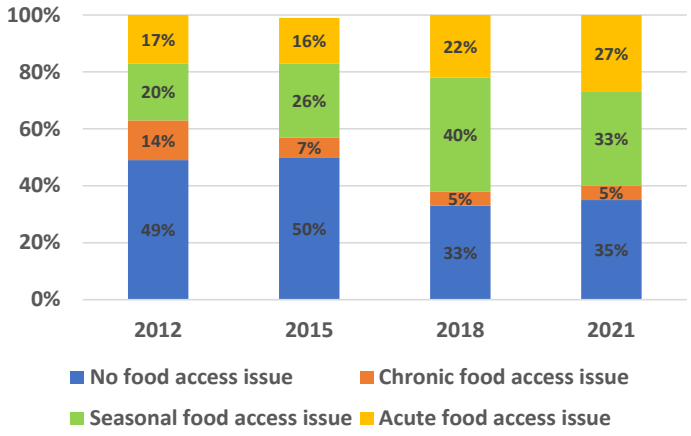
8.4. Food access issues

In addition to shocks, households were also asked if there were any specific months in the last 12 months when they lacked food or money to buy food. In total, 65 percent of households had experienced food access issues during the past 12 months. Globally, fewer households reported food access issues compared to 2018 except for Kigali City and the Northern Province.

To analyze and compare the situation over time, food access issues were classified as chronic, seasonal, or acute. Food access issues lasting for at least six months of the year and described as 'usual' were considered chronic. If food access issues were experienced for less than six months a year and reported to be usual, they were considered recurrent short-term issues or seasonal food access issues. Unusual food access issues lasting for less than six months a year were considered as acute.

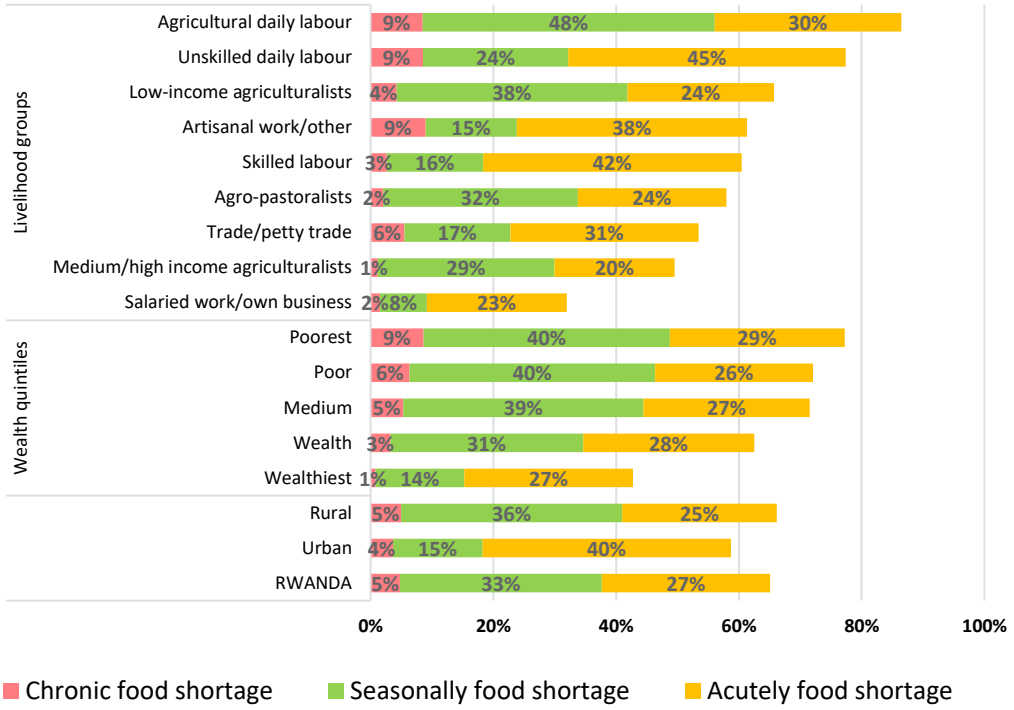
In total, among the 65 percent of households that reported having food access issues, 33 percent had seasonal food access issues, 27 percent had acute food access issues, and 5 percent had chronic access issues. Food shortages mainly occurred during the lean season in April and October-November. The proportion of households reporting acute food access difficulties increased by 5 percent and might be attributed to the COVID-19 outbreak (Figure 66).

Figure 66: Percentage of households by type of food access issues since 2012



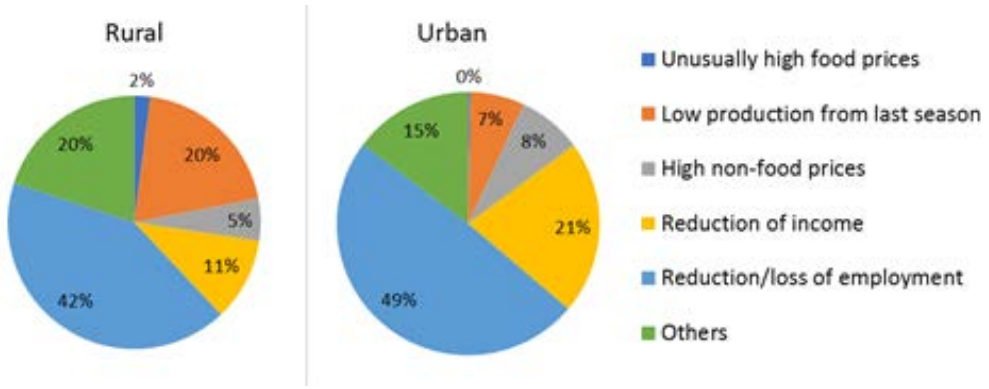
Among the different livelihood groups, the poorest households were more affected. Agriculturalists faced more seasonal food shortage. In 2021, unskilled labourers, skilled labourers, traders, and salaried workers were more affected by acute food access issues than in 2018 (Figure 67).

Figure 67: Percentage of households by livelihood groups, wealth quintiles, living areas which faced food access issues during the last 12 months



The COVID-19 outbreak and response measures has significantly increased the economic vulnerability of the households and even more so those with unstable sources of income. In urban areas, food shortage is caused by loss of employment or reduction of income. In rural areas, besides loss of employment, households also mentioned food production issues (Figure 66) and were more often affected by unusual situations that impacted their ability to provide food for household members. Poorer households with unstable sources of income more often experienced food access issues.

Figure 68: Main causes for food access issues in rural and urban areas



09. FOOD-BASED AND LIVELIHOOD COPING STRATEGIES

KEY MESSAGES

- In the last seven days preceding the survey, 47 percent of households indicated not having enough food or money to buy food.
- To cope with food shortage in the last 7 days, households used food coping strategies like 'relying on less preferred or less expensive foods' (57%) and 'limiting portion size at mealtimes (53%).
- 52 percent of households also used longer-term coping strategies to face shocks or food access issues in the last 12 months and mostly in the Western Province (61%).
- The main livelihood strategies used are 'purchasing food on credit', 'borrowing food' and 'spending savings to purchase food'.
- Related to COVID-19 outbreak context, households mostly reduced the quantity and the number of meals, borrowed food, and relied on less preferred food.

9.1. Food consumption-related coping strategies

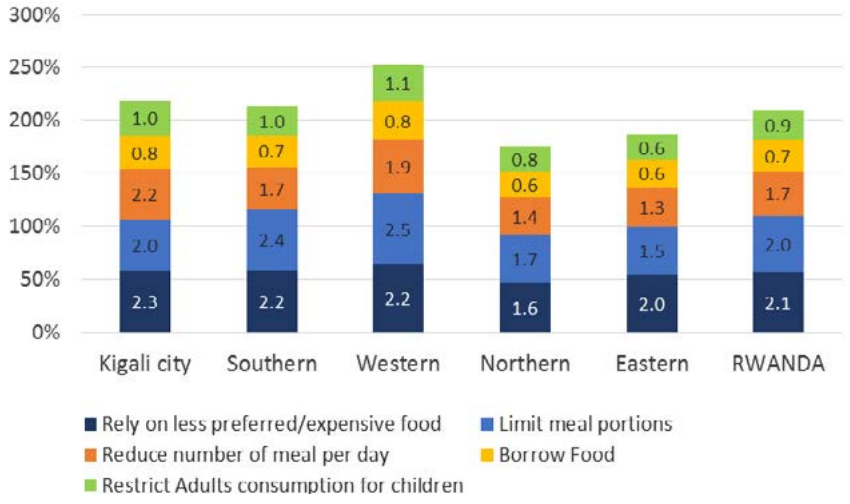
In the last seven days preceding the survey, 47 percent of households indicated not having enough food or money to buy food. Households attributed food shortage to a reduction in purchasing power (loss of employment/reduction of income) or low food stock (low production from previous agricultural season).

Households were asked if they applied any of the below food-based coping strategies during the time(s) when they did not have enough food or money to buy food:

- Relied on less preferred and less expensive food;
- Borrowed food or relied on help from friends/relatives;
- Limited portion size at mealtimes;
- Restricted consumption by adults for small children to eat;
- Reduced the number of meals eaten in a day.

The number of food coping strategies and the frequency of use vary according to the type of food access issues and the geographical area. One household out of two 'rely on less preferred or less expensive foods' (57%) and 'limit portion size at mealtimes' (53%). These strategies are used at least two times a week. 'Reducing the number of meals per day' is the third strategy used by 42 percent of households at least once a week. Households living in the Western Province relied more on food coping strategies, in particular 'limiting the meal portion size' and 'consuming cheaper food'. In Kigali City, the survey observed that more than half of households consumed less preferred food and reduce the meal frequency and size at least two days a week (Figure 69).

Figure 69: Percentage of households using food coping strategies and frequency of used in a week by provinces



9.2. Asset depletion and livelihood coping strategies

The livelihoods-based coping strategies module is used to better understand the longer-term coping capacity of households. The indicator is derived from a series of questions regarding household behaviours that led to asset depletion over the past 30 days prior to the interview, such as, selling productive assets or decreasing expenditure on productive inputs. These coping strategies are classified as stress, crisis, or emergency strategies depending on the severity of the strategy and its impact on the household's future coping strategies.

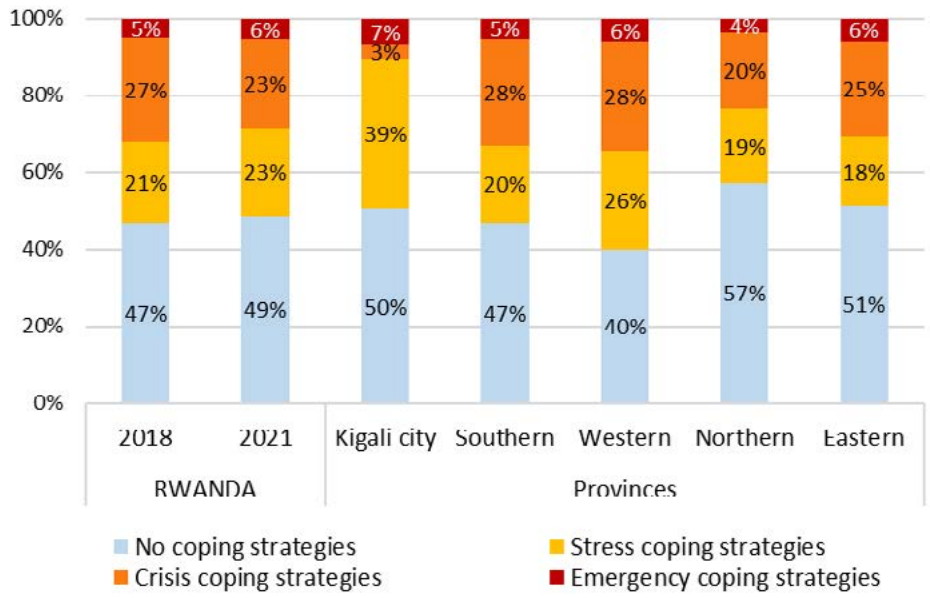
Table 13: Stress, crisis and emergency livelihood strategies used by the households

Stress strategies	Purchase food on credit or borrow food
	Spend savings
	Sell household's assets/goods
	Sell more non-productive animals than usual
Crisis strategies	Harvest crops earlier than expected
	Consume part of seed stocks
	Decrease expenditures on productive assets
Emergency strategies	Begging
	Sell last female animals
	Migration of the entire household

Globally, 52 percent of households used livelihoods or asset depletion coping strategies during the last 30 days before survey which is slightly similar to 2018.

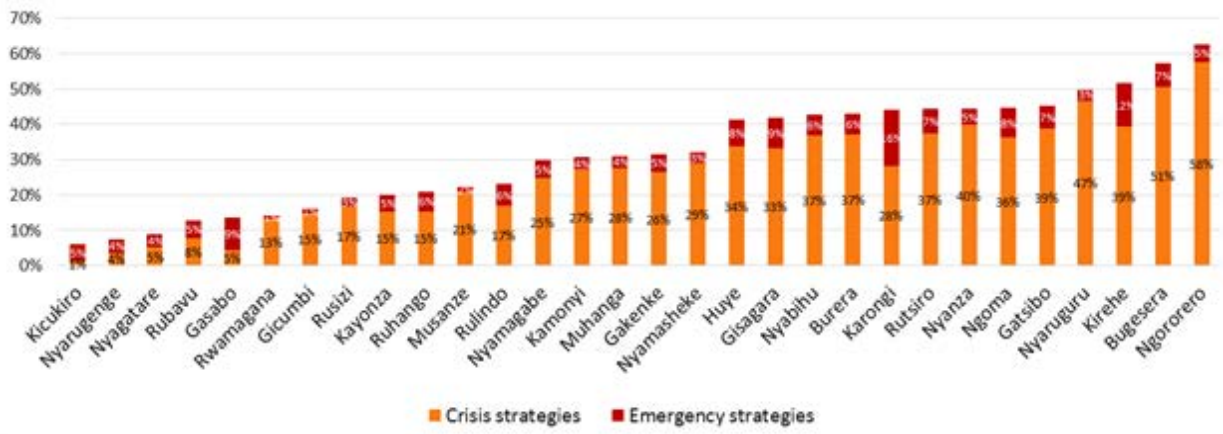
Proportionally, livelihood coping strategies are more used by households in the Western Province (61%) and less in the Northern Province (44%) (Figure 70).

Figure 70: Percentage of households using asset depletion coping strategies during the last 30 days nationally and by province

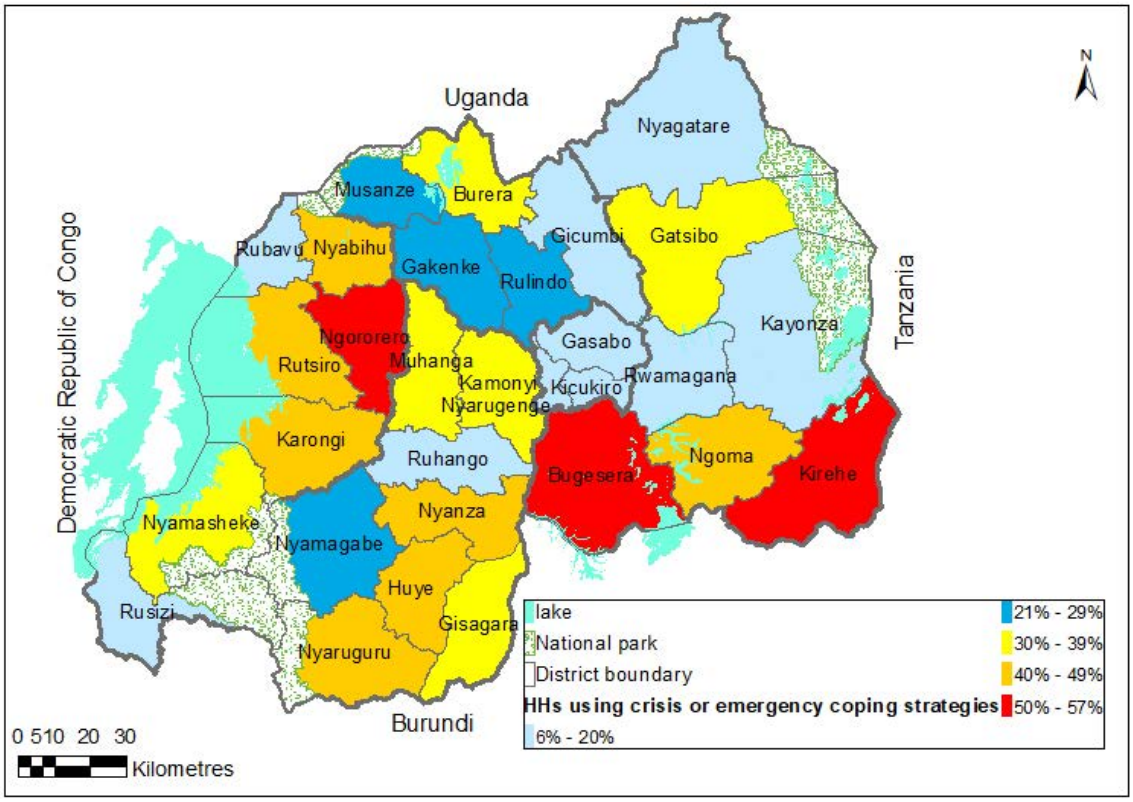


At the district level, households that employed more crisis and emergency strategies within 30 days before survey were located in Ngororero (68%), Kirehe (52%), and Nyaruguru (50%). This was the same as it was in 2018, but with the addition of Bugesera (57%) for this year. A large portion households in Karongi (16%) and Kirehe (12%) used emergency coping strategies (Figure 71). For the latter district, this situation may be related to irregular rainfalls but also to the pressure on Rwandan livelihoods due to Burundian refugees from Mahama Refugee Camp searching for business or job activities. For Karongi, 23 percent of households reported being mainly affected by the COVID-19 situation and 30 percent by irregular rains.

Figure 71: Percentage of households adopting crisis and emergency strategies during the 30 days before the survey by district



Map 4: Percentage of households adopting crisis and emergency strategies by district



When facing a food shortage, more than one-third of households (41%) reported purchasing food on credit or borrowing food and one-fifth (28%) spent savings to purchase food. Poorer households and rural households relied more on crisis and emergency strategies to manage the shortage of food in their households. In terms of livelihood groups, agricultural and unskilled daily labourers followed by low-income-agriculturalists and skilled labourers are more likely to use coping strategies. Agricultural daily labourers, skilled and unskilled daily labourers used emergency strategies like begging or migration of the entire household. Agricultural households used crisis strategies like consuming seeds or harvesting immature crops when possible.

Specifically related to the impact of the COVID-19 outbreak, households were asked which coping strategies they have used. Most of them reported using the food coping strategies as presented in Figure 72.

Figure 72: Strategies to cope with the COVID-19 pandemic

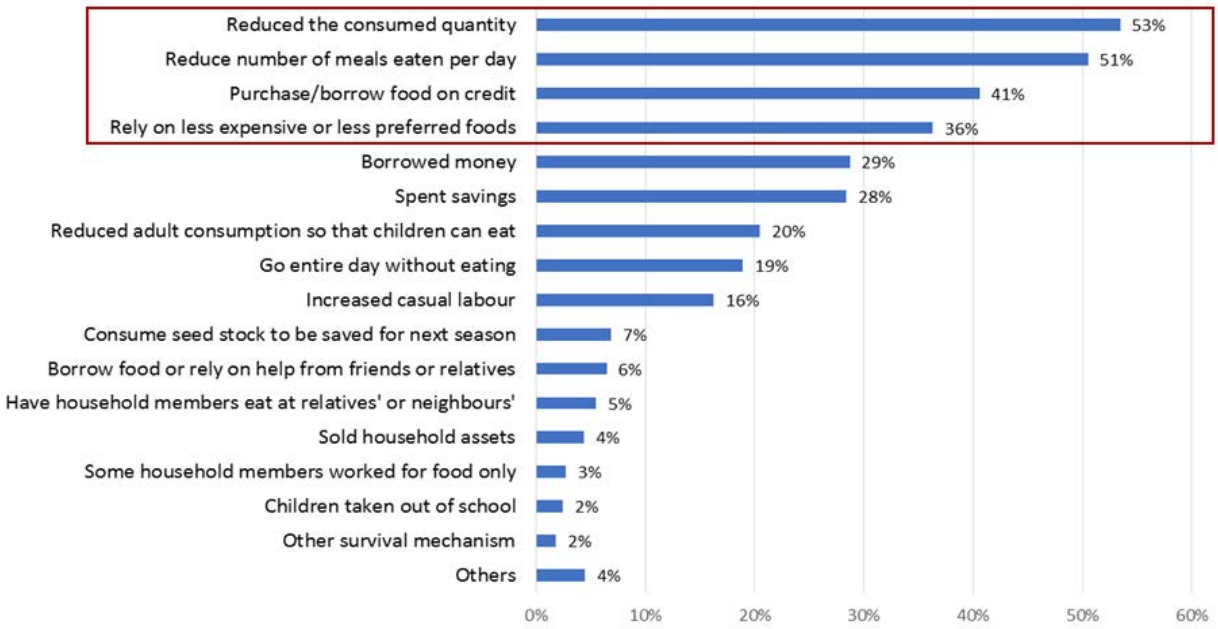


Table 14: Percentage of households adopting coping strategies by livelihood groups, poverty status and living area

		Summary of asset depletion			
		HH not adopting coping strategies	Stress coping strategies	Crisis coping strategies	Emergencies coping strategies
Livelihood group	Agricultural daily labour	32%	29%	28%	10%
	Unskilled daily labour	41%	50%	0%	9%
	Low-income agriculturalists	47%	13%	34%	5%
	Skilled labour	48%	42%	0%	10%
	Trade/petty trade	54%	43%	0%	3%
	Agro-pastoralists	57%	12%	28%	3%
	Medium/high income agriculturalists	57%	16%	24%	2%
	Artisanal work/other	60%	32%	0%	8%
	Salaried work/own business	72%	28%	0%	0%
Wealth Quintities	Poorest	40%	20%	29%	11%
	Poor	43%	22%	29%	5%
	Medium	44%	22%	29%	6%
	Wealth	51%	24%	20%	4%
	Wealthiest	63%	26%	8%	2%
	Rural	48%	20%	26%	6%
	Urban	53%	37%	4%	5%
RWANDA		**49%**	**23%**	**23%**	**6%**

10. FOOD SECURITY STATUS

KEY MESSAGES

- 79.4 percent of households in Rwanda are food secure and 20.6 percent are food insecure according to the CARI index.
- Food consumption slightly decreased economic access to food has steadily reduced but less households were involved in crisis livelihood coping strategies.
- Food security improved in 12 districts all over the country compared to 2018 and mainly in Kayonza, Kirehe, Gicumbi and Kamonyi district.
- The Western Province has the highest prevalence of food insecure (36%), and mainly in Ngororero district (54%), Rutsiro (49%), Karongi (39%), Nyamasheke (33%).
- Agricultural daily labourers are typically the more food insecure (40%) followed by low-income agriculturalists (22%) and unskilled daily labourers (22%).
- Food insecure households are more often headed by a woman, or by a single or less educated person.
- Land ownership and land size contribute to the reduction of food insecurity in Rwanda.
- Owning a cow reduces the proportion of being food insecure by two.

10.1. Food security situation

This food security analysis is based on the Food Security Index (FSI) which is an indicator based on the WFP CARI approach for reporting the severity of household food insecurity. The Food Security Index combines three indicators: Food Consumption Score, Share of Food Expenditure and, Livelihood Coping Strategies and classifies households into four standard descriptive groups which are food secure, marginally food secure, moderately food insecure, and severely food insecure. The latter two groups can be combined and classified as food insecure households.

Table 15 presents the percentage of households by food security classification for each of the three food insecurity indicators and the FSI. Overall, 79.4 percent of households in Rwanda are considered food secure and 20.6 percent are food insecure (18.8 percent are moderately food insecure and 1.8 percent severely food insecure).

Approximately 543,500 households were found to be food insecure. Of this, close to 47,600 households were severely food insecure, indicating that they have limited or no access to sufficient, nutritious food required to live a healthy life. These severely food insecure households had the poorest food consumption in the seven days preceding the survey, spent more than 75 percent of their monthly budget on food and used 'emergency' coping strategies in the last 30 days before the survey.

Table 15: Food security classification based on the CARI console

Domain		Indicator	Food secure	Marginally Food Secure	Moderately Food Insecure	Severely Food Insecure
Current Status	Food Consumption	Food Consumption Group	**Acceptable**		**Borderline**	**Poor**
			73.3%		23.7%	3.0%
Coping Capacity	Economic Vulnerability	Food Expenditure Share	**< 50%**	**50% - 65%**	**65% - 75%**	**> 75%**
			52.9%	21.2%	12.2%	13.7%
	Asset Depletion	Livelihood Coping Strategy Categories	**None**	**Stress**	**Crisis**	**Emergency**
			48.5%	23.0%	22.9%	5.6%
Food Security Index 2021			**41.3%**	**38.1%**	**18.8%**	**1.8%**
Confidence interval			± 1.0%	±1.0%	±0.8%	±0.4%
Total food in/secure 2021			**79.4%** (± 1%)		**20.6%** (± 0.8%)	
Households 2021			1 267 273	1 169 082	576 870	55 232

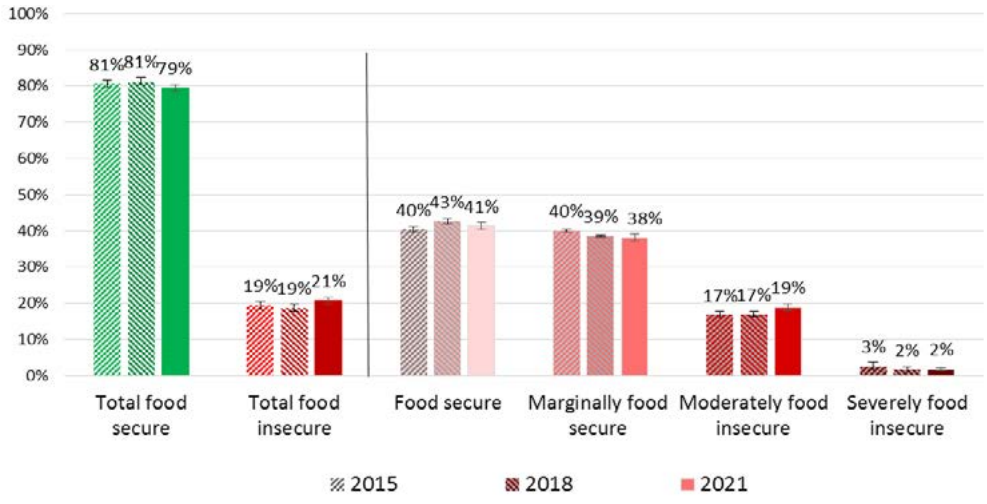
Among the food secure households, 38.1 percent were marginally food insecure, indicating that these households were food secure based on their current food consumption, but have a lower coping capacity with the impact of shocks.

10.1.1. Trends in food security

Trends in food security have not significantly changed since 2015. The proportion of total food-insecure households is 79.4 percent (±1.0%) in 2021 compared to 81.3 percent (± 1.0%) in 2018 and 80.5 percent (± 1.1%) in 2015.

Looking into the details, differences are observed between 2018 and 2021 between the food secure (-1%), marginally food secure (-1%), and moderately food insecure (+2 percent) (Figure 73).

Figure 73: Proportion of households by food security categories in 2015, 2018 and 2021



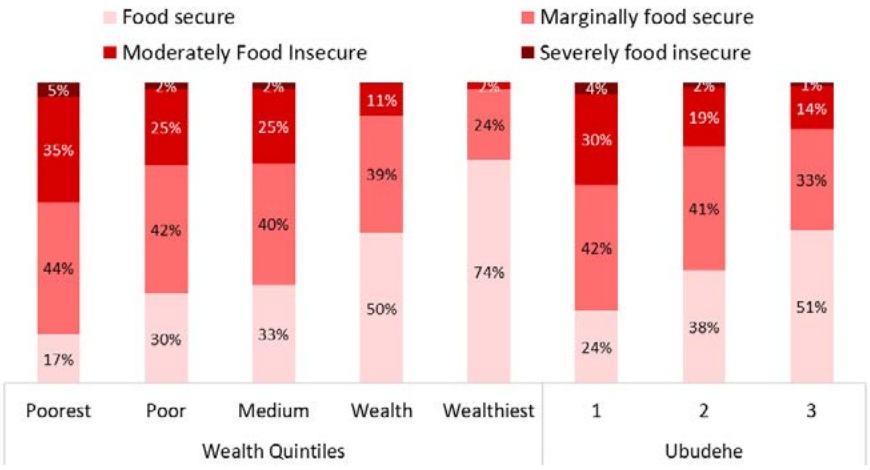
Food consumption slightly decreased since 2018 (+3 percent of households moved from an acceptable to borderline food consumption). Regarding household resilience, economic access to food has steadily reduced with more households (+2 percent) spending more than 65 percent of their budget on food. Nonetheless, less households (-3.5 percent) were involved in 'crisis' or 'emergency' livelihood coping strategies which might substantially have reduced their ability to cope with future shocks.

10.2. Who are the food insecure?

10.2.1. Poverty level and Ubudehe categories

Poor households are more prone to being food insecure. More than 24 percent of households classified in the poorest quintiles are food insecure compared to 10 percent in the wealthiest ones. This is more than 30 percent of households classified in Ubudehe category 1, 20 percent in Ubudehe 2 and 15 percent in Ubudehe 3 (Figure 74).

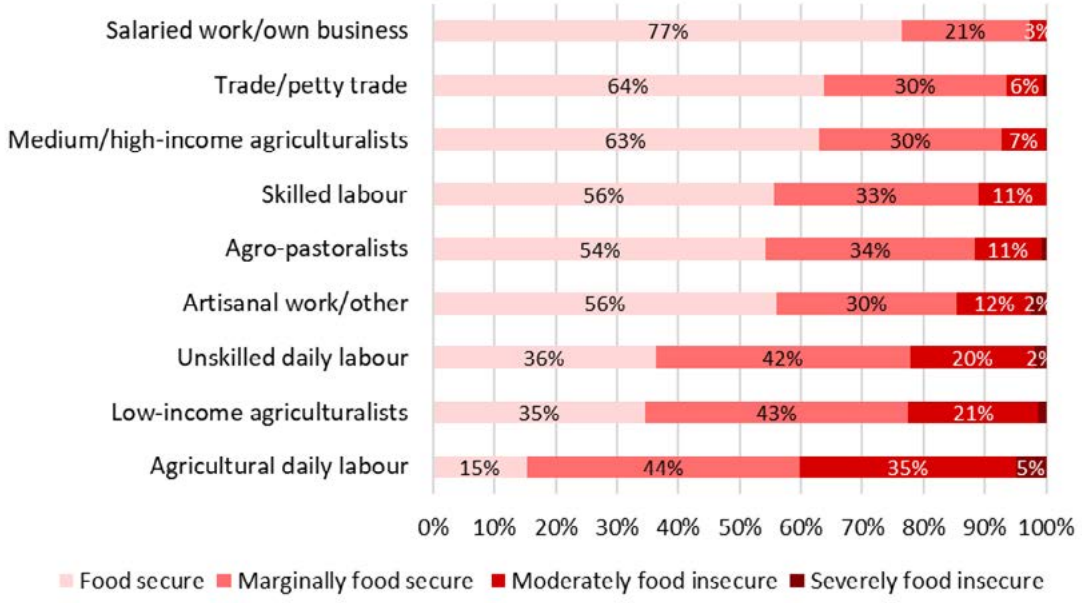
Figure 74: Food security status by wealth index and Ubudehe categories



10.2.2. Livelihood activities

Households living from agricultural daily labour are typically the more food insecure (40%) followed by low-income agriculturalists (22%), unskilled daily labourers (22%). Salaried workers/business owners, (petty) traders, and medium/high-income agriculturalists are in more than 90 percent food secure. Compared to 2018, the proportion of food security decreased for the skilled labourers from 65 percent to 56 percent and for the artisanal workers from 61 percent to 56 percent.

Figure 75: Food security status by livelihood groups

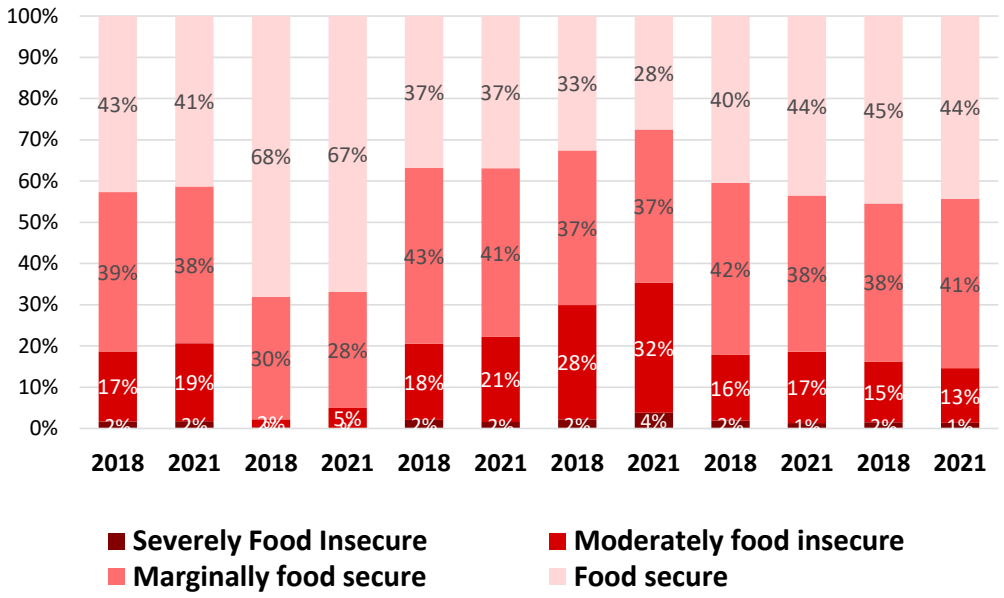


10.3. Where do food insecure households live?

The Western Province has the highest prevalence of food insecure households (35.3%), followed by the Southern Province (22.2%), Northern Province (18.6%) and Eastern Province (14.6%). The lowest prevalence of food insecurity was in the City of Kigali with 5 percent of moderately food insecure households.

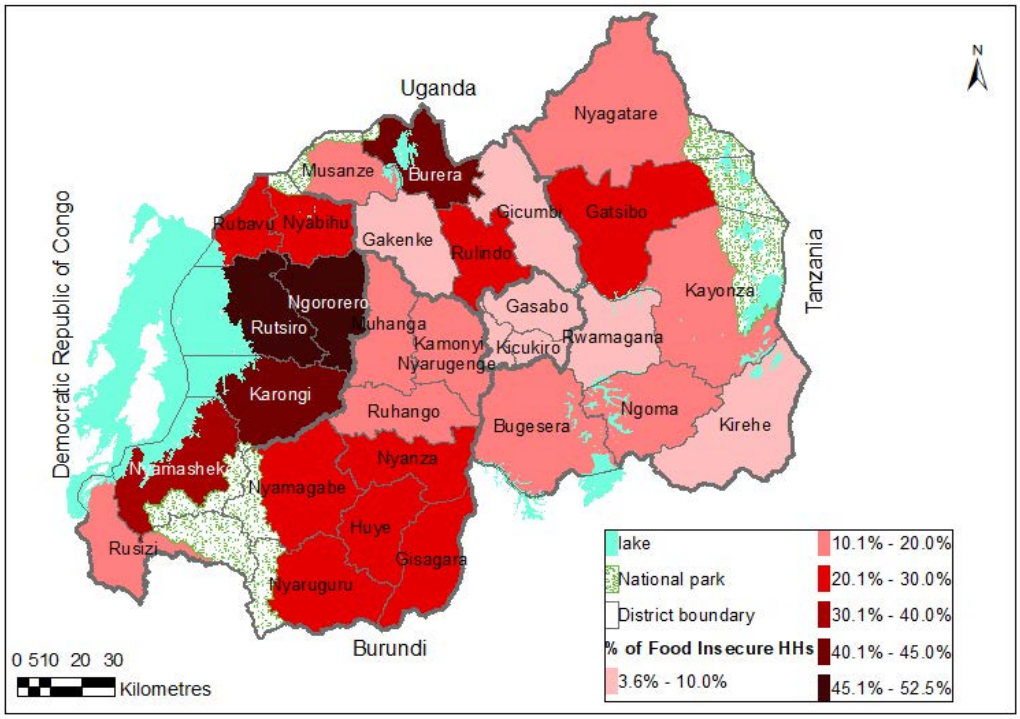
Compared to 2018, food insecurity increased by 3 percent in Kigali City, 3 percent in the Southern and 5 percent in the Western Provinces. However, food insecurity decreased by 3 percent in the Western and remains constant in the Northern Provinces. (Figure 76).

Figure 76: Trends of food insecurity by province

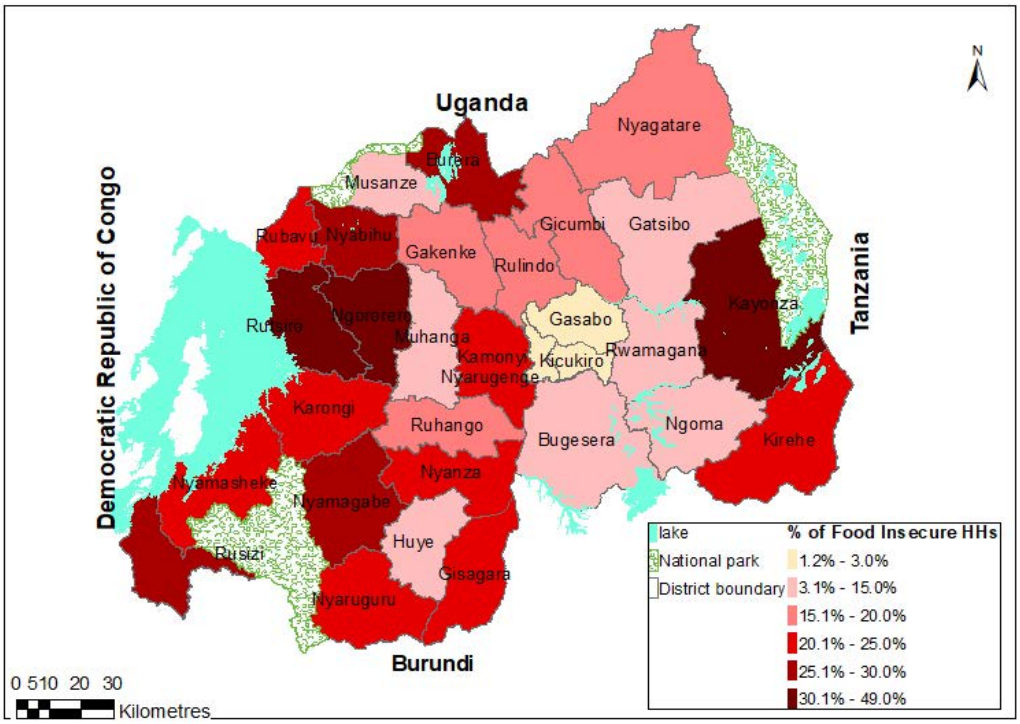


At the district level, the larger proportion of food insecure households are found in Ngororero district (54.5% of total food insecure with 7.5% of severely food insecure), Rutsiro (48.9%), Karongi (39.6%), Nyamasheke (32.6%) in the West, Burera (43.1%) in the North and Nyaruguru (32.0%) in the South (Map 5). The analysis shows that food insecurity is higher in rural areas (23.3%) than in urban areas (6.7%).

Map 5: Percentage of food insecure households per district in Rwanda (2021)



Map 6: Percentage of food insecure households per district (2018)



10.4. How many are the food insecure?

Table 16 below presents the percentage and the total number of food secure, marginally food secure, moderately food insecure and severely food insecure households by province and district. The number of food insecure is the highest in the Western Province (197,387 households) and the lowest in Kigali City (16,379 households). The district with the largest number of food insecure households is Ngororero (48,057 households) followed by Rutsiro (37,255 households) and Burera (34,363 households).

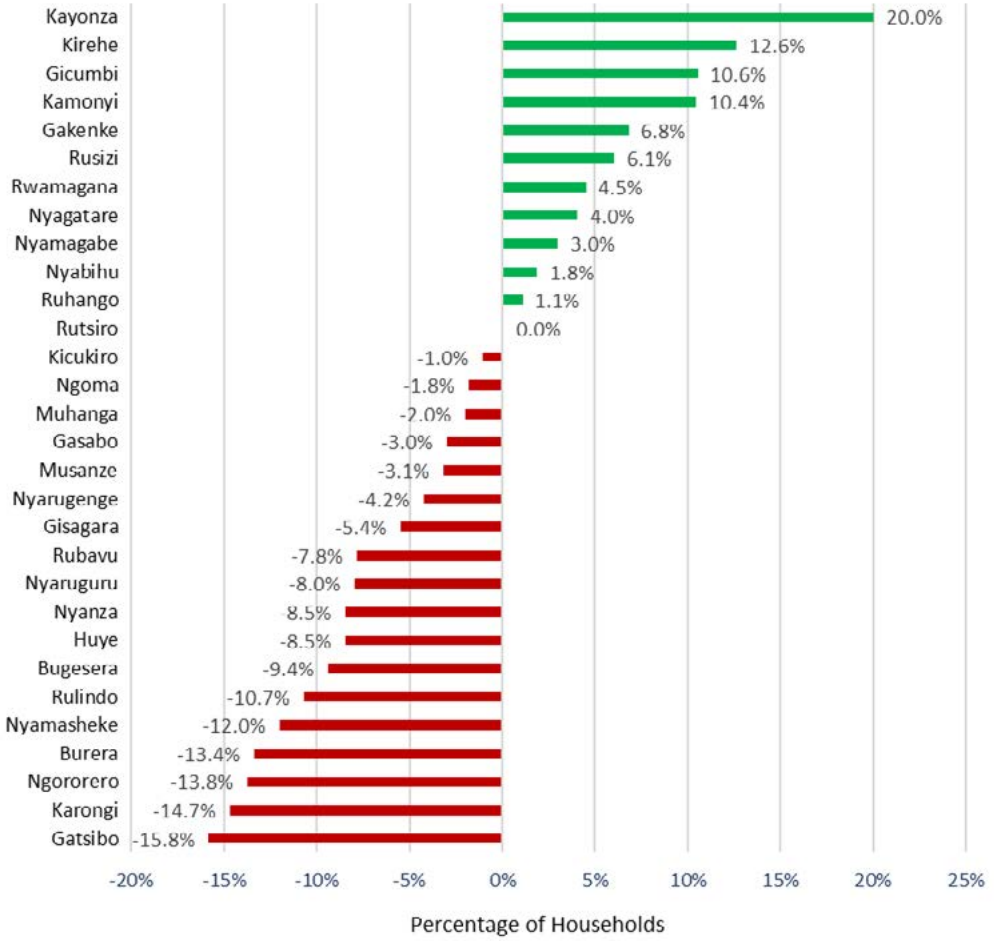
Table 16: Percentage and number of food secure and food insecure households by province and district in 2021

Total households		HOUSEHOLD FOOD SECURITY STATUS											
		Food secure		Marginally food secure		Moderately food insecure		Severely food insecure		Total Food secure		Total Food insecure	
		%	House-holds	%	House-holds	%	House-holds	%	House-holds	%	House-holds	%	House-holds
RWANDA	2,596,016	41.3%	1,072,553	38.0%	987,629	18.9%	489,361	1.8%	46,474	79.4%	2,060,182	20.6%	535,834
PROVINCE													
Kigali city	310,819	66.9%	207,881	28.1%	87,484	5.0%	15,454	0.0%	-	95.0%	295,365	5.0%	15,454
Southern	626,461	36.9%	231,173	40.9%	256,356	20.6%	129,084	1.6%	9,848	77.8%	487,529	22.2%	138,932
Western	586,455	27.5%	161,514	37.1%	217,664	31.5%	184,834	3.8%	22,443	64.7%	379,178	35.3%	207,278
Northern	444,602	43.5%	193,555	37.9%	168,456	17.3%	76,877	1.3%	5,715	81.4%	362,011	18.6%	82,592
Eastern	627,678	44.4%	278,430	41.1%	257,669	13.2%	83,112	1.3%	8,468	85.4%	536,099	14.6%	91,580
DISTRICTS													
Nyarugenge	79,462	68.1%	54,131	26.5%	21,047	5.4%	4,284	0.0%	0	94.6%	75,178	5.4%	4,284
Gasabo	163,701	64.7%	105,899	30.0%	49,078	5.3%	8,724	0.0%	-	94.7%	154,977	5.3%	8,724
Kicukiro	67,656	70.7%	47,851	25.7%	17,359	3.6%	2,446	0.0%	0	96.4%	65,210	3.6%	2,446
Nyanza	70,910	35.6%	25,215	35.9%	25,472	25.9%	18,379	2.6%	1,844	71.5%	50,687	28.5%	20,223
Gisagara	92,416	33.2%	30,649	38.5%	35,555	25.5%	23,597	2.8%	2,615	71.6%	66,204	28.4%	26,212
Nyaruguru	64,563	26.9%	17,337	44.2%	28,559	27.3%	17,638	1.6%	1,029	71.1%	45,896	28.9%	18,667
Huye	81,280	29.0%	23,563	47.8%	38,838	22.2%	18,036	1.0%	843	76.8%	62,401	23.2%	18,879
Nyamagabe	73,682	39.5%	29,098	35.0%	25,787	23.7%	17,486	1.8%	1,311	74.5%	54,885	25.5%	18,797
Ruhango	76,414	48.6%	37,168	34.7%	26,524	15.8%	12,112	0.8%	611	83.4%	63,692	16.6%	12,723
Muhanga	79,926	38.6%	30,829	46.4%	37,060	13.6%	10,897	1.4%	1,140	84.9%	67,889	15.1%	12,036
Kamonyi	87,270	42.8%	37,314	44.2%	38,562	12.5%	10,940	0.5%	454	86.9%	75,876	13.1%	1,394
Karongi	81,435	25.0%	20,322	33.9%	27,592	33.9%	27,630	7.2%	5,891	58.8%	47,914	41.2%	3,521
Rutsiro	76,133	14.0%	10,669	37.1%	28,209	42.0%	31,975	6.9%	5,280	51.1%	38,878	48.9%	37,255
Rubavu	80,826	31.4%	25,348	38.9%	31,446	28.0%	22,602	1.8%	1,429	70.3%	56,794	29.7%	24,031
Nyabihu	73,315	31.2%	22,874	45.3%	33,244	22.3%	16,339	1.2%	858	76.5%	56,118	23.5%	17,197
Ngororero	88,116	13.8%	12,129	33.7%	29,697	46.1%	40,654	6.4%	5,636	47.5%	41,826	52.5%	46,290
Rusizi	89,082	45.4%	40,482	35.3%	31,403	17.7%	15,736	1.6%	1,460	80.7%	71,885	19.3%	17,197
Nya-masheke	97,549	30.4%	29,690	37.0%	36,072	30.6%	29,898	1.9%	1,889	67.4%	65,762	32.6%	31,787
Rulindo	84,573	44.0%	37,175	29.1%	24,595	25.7%	21,720	1.3%	1,084	73.0%	61,770	27.0%	22,803
Gakenke	83,130	48.0%	39,918	43.8%	36,391	7.4%	6,174	0.8%	648	91.8%	76,308	8.2%	6,822
Musanze	91,454	46.3%	42,369	39.4%	36,076	13.7%	12,552	0.5%	456	85.8%	78,445	14.2%	13,009
Burera	79,731	21.8%	17,412	36.5%	29,140	37.2%	29,652	4.4%	3,527	58.4%	46,552	41.6%	33,179
Gicumbi	105,714	53.6%	56,681	40.0%	42,254	6.4%	6,779	0.0%	-	93.6%	98,935	6.4%	6,779
Rwamagana	85,478	62.1%	53,097	30.5%	26,084	7.4%	6,296	0.0%	-	92.6%	79,182	7.4%	6,296
Nyagatare	115,230	62.6%	72,097	25.3%	29,173	10.9%	12,514	1.3%	1,446	87.9%	101,269	12.1%	13,960
Gatsibo	99,832	30.5%	30,465	43.1%	43,077	23.8%	23,727	2.6%	2,563	73.7%	73,542	26.3%	26,289
Kayonza	78,404	50.7%	39,733	37.2%	29,137	10.7%	8,360	1.5%	1,175	87.8%	68,870	12.2%	9,534
Kirehe	75,562	34.8%	26,273	55.3%	41,777	9.3%	7,003	0.7%	508	90.1%	68,050	9.9%	7,511
Ngoma	87,805	37.6%	32,990	48.3%	42,419	12.0%	10,518	2.1%	1,878	85.9%	75,409	14.1%	12,396
Bugesera	85,368	27.8%	23,775	53.9%	46,002	17.2%	14,693	1.1%	899	81.7%	69,776	18.3%	15,592

10.5. How has food security changed since 2018?

In comparison with 2018, the food security situation improved in 12 districts all over the country (Figure 77). Significant changes were observed for Kayonza district which has improved the prevalence of food secure households by 20 percent (from 67.3% in 2018 to 87.3% in 2021). High improvements are also observed in Kirehe (+12.6%), Gicumbi (+10.6%) and Kamonyi (+10.4%). Food security continues to deteriorate exceedingly in Karongi (-14.7%), Ngororero (-13.8%), Burera (-13.4%), Nyamasheke (-12%) but also in Gatsibo district (-15.8%).

Figure 77: Variation of food security percentage between 2018 and 2021



10.6. Why are they food insecure?

Food security is estimated using the food security index, an indicator computed based on a combination of food consumption and the economic vulnerability to access food which is expressed through the food expenditure share and the use of livelihood coping strategies.

This CFSVA analysis showed that if the level of households with poor food consumption has decreased, around 3 percent of households moved from an 'adequate' to 'borderline' food consumption, mainly due to reduction of protein sources (from 69% in 2018 to 56% in 2021). Ngororero, Rutsiro, Burera, Karongi and Nyamasheke districts present more than 60 percent of households with adequate food consumption.

In terms of economic vulnerability, the food expenditure share has slightly increased at the national level from 46 percent in 2018 to 48 percent in 2021, mainly due to a higher rise in Northern and Western Provinces but also in the City of Kigali. For the food security index, the percentage of households spending more than 65 percent of their budget on food are considered as highly economically vulnerable to access food.

In the districts of Rutsiro, Karongi, Ngororero, Rubavu, Burera, Huye, Nyaruguru, Rulindo and Gatsibo, more than 30 percent of households spend on average more than 65 percent of their budget to purchase food. This means that these households have a very small budget left to cover any other essential needs like education, health, transport or the purchase of productive assets. Moreover, they are less economically resilient to cope with any shocks or unusual situations that can impact their livelihood.

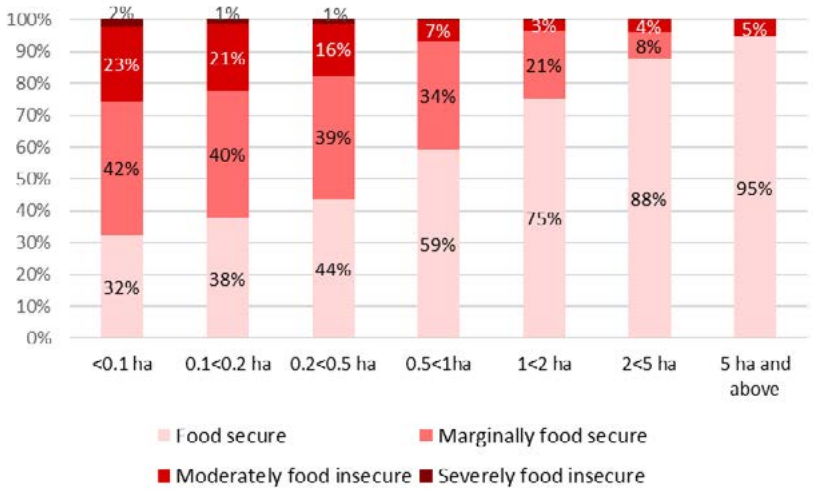
The use of livelihood coping strategies is the third indicator considered for the food security index. Half of the households surveyed (51%) used livelihoods or asset depletion coping strategies during the last 30 days before the survey which is 4 percent less than those reported in 2018. Around 22 percent used 'crisis' coping strategies like consuming seed stocks and 6 percent used 'emergency' coping strategies like begging or the migration of the entire households. These combined two categories of strategies were more used in Ngororero (68%), Bugesera (57%), Kirehe (52%) and Nyaruguru (50%). In addition, many households in Karongi (16%) and Kirehe (12%) used emergency coping strategies.

10.7. Underlying factors contributing to food insecurity

10.7.1. Land ownership and land size

For agricultural households, land size is correlated with food security. One household out of five owning less than 0.2 ha are food insecure, and one household out of four owning less than 0.1 ha are food insecure. Around 43 percent of severely food insecure households have no land and 34 percent own less than 0.1 ha. Less than 10 percent of households with land more than 0.5 ha are moderately food insecure (Figure 78). Land ownership and land size contribute certainly to the reduction of food insecurity in Rwanda. Households that cultivate a vegetable garden are less food insecure (16%) than those that do not (23%).

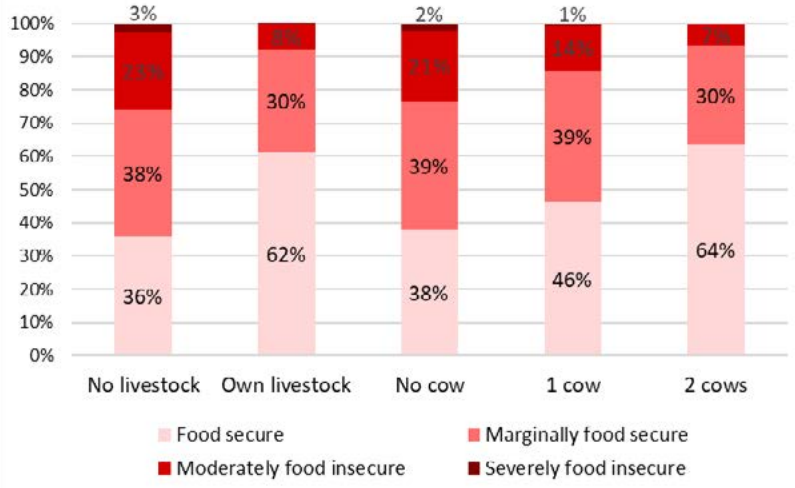
Figure 78: Food security status by land size



10.7.2. Livestock ownership

Livestock ownership also contributes to alleviating food insecurity. Only 8 percent of households owning livestock are food insecure compared to 26 percent of those without livestock. Owning a cow reduces the likelihood of households being food insecure by half. Owning two cows reduces it three-fold.

Figure 79: Food security status by livestock ownership and number of cows



10.7.3. Household's head characteristics

While the gender of the head of households might not be a direct determinant of food insecurity as per the conceptual framework, it has been observed in many studies like this CFSVA that female-headed households are generally more food insecure than male-headed households (27% compared to 18%) (Table 17). In Rwanda as in many other societies, a female-headed household automatically refers to a single-headed household where the head must cover most if not all of the expenses of the whole family.

Looking at the marital status, single, separated, divorced and, widowed heads of households are mostly food insecure (23%-28%) than the married ones (17%).

Food insecurity also varies with the age and education level of the head of household. Food insecurity is higher in households where the head is not of working age (below 18 or above 60 years old). A more educated head of household significantly reduces the chance of its household being food insecure. Around 30 percent of households where the head of household is non- educated head are food insecure compared to 16 percent of those who completed the primary level and 7 percent for secondary level. No food insecure households were found in households headed by a person who has attended university.

Female-headed households, who have completed some or all the secondary level are less food secure than male-headed with the same level of education (Table 17). Girls' education has a substantial impact on the household's welfare.

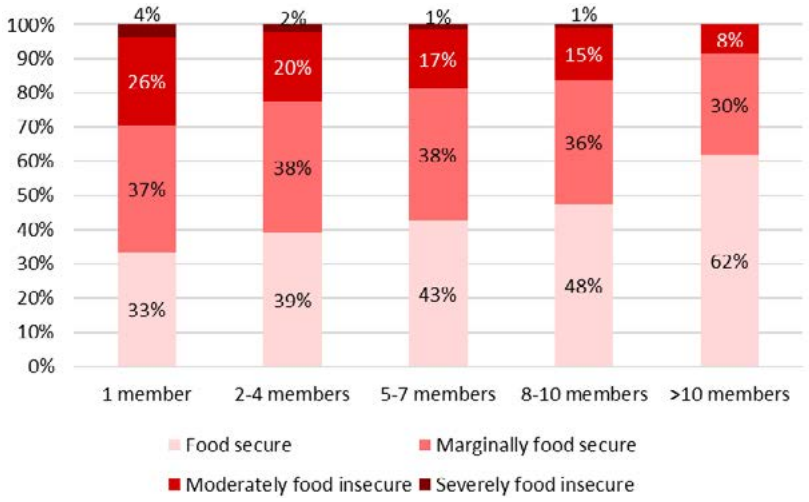
Table 17: Food security status by household's head characteristics

		Households Food Security			
		Food secure	Marginally food secure	Moderately food insecure	Severely food insecure
Gender	Female	33%	40%	24%	3%
	Male	44%	37%	17%	1%
Age	Under 18	0%	36%	33%	32%
	18-39 years old	39%	40%	18%	2%
	40-60 years old	44%	37%	17%	1%
	>60 years old	40%	36%	22%	2%
Education level	No school	29%	41%	27%	3%
	Some/still primary	36%	42%	19%	2%
	Completed primary	48%	36%	15%	1%
	Vocational school	58%	27%	14%	0%
	Some/still secondary	55%	36%	8%	0%
	Completed secondary	69%	24%	7%	0%
	Some/still university	85%	15%	0%	0%
	Completed university	91%	9%	0%	0%
Marital status	Married	47%	36%	16%	1%
	Partner	36%	42%	20%	2%
	Divorced	38%	39%	21%	2%
	Separated	28%	44%	24%	4%
	Widow/Widower	31%	41%	25%	3%
	Never married	40%	37%	20%	3%

10.7.4. Household's size

The size of the household, which is related to an increase in the number of economically active members, contributes to improving food security. Those from single-person households seem to be more food insecure (26% of food insecure for one member household compared to 18 percent for 5-7 members) potentially because of some expenses like rental, electricity that cannot be shared among several economically active household members (Figure 80).

Figure 80: Food security status by household's size



11. NUTRITION STATUS IN CHILDREN AND WOMEN

KEY MESSAGES

- National stunting rates have significantly decreased from 34.9 percent in 2018 to 32.4 percent in 2021 and in all provinces except Kigali City. Stunting remains higher in the Western and Northern Province (37.9%).
- Wasting prevalence in children 6-59 months reaches 2.4 percent with 1.8 percent of moderate acute malnutrition (MAM) and 0.6 percent of severe acute malnutrition (SAM). SAM increased most in the Eastern Province.
- Underweight prevalence in children 6-59 month aged is 9.4 percent and is higher in the Western (12.2%) and Southern Provinces (11.6%).
- 90.5 percent of children under six months of age were exclusively breastfed.
- Only 40 percent of children were introduced to solid, semi-solid or soft foods at the aged of six months.
- 19.5 percent of children 6 to 23 months meet all the requirements for a minimum acceptable diet (+2.5% compared to 2018), 32.8 percent reach the minimum meal frequency and 42.3 percent obtain the minimum dietary diversity of four food groups consumed.
- 25 percent of children 6-23 months are involved in Shisha Kibondo programme and 11 percent in therapeutic feeding programmes.
- Stunting rates for children are higher among the poorest households (43%) and food insecure households (44%).
- 32 percent of women 15-49 years old met the minimum diet diversity for women (MDD-W) which corresponds to the consumption of five food groups.
- Half of women reported a decrease in purchasing food because of the COVID-19 pandemic and/or its effects. The proportion is higher in the Western province (71%) and in urban areas (54%).

11.1. Nutritional status in 6-59 months

Among households interviewed in the CFSVA, anthropometric measurements (age, weight, and height or length) were taken for all children under 5 years old to determine the levels of stunted, wasting, underweight and overweight children. In total, 5,137 children were measured. The four nutritional indicators were expressed in standard deviation (SD) units (z-score) from the median of 2006 WHO reference standards, with the cut-off set as -2 SD for moderate acute malnutrition (MAM), -3 SD for severe acute malnutrition (SAM). In addition, the detection of bilateral pitting oedema was carried out along with the measurement of the mid-upper arm circumference (MUAC) for all children under five years of age.

Nutritional data was collected to explore the linkage between food security and malnutrition. The sample size of the survey allows representation of malnutrition prevalence at national and provincial levels. At district level, the figures are only informative as the number of children measured were not reaching the statistically expected minimum in all the districts.

11.1.1. Trends in 6-59 months' child nutrition

In 2021, the national level of chronic malnutrition (or stunting) in children under 5 reached 32.4 percent with 24.0 percent of moderate stunting and 8.4 percent of severe stunting (Table 18). This is a progressive decrease over the last nine years from 43.0 percent in 2012, 36.7 percent in 2015, 34.9 percent in 2018 to 32.4 percent in 2021. In Figure 79, these are presented in addition to Rwanda Demographic Health Survey (RDHS) prevalence for comparison.

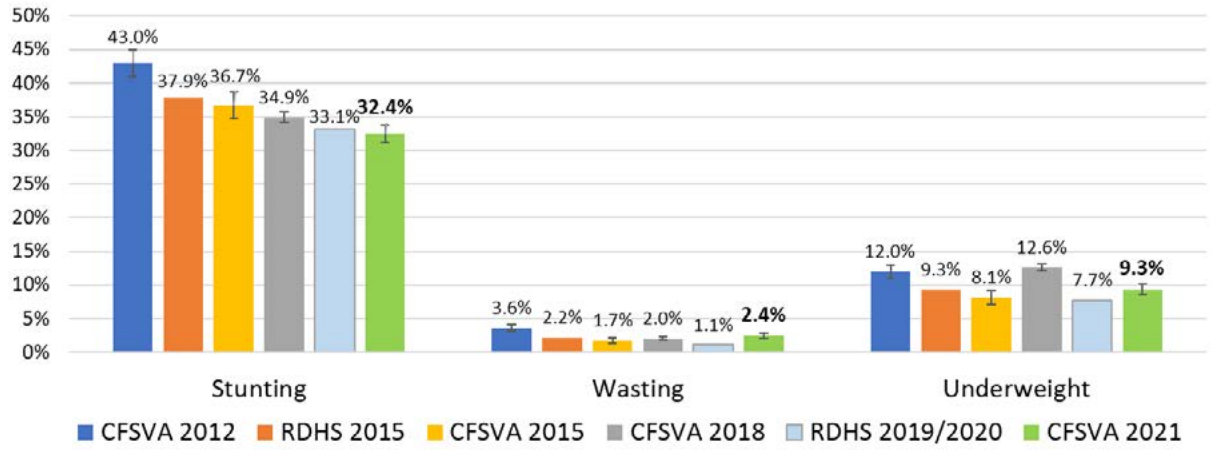
Acute malnutrition (or wasting) in children under 5 is 2.4 percent; with 1.8 percent of moderate acute malnutrition (MAM) and 0.6 percent of severe acute malnutrition (SAM). The prevalence of acute malnutrition has slightly increased by 0.4 percent compared to 2.0 percent in 2018.

The prevalence for underweight children under 5 years is 9.3 percent with 7.7 percent moderately and 1.6 percent severely underweight. Compared to 2018, this represents a reduction of 3.3 percent.

Table 18: Prevalence of malnutrition among children under five years in 2021 in Rwanda

	Global			Moderate			Severe		
		95% CI			95% CI			95% CI	
	%	Lower	Upper	%	Lower	Upper	%	Lower	Upper
Wasting	2.4	2.0	2.8	1.8	1.4	2.2	0.6	0.4	0.08
Stunting	32.4	31.1	33.7	24.0	22.8	25.2	8.4	7.6	9.2
Underweight	9.3	8.5	10.1	7.7	7.0	8.4	1.6	1.3	1.9

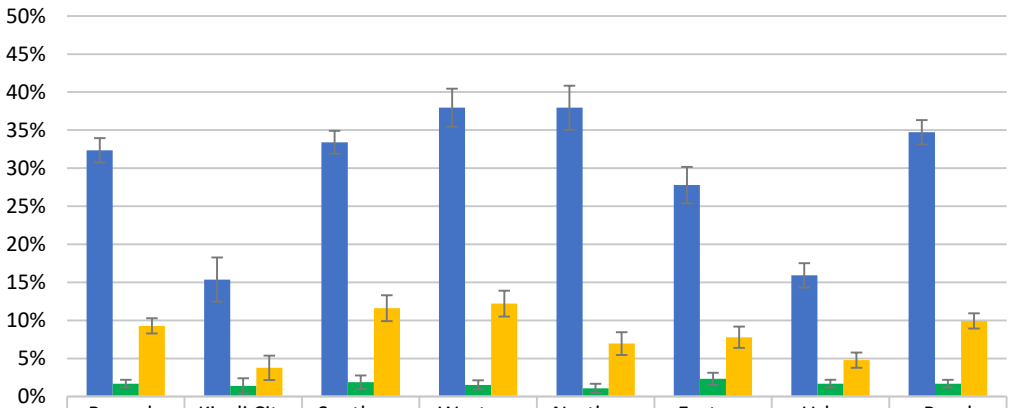
Figure 81: Trends of national malnutrition prevalence from different surveys



11.1.2. Geographic disparities

While the level of wasting does not steadily change, the geographic variation in stunting and underweight rates are more significant. Child malnutrition rates are generally higher in rural areas, especially for stunting which stands at 34.7 percent in rural areas compared to 15.9 percent in urban areas. The highest stunting rates of 38 percent are found in the Western and the Northern Provinces. The stunting rate is the lowest in Kigali City with 15.4 percent (Figure 82). Levels of wasting show no significant differences between urban and rural areas. The prevalence of wasting reaches 3.2 percent in the Eastern and 2.7 percent in the Southern Provinces. The levels of underweight are two times higher in rural than urban areas. The percentage of underweight children remains high in the Southern (11.6 %) and the Western Provinces (12.2 %) but it has dropped in Kigali City (from 8.1 % in 2018 to 3.8 % in 2021).

Figure 82: Percentage of malnourished children under five years old per province in 2021



	Rwanda	Kigali City	Southern	Western	Northern	Eastern	Urban	Rural
Stunting	32.4%	15.4%	33.4%	37.9%	37.9%	27.8%	15.9%	34.7%
Wasting	1.7%	1.4%	1.9%	1.5%	1.1%	2.3%	1.7%	1.7%
Underweight	9.3%	3.8%	11.6%	12.2%	7.0%	7.8%	4.8%	9.9%

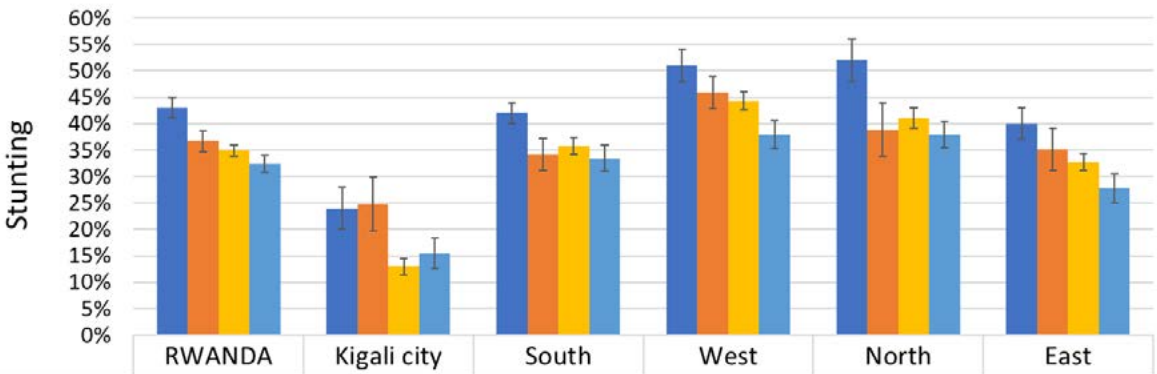
11.2. Child stunting

11.2.1. Stunting prevalence at province and districts levels.

Stunting reduced in all provinces below the level of 40 percent which used to be the WHO cut-off for a very high level of stunting. In Kigali City, the prevalence has slightly increased but remains the lowest (15.4%).

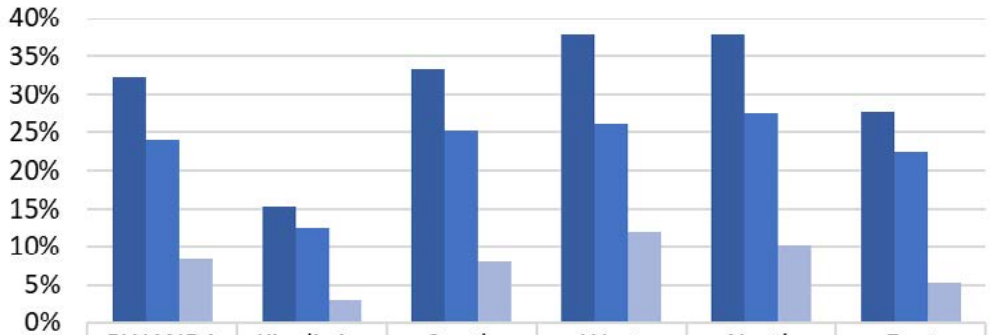
A relevant decline of global stunting is observed in the Western (-6.4 %) and Eastern Provinces (-4.9 %) which has currently the lowest prevalence (27.8%) after Kigali City (Figure 82). In terms of severity, the Western, Northern and Southern Provinces present high levels of severe stunting respectively 11.9 percent, 10.3 percent and 8.1percent (Figure 83).

Figure 83: Child stunting per province in 2012, 2015, 2018 and 2021 (CFSVA)



	RWANDA	Kigali city	South	West	North	East
CFSVA 2012	43.0%	24.0%	42.0%	51.0%	52.0%	40.0%
CFSVA 2015	36.7%	24.8%	34.2%	45.9%	38.9%	35.1%
CFSVA 2018	34.9%	12.9%	35.7%	44.3%	41.0%	32.7%
CFSVA 2021	32.4%	15.4%	33.4%	37.9%	37.9%	27.8%

Figure 84: Global, moderate and severe child stunting for 6-59M by province

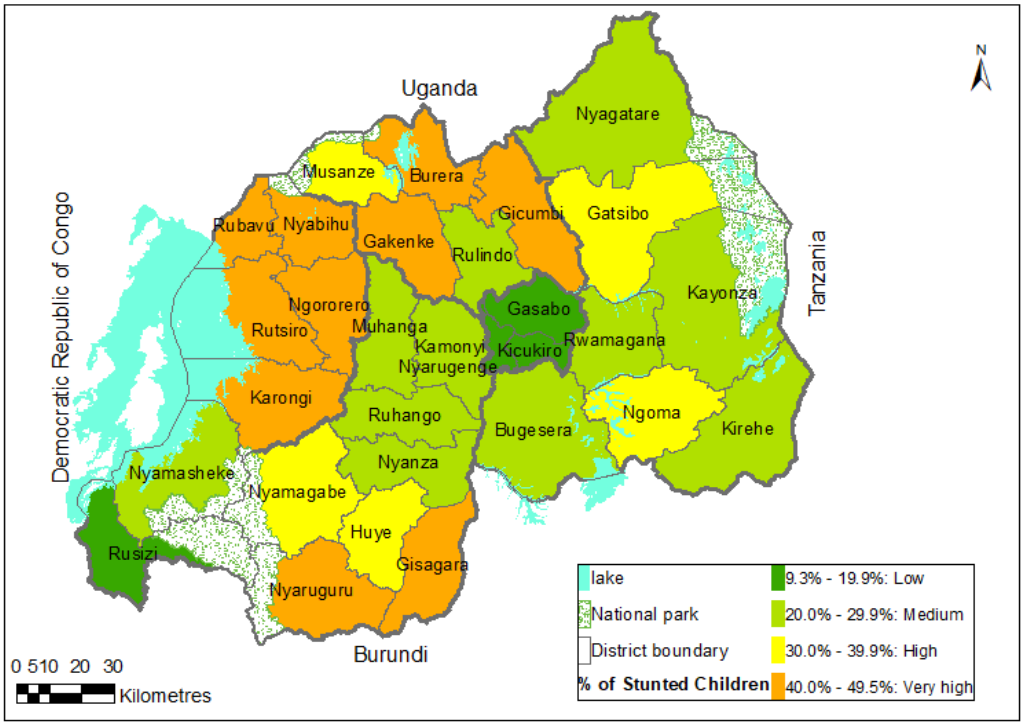


	RWANDA	Kigali city	South	West	North	East
	Province					
Global	32.4%	15.4%	33.4%	37.9%	37.9%	27.8%
Moderate	24.0%	12.4%	25.3%	26.1%	27.7%	22.4%
Severe	8.4%	3.0%	8.1%	11.9%	10.3%	5.4%

At the district level, stunting prevalence reduced in almost all districts, but remains above 40 percent in ten districts as seen in Map 7. All the districts present a level of severe stunting higher than 10 percent (except for Gicumbi district) (Figure 85).

Compared to 2018, stunting increased in Karongi (from 35% to 42%), Nyarugenge (15% to 19%), Bugesera (25% to 29%), Gicumbi and Gisagara (38% to 41%).

Map 7: 6-59M child stunting by district in 2021 (old WHO cut-off)



Map 8: 6-59M child stunting by district in 2021 (new WHO cut-off)

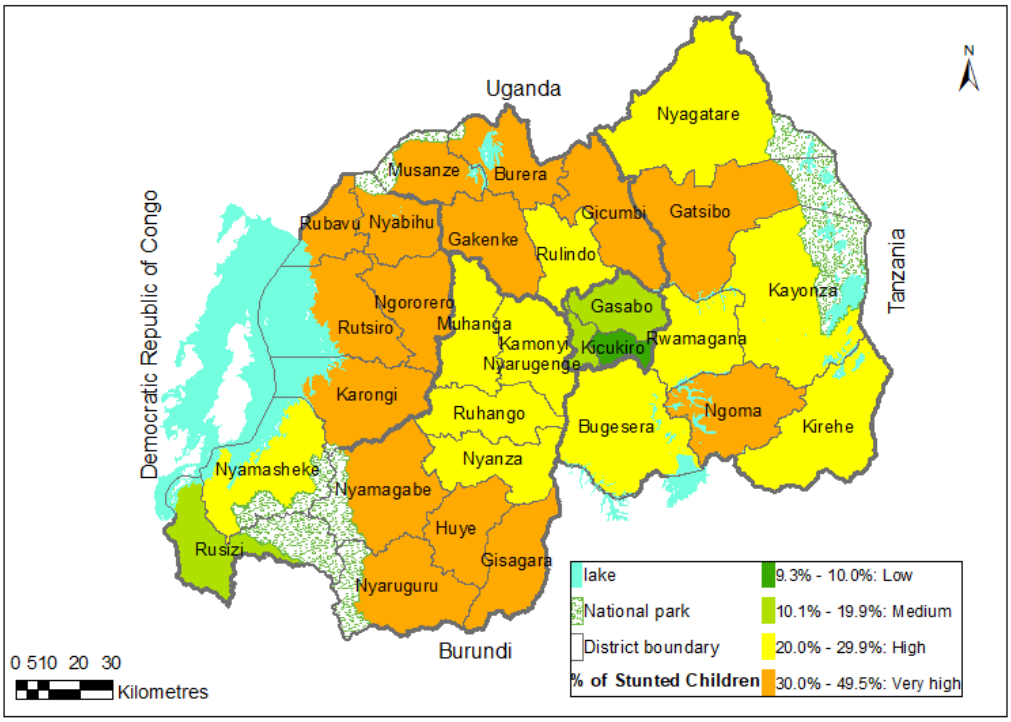
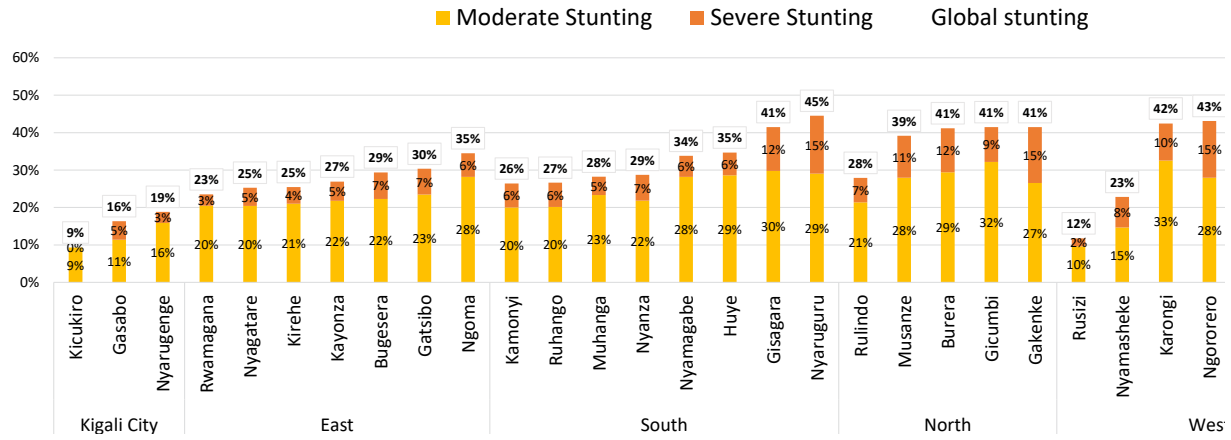


Figure 85: Moderate and severe stunting by district



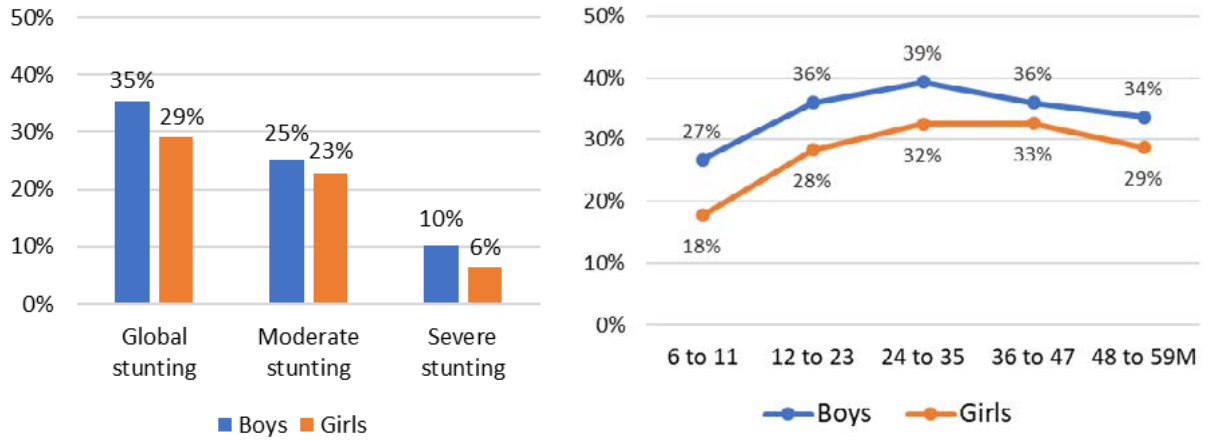
11.2.2. Stunting by age and sex

Research reports that boys are more vulnerable to health inequalities than girls in the same age groups and the lowest socio-economic households. In 2021 in Rwanda, boys under five years old were significantly more stunted than girls[25] : 35 percent of stunted boys for 29 percent of stunted girls. The same trend is observed for severe stunting.

Stunting also varies with child age. Stunting levels are higher between children 24- and 35-months old, especially for boys. Inadequate food intake during the 1,000 days between conception and 24 months is critical and may hamper child growth in the following years (Figure 86).

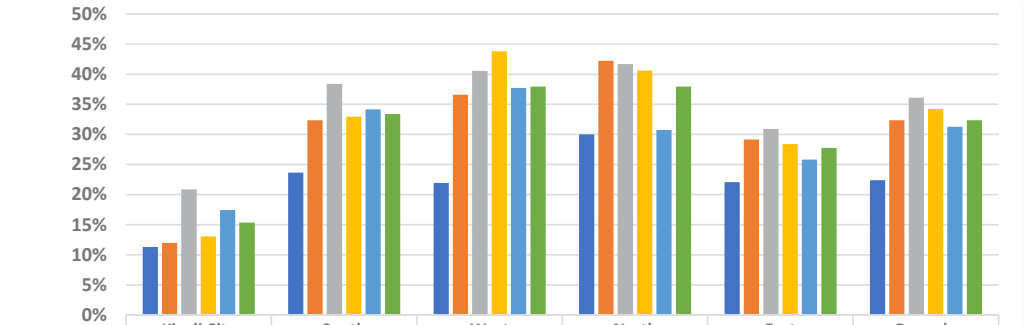
In the Western Province, child stunting increases with age, exceeding 44 percent for children between the ages of 36 and 48 months (Figure 87). In Kigali City, higher levels of stunting for children 24 to 35 months old have been observed. This might be a consequence of changes in childcare and specifically in urban areas where children from 2 years old are placed in kindergarten or supervised by relatives while parents work. It may also be a consequence of the global COVID-19 context over the last 12 months which has hinders nutrient intake during the child's complementary feeding period.

Figure 86: Prevalence of stunting for children aged 6 to 59 months, by sex and by age group



[25] Drivers of a high prevalence of stunting among boys in Rwanda, V Munyankaka et al, 2020. This study suggests that underlying factors such as water, sanitation and hygiene my be important in determining the risk of high stunting among boys compared to girls.

Figure 87: 6-59M child global stunting by age and by province



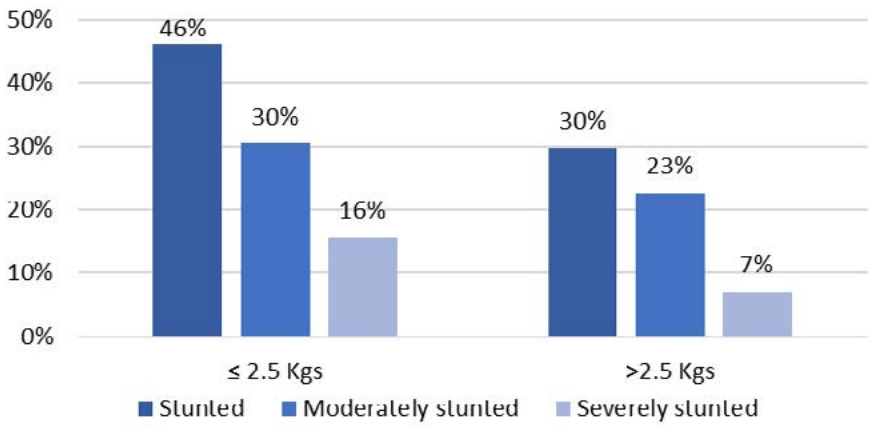
	Kigali City	South	West	North	East	Rwanda
6-11	11%	24%	22%	30%	22%	22%
12-23	12%	32%	37%	42%	29%	32%
24-35	21%	38%	41%	42%	31%	36%
36-47	13%	33%	44%	41%	28%	34%
48-59	17%	34%	38%	31%	26%	31%
6-59 Months	15%	33%	38%	38%	28%	32%

11.3. Contributing factors to 6-59M child stunting

11.3.1. Size at birth

Children born with a small weight at birth are more likely to be stunted. Inadequate nutrient intake during the first 1,000 days starting from conception may hamper child growth. Around 13 percent of children under five years of age were born with less than 2.5 kilograms and almost half of them (46%) are stunted (Figure 88).

Figure 88: Percentage of 6-59M stunted children by weight at birth

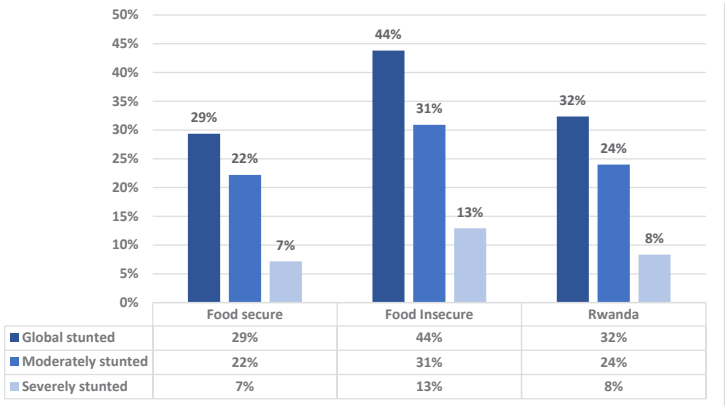


11.3.2. Household's food security

Many studies have shown that household food security is, among others, a contributing factor for child malnutrition. It is confirmed in this study where the largest proportion of stunted children is found in food-insecure households (44%) compared to food-secure households (29%) (Figure 89).

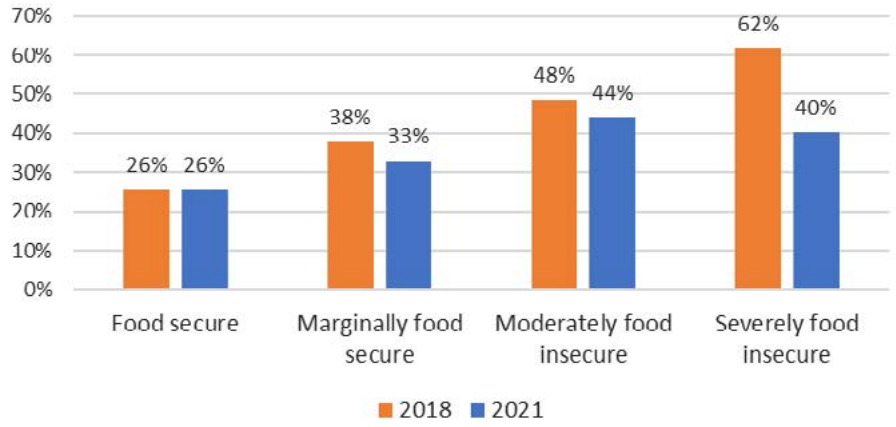
Household food insecurity may directly impact child food consumption mostly in rural areas. Looking at the repartition of all stunted children aged 6-59 months, 73 percent live in food-secure households and 27 percent in food-insecure ones.

Figure 89: Proportion of 6-59M child stunting by household food security status



Stunting prevalence has globally decreased from 34.9 percent to 32.4 percent in 2018 however the proportion of stunted children has significantly reduced in the severely food insecure households moving from 62 percent to 40 percent of stunted children (Figure 90).

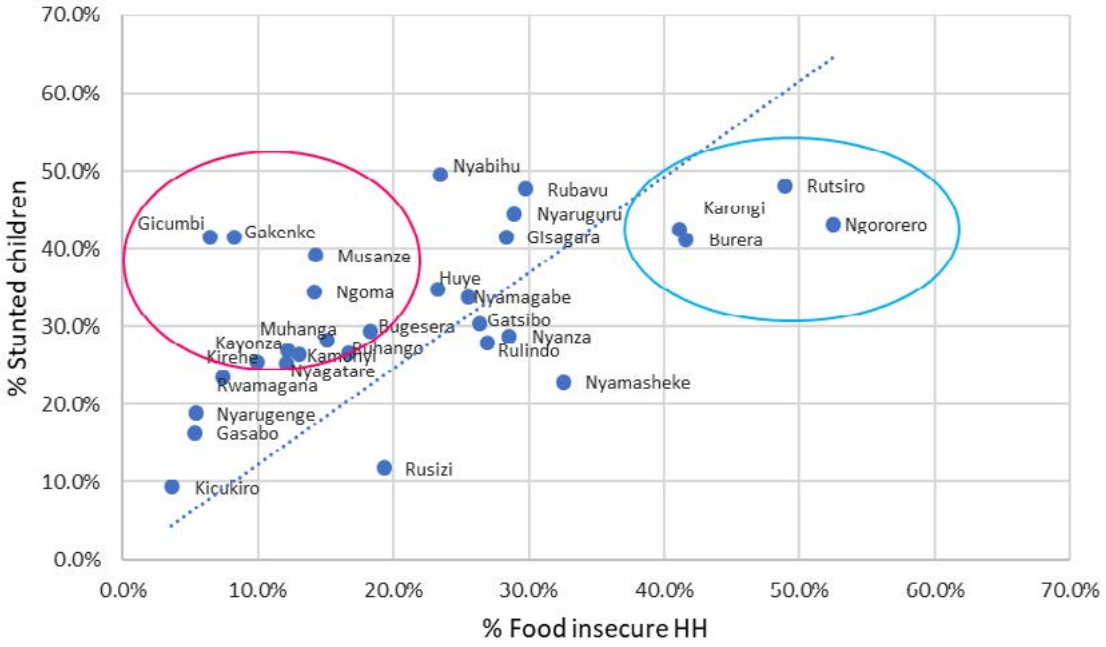
Figure 90: 6-59M child stunting by household food security status in 2018 and 2021



At the national level, the prevalence of child stunting (32.4%) is higher than the prevalence of household food insecurity (20.6%). However, it takes more time to reduce stunting than food insecurity. Figure 91 below shows the prevalence of 6-59 months' child stunting and household food insecurity for each district.

Above the diagonal, the prevalence of child stunting is higher than the prevalence of a household's food insecurity. The blue circle shows the districts where stunted children live in very high food insecure households. For those districts, improved household food security will contribute to reducing child stunting. The red circle shows the districts where stunted children live in food-secure households. For those districts, interventions should focus on specific child nutrient intake (supplementary feeding) and childcare (sickness).

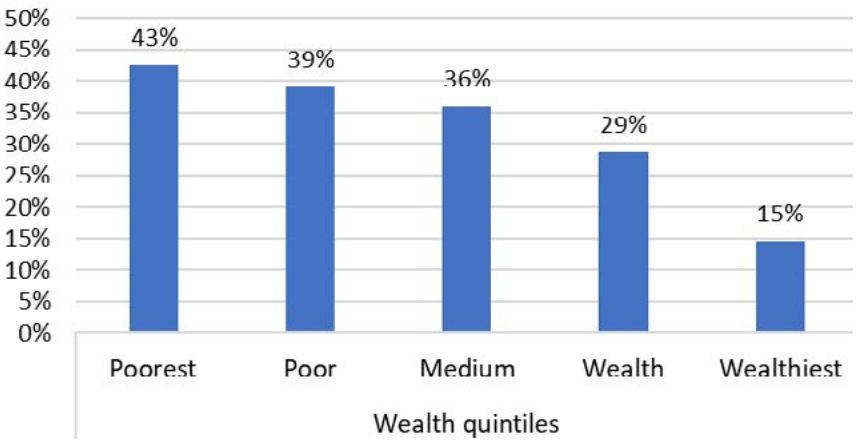
Figure 91: Convergence of 6-59M child stunting and household food insecurity by district



11.3.3. Household's poverty level

A correlation exists between a household's poverty level and 6-59 month old stunting. The assessment found that 15 percent of children in the wealthiest household quintile are stunted and around 3 times more (43%) in the poorest quintiles are stunted (Figure 92).

Figure 92: 6-59M child stunting by household's wealth quintile

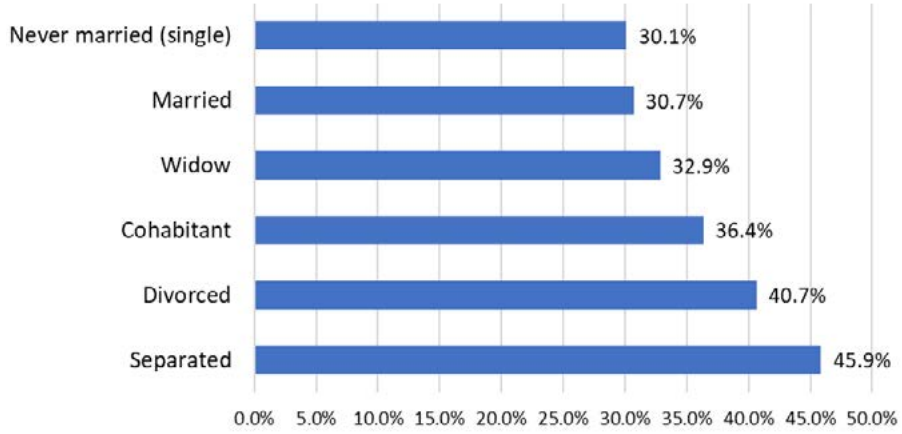


No significant correlation was found between child stunting and household's Ubudehe category or the size of the households.

11.3.4. Household's head marital status

A child growing in a single-parent household with a separated or a divorced mother is more likely to be stunted. This might be attributed to the unstable situation of the household which can lead to compromised childcare or child psychological difficulties related to the parents' divorce or separation. A lower child stunting prevalence was observed when the mother is a widow rather than separated or divorced (Figure 93).

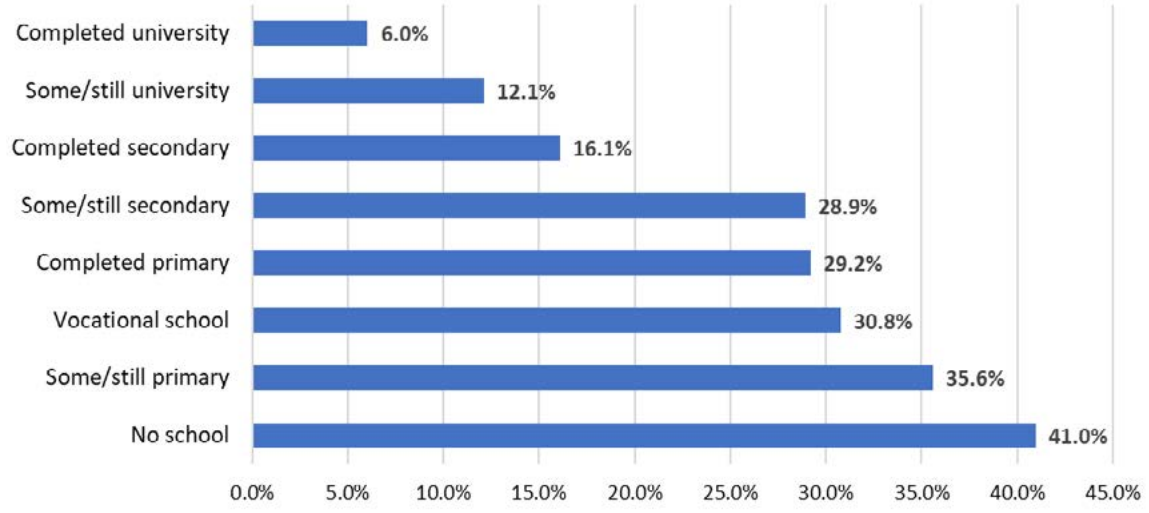
Figure 93: 6-59M child stunting by mother's marital status



11.3.5. Mother's education level

Although there is no statistically significant correlation between a mother's education level and child stunting, it is observed that the prevalence of stunting decreases with a mother's higher education. When a mother has no literacy, 40 percent of the children are stunted compared to 30 percent when the mother finished primary school. The prevalence of stunting also drops when the mother has completed secondary school (16%) or university (6%) (Figure 94).

Figure 94: 6-59M child stunting by mother's education level



11.4. Child wasting

Child wasting or acute malnutrition was observed in the children 6-59 months' old living in the sampled households. Moderate and severe acute malnutrition (MAM and SAM) were detected.

MAM was diagnosed by:

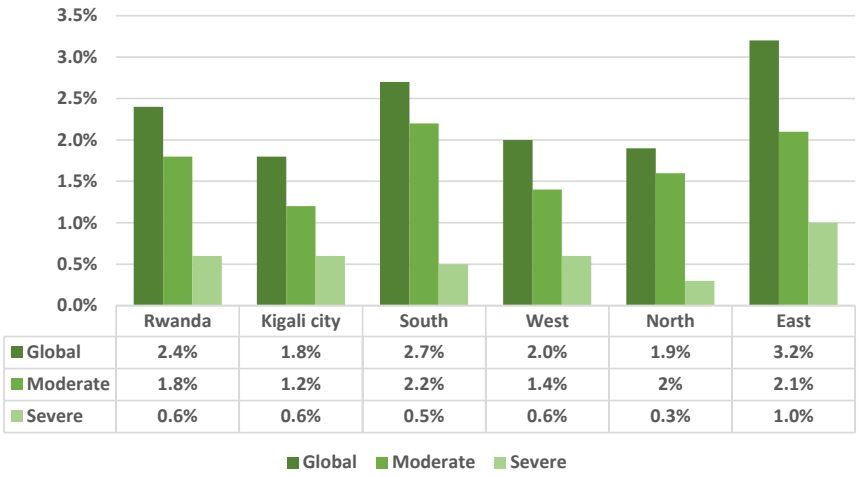
- Absence of bilateral pitting oedema and
- 115 mm ≤ MUAC <125 mm and/or
- -3 ZD ≤Weight for Height <-2 ZD

SAM for children 6-59 months was diagnosed by:

- Presence of bilateral pitting oedema and/or
- Weight for Height < -3 ZD and/or
- MUAC < 115 mm

Wasting in children 6-59 months old reaches 2.4 percent at the national level including 1.8 percent of MAM and 0.6 of SAM. While the prevalence of global wasted children is the highest in the Western Province (2.7%), severe wasting is proportionally more prevalent in the Western Province (0.6%) and Kigali City (0.6%) (Figure 95).

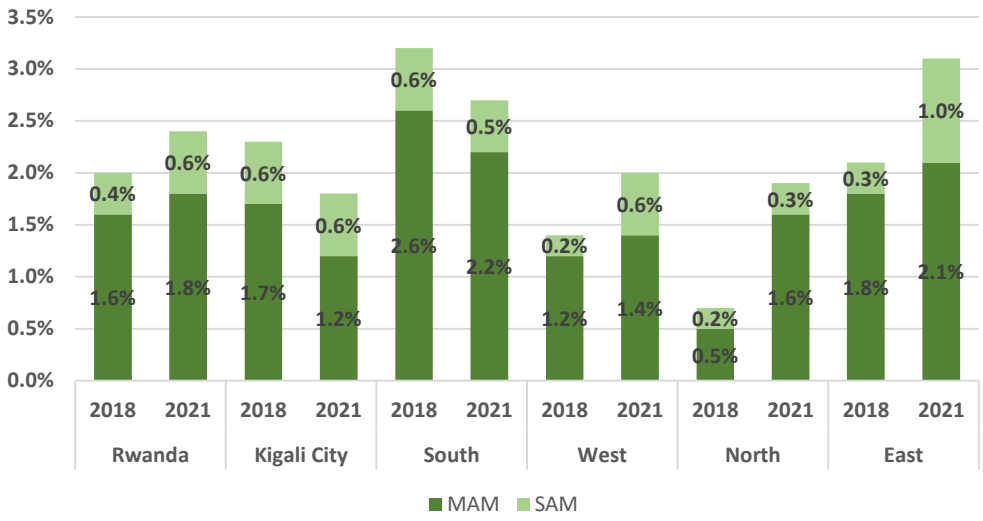
Figure 95: Global, moderate and severe wasting in children 6-59M in 2021 by Province



	Rwanda	Kigali city	South	West	North	East
Global	2.4%	1.8%	2.7%	2.0%	1.9%	3.2%
Moderate	1.8%	1.2%	2.2%	1.4%	2%	2.1%
Severe	0.6%	0.6%	0.5%	0.6%	0.3%	1.0%

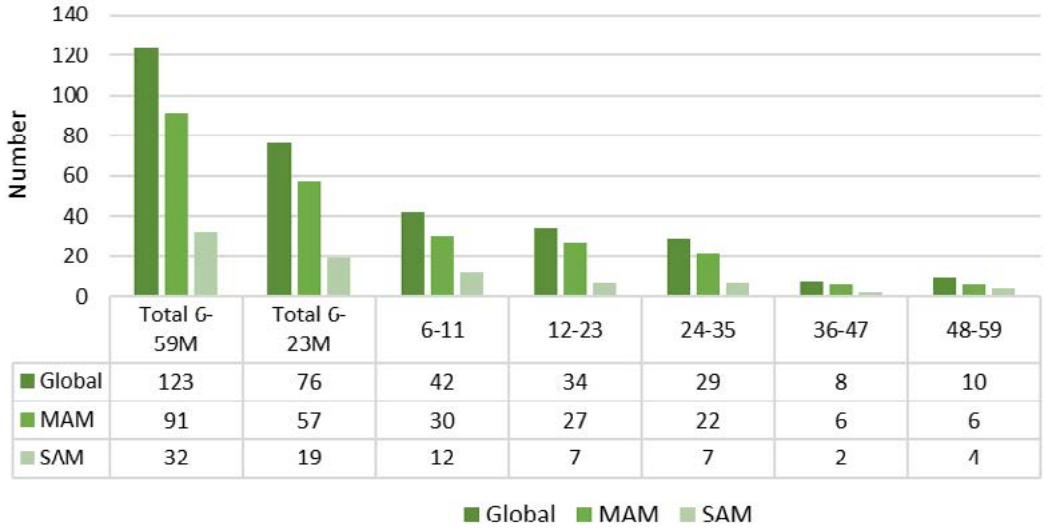
Looking at the trends, moderate and severe acute malnutrition globally increased by 0.4 percent since 2018 but strongly in the Northern (+1.2%), Eastern (+1.0%) and Western Provinces (+0.6%). Severe acute malnutrition highly increased in the Eastern Province (+0.7%) (Figure 96).

Figure 96: Wasting in 6-59M children in 2018 and 2021 by Province



In terms of effectiveness, 123 children 6-59 months of age were detected with acute malnutrition at the time of the survey. Among them, 91 children were moderately acutely malnourished (1.8%) and 32 were severely acute malnourished (0.6%). Of the children aged 6-23 months, there were 57 MAM and 19 SAM cases detected (Figure 97).

Figure 97: Number of children diagnosed with moderate or severe acute malnutrition at the time of survey by age



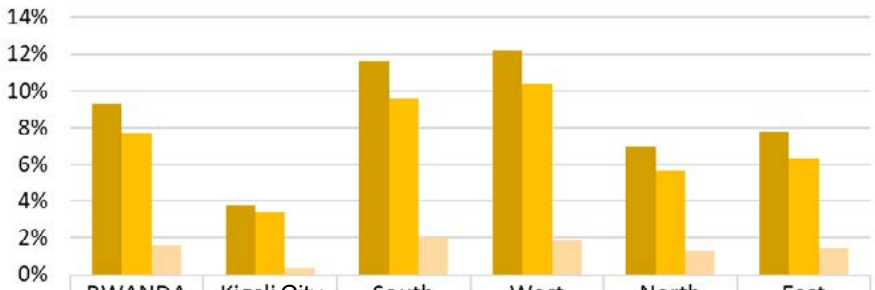
	Total 6-59M	Total 6-23M	6-11	12-23	24-35	36-47	48-59
Global	123	76	42	34	29	8	10
MAM	91	57	30	27	22	6	6
SAM	32	19	12	7	7	2	4

A food consumption module in the questionnaire was specifically designed for children 6-23 months. In this section, some questions were asked about child supplementary feeding and/or involvement in specific feeding programmes. Among the 19 children 6-23 months of age diagnosed with severe acute malnutrition (SAM), one child ate RUTF in the past 24 hours, 7 children were involved in the Shisha Kibondo programme and 2 children were enrolled in a therapeutic programme. Among the 57 children aged 6-23 months diagnosed with moderate acute malnutrition (MAM), 10 were involved in the Shisha Kibondo programme and 18 in a therapeutic programme.

11.5. Child underweight

Percentage of underweight children 6-59 months reached 9.3 percent at the national level with 7.7 percent of moderate and 1.6 percent of severe cases. Prevalence of underweight children is more spread in the Western (12.2%) and Southern Provinces (11.6%). Globally, underweight decreased since 2018 by 4 percent (from 12.6% in 2018 to 9.3% in 2021) and in particular in the Northern Province (from 11.8% to 7%) and Kigali City (from 8.1% to 3.8%) (Figure 98).

Figure 98: Global, moderate and severe underweight in children 6-59M in 2021 by province



	RWANDA	Kigali City	South	West	North	East
Global	9.3%	3.8%	11.6%	12.2%	7.0%	7.8%
Moderate	7.7%	3.4%	9.6%	10.4%	5.7%	6.3%
Severe	1.6%	0.4%	2.0%	1.8%	1.3%	1.5%

11.6. Food consumption in 6-23 months aged children

11.6.1. Breastfeeding

All the children (100%) under six months were breastfed. Nationally, 90.5 percent of children under six months of age were exclusively breastfed (86.8 % for children living in urban areas and 91% for rural areas) (Figure 99). Some children (2.3%) below 6 months of age received infant formula, animal fresh milk, or yogurt in the past 24 hours.

Almost all the children (96%) were breastfed within 24 hours after birth; 83.3 percent of children received colostrum within one hour, 12.5 percent within 23 hours, while only 3.2 percent after 24 hours. Around 96.9 percent of children from 6 to 12 months and 88.9 percent from 12 to 23 months were still breastfed (Table 19).

Figure 99: Exclusive breastfeeding under 6M and continued breastfeeding 6-23M

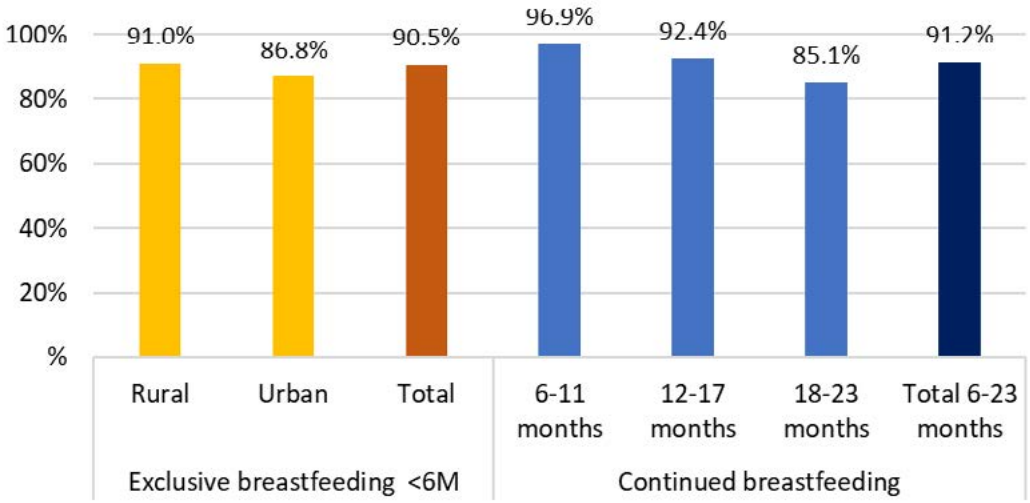


Table 19: Infant and young child feeding: breastfeeding indicators

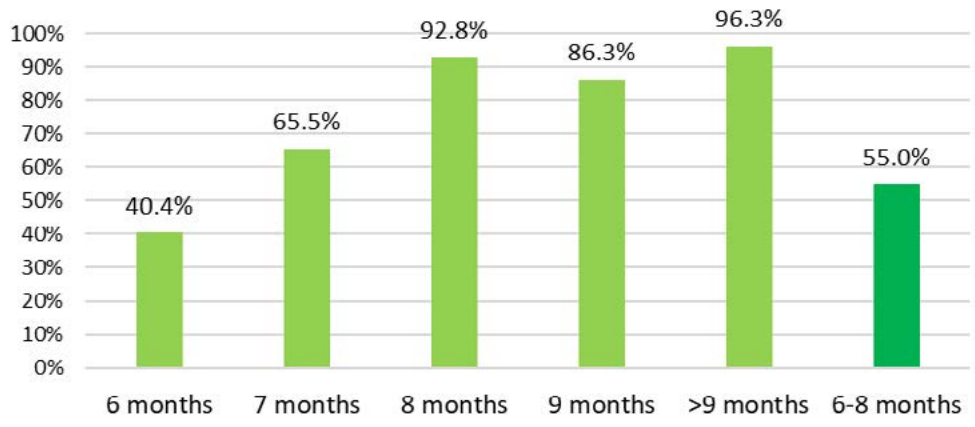
Breastfeeding indicators		2018	2021
Ever Breastfed	EvBF	98%	100%
Early initiation of breastfeeding	EIBF	76%	83%
Exclusive breastfeeding under six months	EBF	82%	91%
Mixed milk feeding under six months	MixMF		2%
Continued breastfeeding 12–23 months	CBF	86%	89%

11.6.2. Introduction to soft and solid food

Around the age of 6 months, an infant's need for energy and nutrients starts to exceed what is provided by breast milk, and complementary foods are necessary to meet those needs. An infant of this age is also developmentally ready for other foods. If complementary foods are not introduced around the age of 6 months, or if they are given inappropriately, an infant's growth may falter.

Only 40 percent of children aged 6 months and 55 percent of children between 6 months and 8 months had been introduced to solid, semi-solid or soft foods. The prevalence reaches 93 percent when children are 8 months of age (Figure 100). A late complementary food introduction is observed, which could compromise an adequate nutrient intake for growing children.

Figure 100: Introduction to soft and solid food for children above 6M



In general, children from 6 to 8 months eat one meal a day, while children from 9 to 11 months received 2 meals a day and children between 12 to 23 months got 2 to 3 meals a day.

11.6.3. Food consumption for 6-23M children

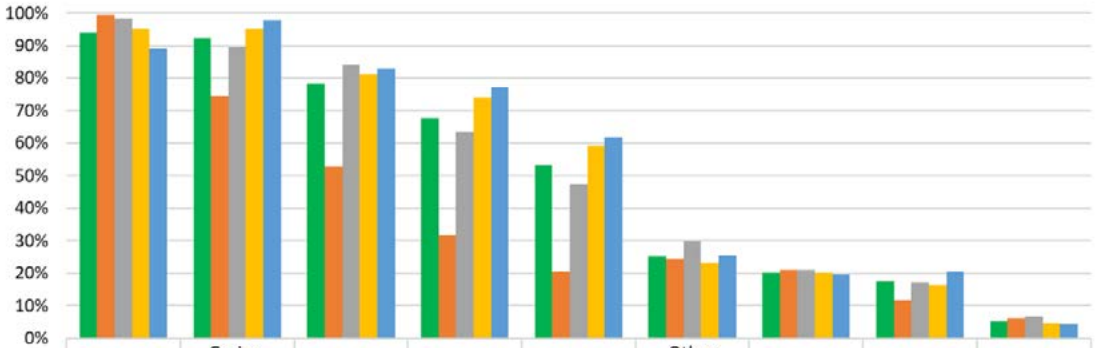
For children aged 6 to 23 months, the caretaker was asked which food group the child had consumed in the 24 hours before the survey. The most common food items consumed by children 6-23 months come from the following food groups: breast milk; grains, roots and tubers; vitamin A-rich food and pulses and fats. Consumption of protein-rich food groups remains low. 68 percent of children 6-23 months consumed pulses and nuts, 20 percent dairy products, 17 percent flesh food and only 5 percent eggs (Figure 101).

For dairy products, 15 percent of 6-23 month's children consumed milk, 4 percent yogurt and 2 percent infant formula 24 hours before the survey. Milk and infant formula are consumed between two and three times a day.

The consumption of flesh food for 6-23 months' children decreased by 50 percent since 2018 (from 34% to 17%). Meat and organ meat were only consumed by 2 percent of children. Most of the flesh food consumed is fresh or dried fish. Nonetheless, more children consumed vitamin A-rich food since 2018 (Figure 102).

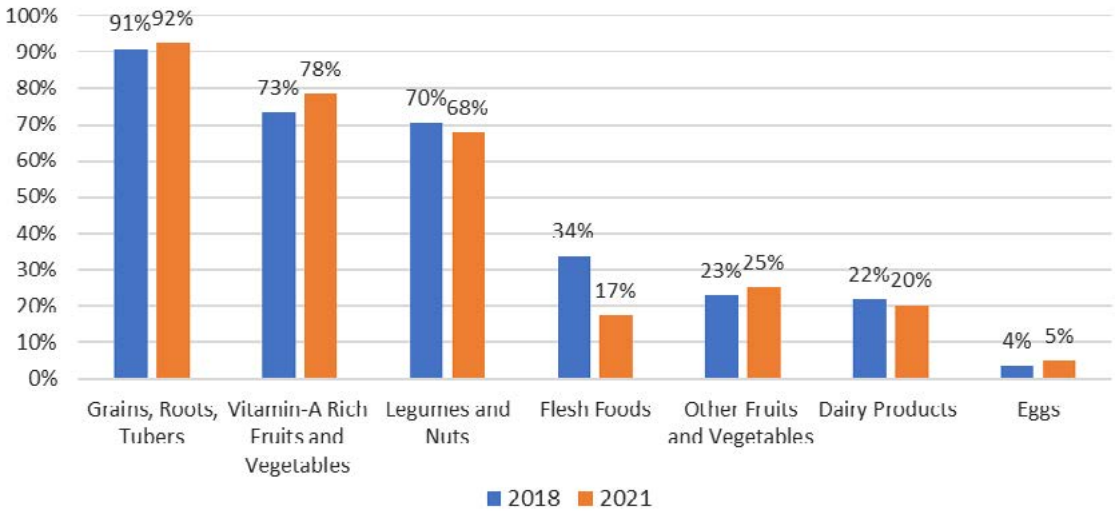
Inadequate dietary intake is one of the two immediate causes of malnutrition with unsatisfactory health. There is evidence that children who consume eggs and flesh foods have higher intakes of various nutrients important for optimal linear growth. CFSVA 2021 findings show that children who consume flesh food or eggs are less stunted (27%) than children who do not (30%).

Figure 101: Percentage of children 6-23M consuming each food groups in the past 24 hours, by age



	Breast Milk	Grains, roots, tubers	Vitamin-A rich foods	Legumes and nuts	Fats, oils	Other vegetables and fruits	Dairy products	Flesh food	Eggs
Overall 6-23M	94%	92%	78%	68%	53%	25%	20%	17%	5%
6-8M	99%	74%	53%	32%	21%	24%	21%	12%	6%
9-11M	98%	90%	84%	63%	47%	30%	21%	17%	7%
12-17M	95%	95%	81%	74%	59%	23%	20%	16%	5%
18-23M	89%	98%	83%	77%	62%	26%	20%	21%	4%

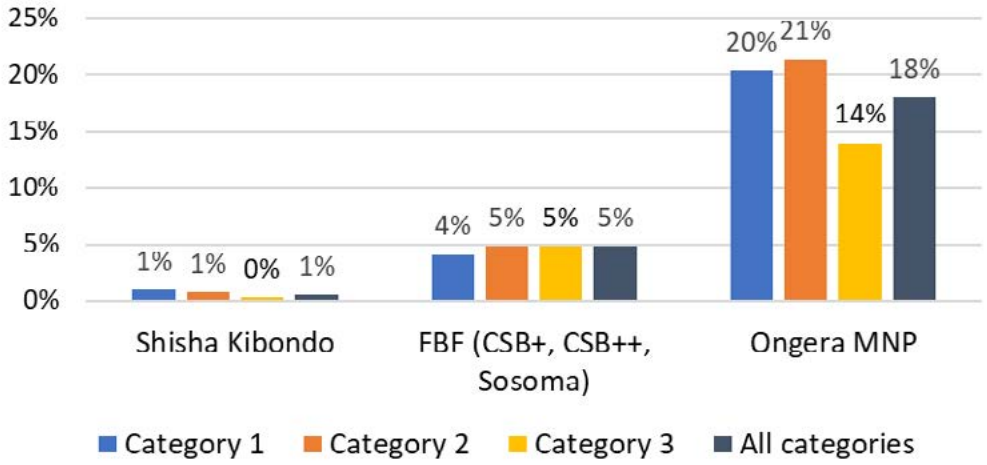
Figure 102: 6-23M child food groups consumption in 2018 and 2021



11.6.4. Consumption of specialized nutritious food

Around 25 percent of children 6-23 months consumed fortified food in the past 24 hours before the survey. They mostly consumed micronutrient powder (ongera) that is mixed with porridge or other food (18%). Some (5%) consumed fortified blended food (like sosoma, CSB+, CSB++) which are made of cereals, milk powder, sugar, oil, vitamins and minerals (Figure 103). Few consume Shisha Kibondo flour which is a national product made of fortified flour enriched with nutrients. Shisha Kibondo is provided by the government to pregnant mothers and children whose families are classified in the first and second Ubudehe to help them combat stunting.

Figure 103: Percentage of 6-23M children who consumed fortified blended food in the past 24h



11.6.5. Minimum acceptable diet

Based on the diversity and frequency of food consumed among children aged 6-23 months, the minimum dietary diversity (MDD), minimum meal frequency (MMF and minimum acceptable diet (MAD) were calculated. A new approach for calculating the minimum acceptable diet (MAD) has been proposed in 2021 which includes breast milk as a separate food group, thereby increasing the total number of food groups from seven to eight and increasing the cut-off from four to five groups.

To allow a comparison with the result from 2018 CFSVA, the "old" approach was used. However, the prevalence was also calculated with the "new" approach as an indication for future studies.

The results showed that 19.5 percent of children 6 to 23 months meet all the requirements for a minimum acceptable diet, 32.8 percent reach the minimum meal frequency and 42.3 percent obtain the minimum dietary diversity of the four food groups consumed. With the "new" approach the Minimum Diet Diversity which requested the consumption of five food groups reaches 33.1 percent which reduced the Minimum Acceptable Diet to 15.8 percent. (Figure 104). Around 90 percent of stunted children aged between 6 to 23 months do not meet the minimum acceptable diet.

CHILD DIET INDICATOR THRESHOLDS

Minimum dietary diversity (MDD):

Consumption of four or more foods and beverages out of seven defined groups during the previous day*.

Minimum meal frequency (MMF):

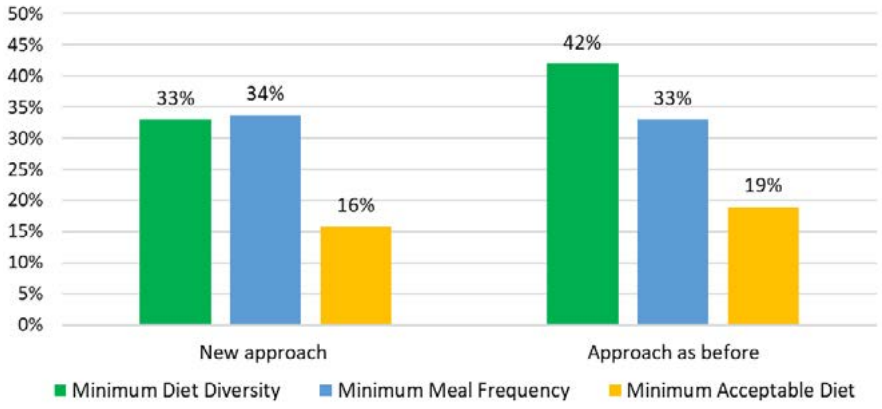
For breastfed children 2 meals a day for 6–8 months old, 3 meals a day for 9–23 months. For non-breastfed children, 4 meals a day for 6–23 months old.

Minimum acceptable diet (MAD):

Meeting the requirements for both minimum acceptable diet and minimum meal frequency.

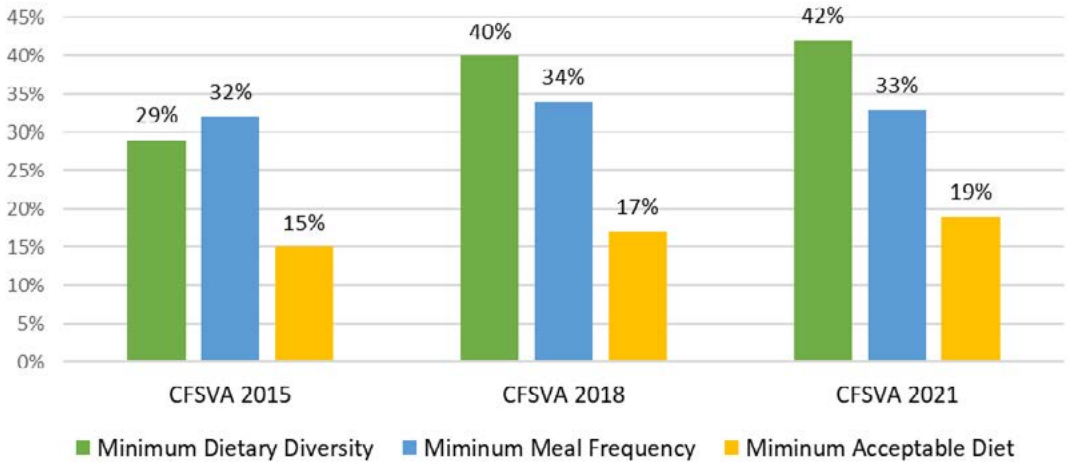
*with the new approach, breast milk is the eighth group. Five food groups are requested for MDD.

Figure 104: Minimum Diet Diversity, Minimum Meal Frequency and Minimum Acceptable Diet in 2021 following "old" and "new" IYCF approaches



Compared to 2018, the percentage of households that meet the minimum dietary diversity improved by 9 percent while the meal frequency did not change significantly. This increased the percentage of households reaching the minimum acceptable diet by 2.5 percent (from 17 to 19.5%) (Figure 105).

Figure 105: Trends in Minimum Dietary Diversity, Minimum Meal Frequency and Minimum Acceptable Diet in 2015, 2018 and 2021



The period from 6 to 8 months corresponds to the introduction of complementary food but only 38 percent of children received the required minimum of 2 meals a day for this age. Figure 106 presents the trends of MDD, MMF and MAD by child's age. The diversity of the diet improved as the child grows but the frequency of meals for most of the children remains below standard.

Figure 106: Minimum Dietary Diversity, Minimum Meal Frequency and Minimum Acceptable Diet in 2021 by age

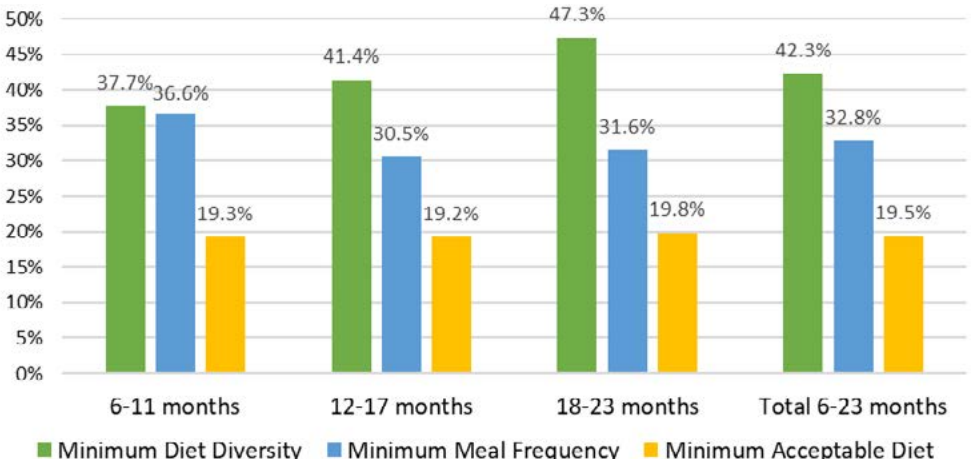


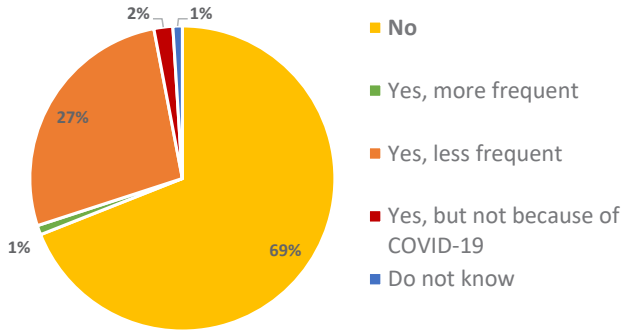
Table 20 : Infant and young child feeding: complementary feeding indicators

Complementary feeding indicators		2018	2021
Introduction of solid, semisolid or soft foods 6–8 months	ISSSF	49%	55%
Minimum dietary diversity 6–23 months	MDD	40%	42%
Minimum meal frequency 6–23 months	MMF	34%	33%
Minimum acceptable diet 6–23 months	MAD	17%	19%
Egg and/or flesh food consumption 6–23 months	EFF	38%	21%
Zero vegetable or fruit consumption 6–23 months	ZVF		18%

11.6.6. Impact of COVID-19 on children food consumption

The mothers and caretakers were asked if there was a change in child food consumption due to the COVID-19 outbreak. 30 percent of respondents reported a general decrease in child food consumption and 27 percent pointed out that children were less frequently during this period (Figure 107).

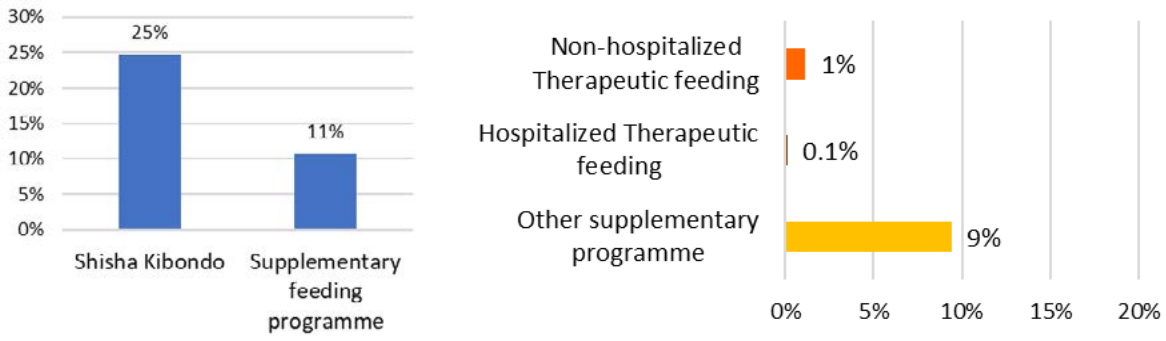
Figure 107: Change in 6-23M child food consumption due to COVID-19 outbreak



11.6.7. Supplementary feeding programme for children 6-23 months

One fourth of children 6-23 months are involved in Shisha Kibondo programme and 11 percent in therapeutic feeding programmes out of which 0.1 percent was committed in hospitalized therapeutic feeding programme, 1 percent in non- hospitalized therapeutic programme and 9 percent in another supplementary feeding programmes (Figure 108). Fewer stunted children aged 6-23 months were encountered among those who consumed Shisha Kibondo in the past 24 hours (14% of moderate stunting) compared to those who did not (32% of stunted whose 8% severely).

Figure 108: Percentage of 6-23M children involved in supplementary or therapeutic feeding programme



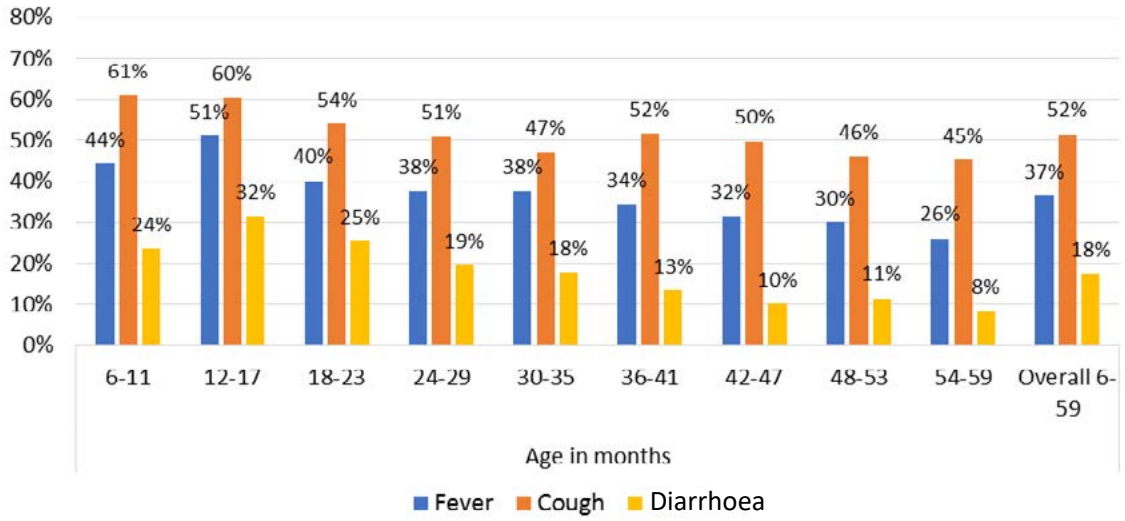
Around 1.3 percent of households reported having received fortified blended food for pregnant/breastfeeding women and small children through the Maternal and Child Health and Nutrition (MCHN) programme support. This support lasts from one month up to two years on average. Food assistance was provided to households in Gakenke, Rubavu, Huye, and Bugesera. At the time of the survey, 82 percent of these households were food secure (10% in Ubudehe category 1, 35% in categoy 2, 52% in category 3 and 1% category 4).

11.7. 6-59 months' child morbidity and disease prevention

11.7.1. Child illness

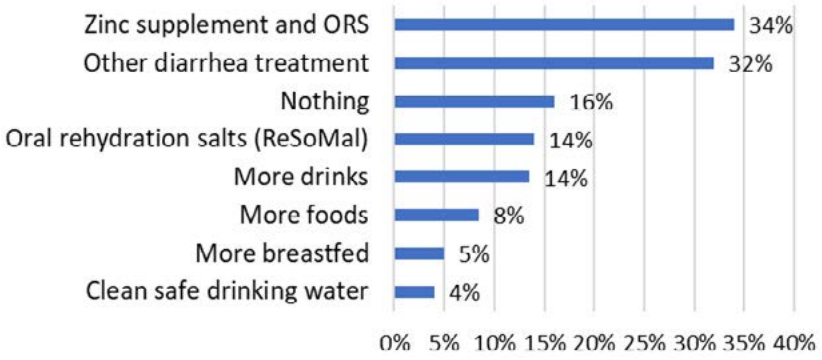
Mothers or caretakers were asked if the child aged between 6 and 59 months had been sick during the last two weeks before the survey. According to them, around 53 percent of children 6 to 59 months were sick; 52 percent suffered from coughing, 37 percent from fever, and 18 percent from diarrhoea. Children aged 12 to 17 months were more likely to be ill, probably related to a reduction of breastfeeding while children 6-23 months suffered more from diarrhoea. (Figure 109). The perception of child illness might differ due to the household's education level. The highest prevalence of diarrhoea in children during the last 2 weeks prior to the survey was in Gicumbi and Rutsiro (7%).

Figure 109: Percentage of children 6-59 months reported suffering from fever, cough or diarrhoea during the last 2 weeks before the survey by age



According to caretakers, 16 percent of children with diarrhoea received no treatment while 34 percent received oral rehydration salts (ORS) with a zinc supplement, 14 percent received a home-made or packaged oral rehydration salt (ORS), 14 percent were encouraged to drink more and 32 percent received other diarrhoea treatments (Figure 110).

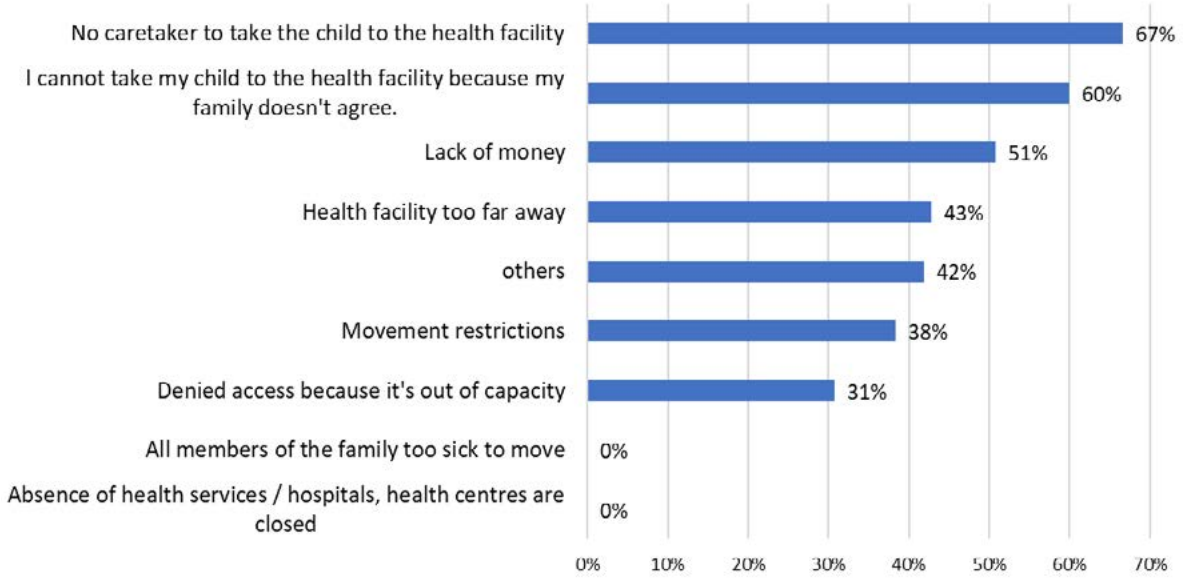
Figure 110: Treatment given to 6-59M child suffering from diarrhoea (as reported by child caretakers)



11.7.2. Access to health care providers

Almost 32 percent did not see a healthcare provider while ill in the past two weeks before the survey, while 49 percent were examined by staff at a health facility, 7 percent by a community health worker, 4 percent by staff in a private hospital and 8 percent by a traditional care provider. Mothers were asked why they did not see a healthcare provider when the child was sick. The main reasons were: 'no-one to take the child to the health facility (67%), 'because the family disagrees' (60%) or because of a 'lack of money (51%). COVID-19 movement restrictions and overload capacity of the health centre were also reported but less frequently (38% and 30% respectively) (Figure 111).

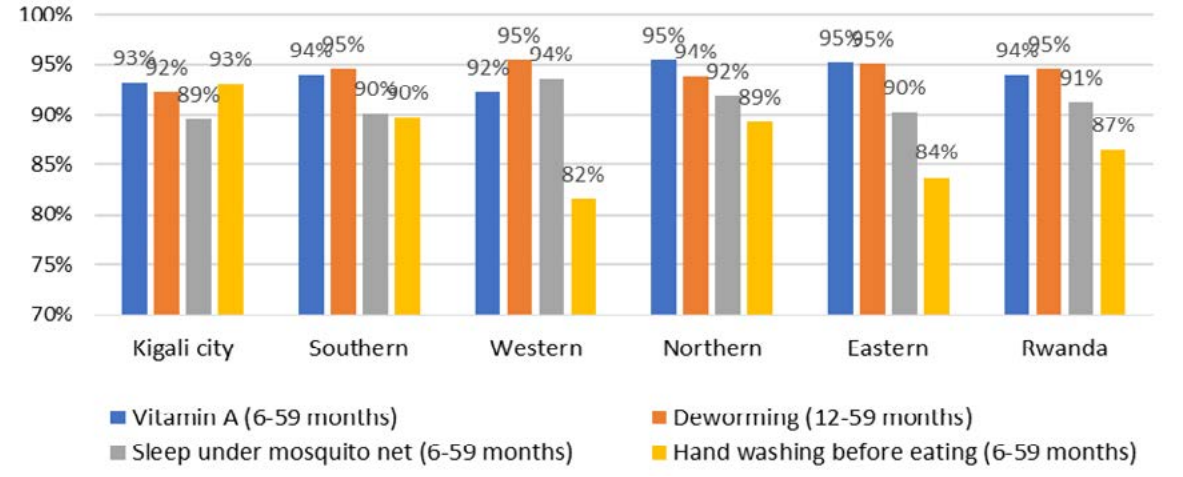
Figure 111: Reasons for not seeing a healthcare provider



11.7.3. Disease prevention

In terms of disease prevention, a large majority of children 6 to 59 months received deworming treatment (95%) and vitamin A supplementation (94%) during the last 6 months before the survey. According to caretakers, 87 percent of children under 5 sleep under a mosquito net (less in Western and Southern Provinces) and 94 percent wash their hands before eating (Figure 112). A lower prevalence of diarrhoea was observed in children who reported washing their hands before eating, especially for children aged from 24 to 59 months.

Figure 112: Percentage of 6-59M children who received disease prevention care



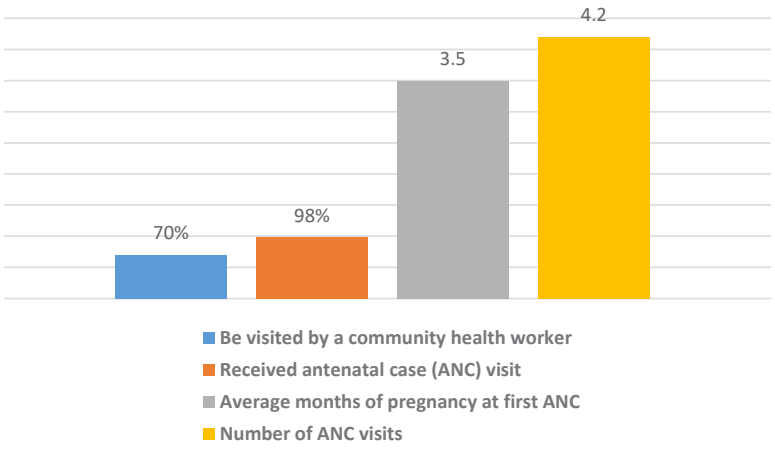
11.8. Women's nutritional status

11.8.1. Pregnancy, antenatal care and contraception

From the 5,757 women aged 15-49 years surveyed, 70 percent had given birth at least once, 7 percent of women were currently pregnant, and 41 percent were lactating at the time of the survey.

During their last pregnancy, 70 percent of women were visited by a community health worker and 98 percent of women received antenatal care from public (97%) or private health facilities (3%). On average , women had their first antenatal care visit at 3.6 months; with 4.2 visits as recommended by WHO (Figure 113). All pregnant women reported that the COVID-19 outbreak did not interrupt their antenatal care visits.

Figure 113: Antenatal Care Visits during last pregnancy



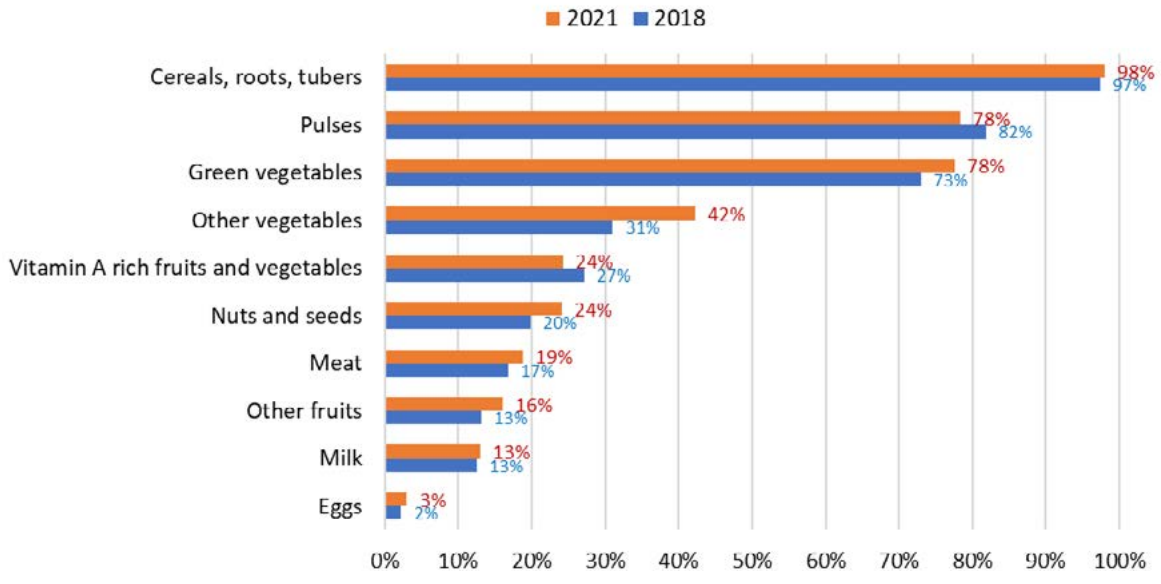
80 percent of women took iron supplementation during pregnancy but only one-third (31%) during the whole first trimester (90 pills). After the child's birth, 39 percent of women received a vitamin A supplementation during the first six weeks.

Around half of the women sampled used contraception. The most common methods used were implants (46%), injectables (33%) or pills (11%). No significant difference was found between the use of contraceptive methods and the education level of the women.

11.8.2. Women food consumption

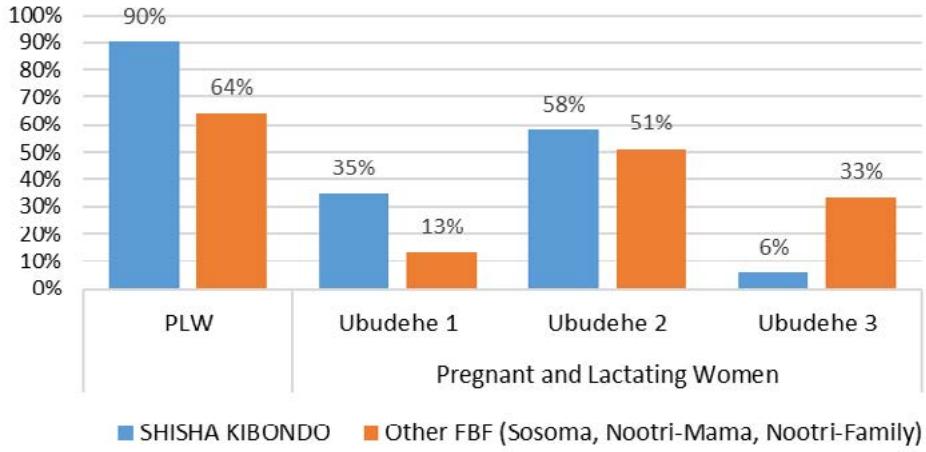
With a recall period of 24 hours, the food groups most commonly consumed by women were starches, pulses and green vegetables. Only one woman out of four (24 percent) ate Vitamin A-rich food, one out of five (19 percent) heme iron food groups like meat. Other animal food sources were less consumed such as milk (13%) and eggs (3%) (Figure 114). Compared to 2018, women consumed a bit less pulses but more vegetables, nuts, milk and meat.

Figure 114: Percentage of women consuming different food groups in the past 24 hour prior to survey in 2018 and 2021



Around 90 percent of pregnant and lactating women consumed the fortified blended flour called Shisha Kibondo while 64 percent of pregnant and lactating women consumed other types of fortified blended foods in the past 24 hours. Most of those PLWs who consumed Shisha Kibondo were in Ubudehe 1 or 2 (Figure 115). Related to nutritional education, 66 percent of pregnant and lactating women at the time of the survey reported having received counselling on nutrition (55% for all 15-49 women) and which was mainly provided by health care workers and facilitators.

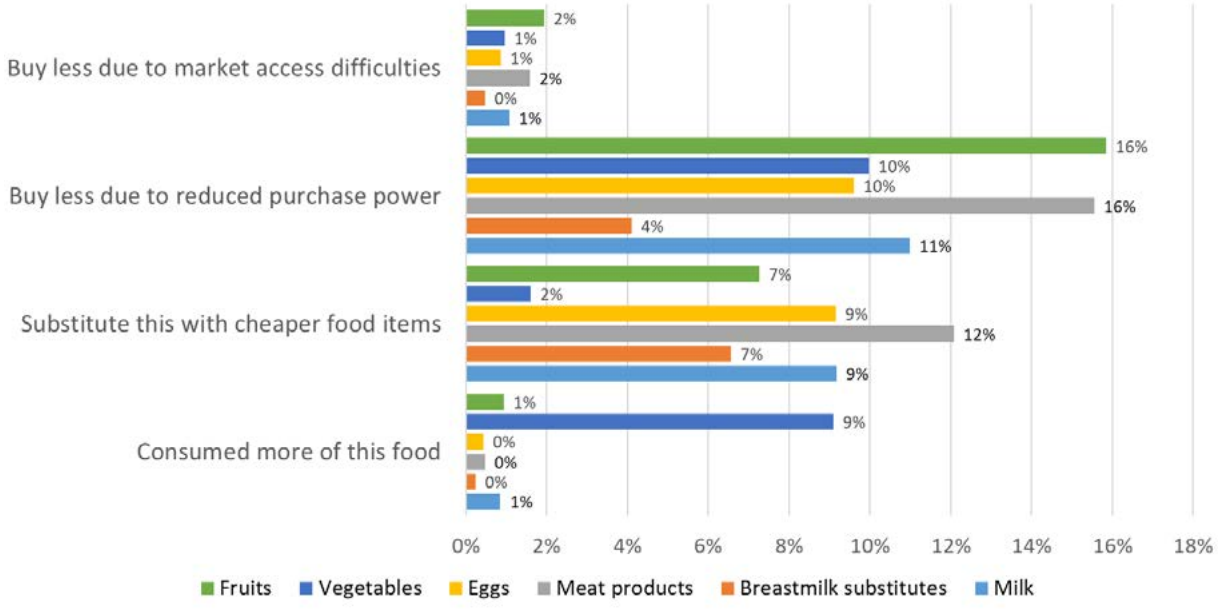
Figure 115: Percentage of PLW who consumed fortified blended food



11.8.3. Impact of COVID-19 on women food access

One woman out of two reported a change (mostly decreases) in purchasing food because of the COVID-19 pandemic and/or its effects. The proportion was higher in the Western Province (71%) and in urban areas (54%) (Figure 116). The main reason for buying less food was a decrease in purchasing power or the substitution by cheaper food items. This is especially true for meat, eggs, and fruits. Some women said they ate more vegetables during the recall period of the survey.

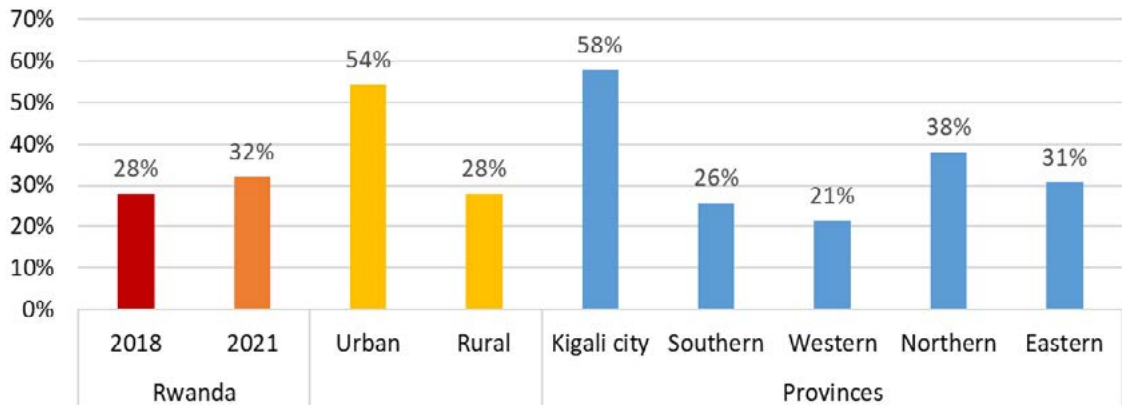
Figure 116: Percentage of women reporting change in food consumption due to COVID-19 outbreak



11.8.4. Women Minimum Diet Diversity

In 2021, 32 percent of women 15-49 years old met the minimum diet diversity for women (MDD-W), which corresponds to the consumption of five food groups. Most women consumed three food groups (28%) or four food groups (24%). The proportion of women reaching the MDD-W is higher in an urban area (54%) than in rural areas (28%). Besides the City of Kigali, the Northern Province has the highest level (38%) of women meeting the MDD (Figure 117). The percentage also increased according to household Ubudehe categories (19% for women in Ubudehe 1, 28% for Ubudehe 2 and 38% for Ubudehe 3).

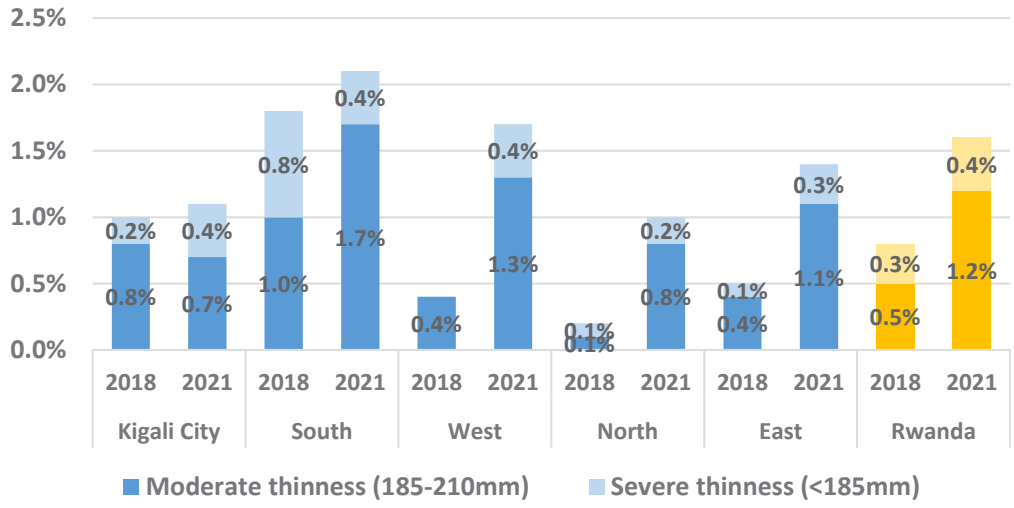
Figure 117: Percentage of women 15-49 years old meeting the minimum diet diversity (MDD-W) by living area



11.8.5. Wasting in 15-49 women

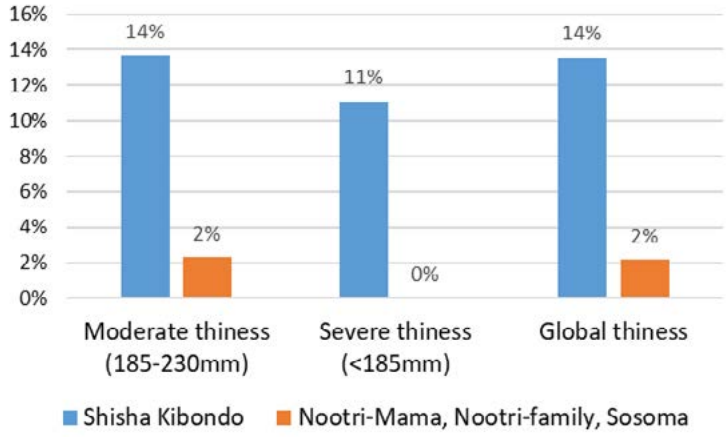
The prevalence of acute malnourished women (wasting) was evaluated through the measurement of the mid-upper arm circumference (MUAC) for 7,951 women between 15 and 49 years of age . Around 1.6 percent of women were detected as wasted (MUAC < 210mm) for which 0.4 percent severely wasted (MUAC < 185mm). The Southern Province presents the higher prevalence (2.1%) of acutely malnourished women. Wasting in women has generally increased in 2021 (1.6%) compared to CFSVA 2018 (0.8%) (Figure 118).

Figure 118: Moderate and severe acute malnutrition in 15-49 Women in 2018 and 2021 (cutoff: 185/210mm)



Around 14 percent of pregnant or lactating women who were detected wasted consumed Shisha Kibondo fortified flour in the past 24 hours. 2 percent of pregnant and lactating women consumed another type of fortified blended food (Figure 119).

Figure 119: Percentage of wasted pregnant and lactating women who consumed fortified blended food in the past 24h



11.8.6. Mother food consumption and child malnutrition

While in 2018, a correlation was established between women minimum diet diversity (MDD-W) and children under 5 minimum acceptable diet (MAD) or child minimum diet diversity (MDD), such a correlation has not been confirmed by CFSVA 2021 analysis. However, approximately 2.1 percent of wasted children have a mother who is also wasted.

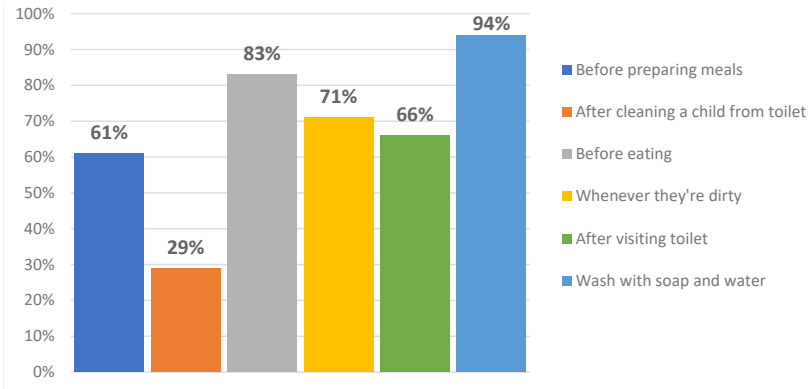
11.9. Women disease prevention

Around 82 percent of women in the sampled households slept under a mosquito net, but this was less prevalent in the Western and Eastern Province (78%).

11.9.1. Hand washing

Women reported washing and cleaning their hands before eating (83%), whenever they are dirty (71%), after visiting toilets (66%), before preparing a meal (61%) but only 29 percent reported after changing a child's nappy. Soap and water are used in 94 percent for hand washing (Figure 120). Almost 95 percent of women reported having enhanced the hygiene practices due to COVID-19 (39% sometimes, 56% all the time).

Figure 120: Periods of the day when women report washing hands

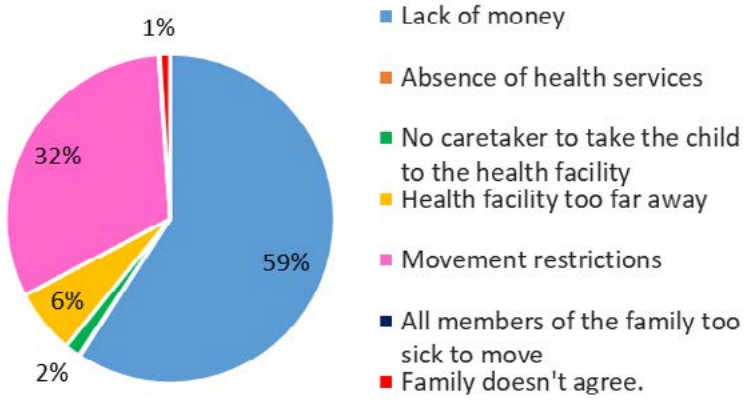


11.9.2. Women health care

During the COVID-19 pandemic, 66 percent of women aged 15 to 49 sought advice or treatment for illness outside the home and mostly in public health facilities (83%) or private clinics (3%).

The main reasons for not seeking health care were the lack of money (59%) or the movement restriction measures (32%) (Figure 121). From household interviews, 89 percent reported that medicines remained available in pharmacies, though COVID-19 measures were effective and health services were functioning as usual or even better than usual.

Figure 121: Main reasons for women not seeking health care during the COVID-19 pandemic



12. SOCIAL PROTECTION

KEY MESSAGES

- 15.6 percent of households benefitted from a VUP component or other social protection programme from the Rwanda Government in the last 12 months.
- 9.2 percent received in-kind food transfers and 9.4 percent received any other non-food support from developing partners or from the household's community.
- Most of the households receiving social protection assistance belong to Ubudehe 1.
- The main provider of social protection and assistance is the Rwandan government, assisted by NGOs for supporting households with non-food items.

This section describes some of the main policies and programmes related to social protection and safety nets that aim to prevent households from falling into poverty, protect the livelihoods of those in poverty, and assist households to emerge from poverty.

12.1. Social protection policy and programmes

According to the updated National Social Protection Policy (2017), social protection helps stabilize assets, incomes and capabilities in the face of a wide range of life cycle, economic and environmental shocks, thereby enabling households to take economic risks, make investments and accumulate wealth over time, including across generations.

In the framework of the **National Strategy for Transformation (2017-2024)**, the Government of Rwanda has built a social protection system that aims to uplift the living standards for vulnerable and poor families and improve social welfare. Rwanda's social protection is structured around four pillars: (i) **Social Security** schemes that are designed to achieve consumption smoothing and ensure a minimum standard of living throughout an individual's life, (ii) **Emergency Assistance** which is temporary or incidental (one-off) cash or in-kind assistance that addresses short-term or temporary risks or deprivations, (iii) **Social Care Services** that provide protection, psycho-social support, referrals and promote social inclusion for the most vulnerable, (iv) **Facilitated linkages to complementary livelihood support services** delivered by other institutions in the social protection sector.

The flagship social protection programme includes the "Vision 2020 Umurenge Programme" (VUP). Other initiatives include Community-Based Health Insurance (CBHI) and in- kind social care services, social protection services provided through the Genocide Survivors Support and Assistance Fund (FARG), the Rwanda Demobilisation and Reintegration Commission (RDRC).

Apart from this, a range of other programmes and services are implemented by other sectors and contribute to poverty reduction and malnutrition. Rwanda's health sector has established several key nutrition support programmes including Fortified Blended Food distribution; the One Cup of Milk per Child Programme; and milk distribution to acute and severely malnourished children. The agricultural sector has also specific programmes like the Girinka programme, agricultural inputs support, livestock and crops insurance among others. The disaster management sector provides short-term assistance to shock- and disaster-affected households. Some of these programmes are described below.

12.1.1. Coordination of social protection programmes

The Ministry of Local Government (MINALOC) leads the social protection sector at the national level. The Social Protection Sector Working Group is a forum for technical level inter-ministerial and inter-agency coordination at the national level. It includes Rwanda agencies as LODA, NRS, NCPD, NCDA, RDRC, but also developing partners, International NGO and local NGOs.

At the district level, the Joint Action Development Forum (JADF), including in the Social Commissions and Social Protection Sub-Commissions, is the key forum for ensuring coordination of government and non-governmental actors in social protection. At the sector level, the sector administration is responsible for coordinating social protection interventions, working through cell and village level structures as necessary.

12.1.2. Vision 2020 Umurenge Program (VUP)

The Vision 2020 Umurenge Programme (VUP) was established in 2008 under the Ministry of Local Government (MINALOC) within the Common Development Fund (CDF). Originally established as a flagship programme within the first Economic Development and Poverty Reduction Strategy (EDPRS), the VUP remains key to the delivery of a range of national targets under the first National Strategy for Transformation (2018-2024) and realisation of Vision 2020 now expanded to Vision 2050.

Recognized as the main social protection programme since 2009, VUP is designed in three components to help provide a safety net for the poor, by providing direct income support to poor households, public works jobs for able-bodied adults, and business-related loans to households that can make use of them.

The **Safety Net component** aims to protect households from the most severe forms of poverty and prevent vulnerable households from falling further into poverty in the event of life cycle, economic or environmental shocks. It includes:

- The **VUP Direct Support** scheme, which is unconditional income support for extremely poor, severely labour-constrained households to ensure that these most vulnerable households are able to meet their most basic needs and protect them from destitution.
- The **Nutrition Sensitive Direct Support** (NSDS) which is income support for extremely poor households containing pregnant women and/or infants at risk of malnutrition. It is planned to cover 17 districts.
- The **Classic Public Works** is short-term employment on labour-intensive Public Works (PW) for labour-endowed households.
- The **Expanded Public Works** (ePW) which is a multi-year, year-round, flexible Public Works to provide accessible and appropriate employment opportunities to moderately labour-constrained, extremely poor households.

According to the social protection policies, the Direct Support and Public Works shall enable the VUP to respond to severe short-term shocks affecting individual households and entire communities.

The **livelihoods enhancement (LE) component** promotes the development of more productive and self-sufficient livelihoods through:

- **Productive assets transfers**;
- **Skills development** through mainly technical vocational trainings;
- **Financial services** like micro-credit, financial education and coaching on a wide range of issues affecting livelihoods, and access to insurance.

The **Sensitization and Public Communications component** provides cross-cutting support to the achievement of programme objectives through the delivery of beneficiary sensitisation and informal mentoring on a range of priority issues such as agricultural livelihoods, health and hygiene, rights and responsibilities.

The coverage of the Direct Support has recently been extended country-wide and scaled up to 30 districts' and 416 sectors. The targeting of VUP beneficiaries is conducted using *Ubudehe* classification described here below. Households classified as the *Ubudehe* categories 1 and 2, the two poorest categories, are, in principle, eligible for Direct Support or Public Works. Households in *Ubudehe* category 3, as well as those in categories 1 and 2, may apply for a Financial Services loan.

12.1.3. *Girinka* programme

This program, managed by MINAGRI, is a home-grown initiative geared at poverty reduction, fighting malnutrition and improving livelihoods by increasing milk consumption and income generation. The Government of Rwanda started the 'One cow per poor family program" or *Girinka* in 2006, whereby a farmer is given an in-calf heifer and is obliged to pass on the first female offspring to another program beneficiary who is selected by local administration authorities and validated by MINAGRI/RAB. This programme aims also to improve agricultural productivity through the use of manure as fertilizers which would lead to improving soil quality and reducing erosion through the planting of grasses and trees.

12.1.4. Community-Based Health Insurance (CBHI)

The Community-Based Health Insurance scheme (CBHI) focuses mostly on people in the non-public sector and aims at providing them equitable access to quality health services.

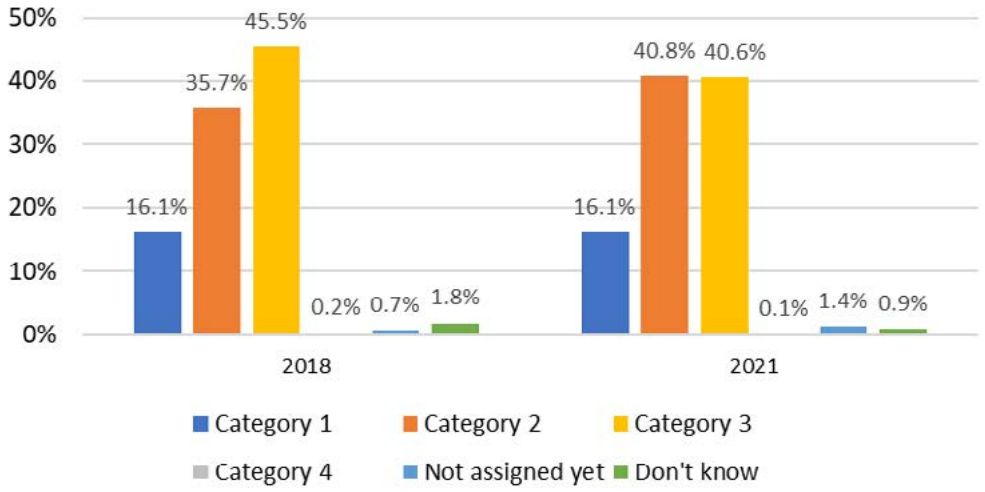
CBHI is coordinated at the district level, where each of the 30 districts of Rwanda hosts a "Fonds de *Mutuelle de Santé*". They are managed by a director appointed by Order of the Minister in Charge of Health. In each health center, there is a CBHI section managed by an administrator. In every village, cell and sector, there is a mobilization committee for CBHI, consisting of members elected by the population for a two-year renewable term. To allow all populations to get access to CBHI, the poorest households (category 1) get subsidies for health insurance.

12.1.5. Ubudehe classification

For targeting of social protection, Rwanda currently uses its home-grown *Ubudehe* system, a community-based system of classifying all households according to their socioeconomic status. Access to key social protection schemes, including the VUP, is determined based on the household's *Ubudehe* category, with households in the lowest category (category 1 under the present system) being eligible for non-contributory social assistance through the VUP and complimentary services. The *Ubudehe* system has undergone many iterations, with reform in 2015 resulting in a four-tier system. In June 2020, the Cabinet approved a new nationwide *Ubudehe* categorization process for the whole population to take place by early 2021. The new categories will be five, based on objective indicators, such as labour capacity, income, and assets.

Among households sampled for the 2021 CFSVA, 16 percent reported to be in *Ubudehe* 1, 41 percent in *Ubudehe* 2, 41 percent in *Ubudehe* 3, and only 0.1 percent *Ubudehe* 4 (Figure 122).

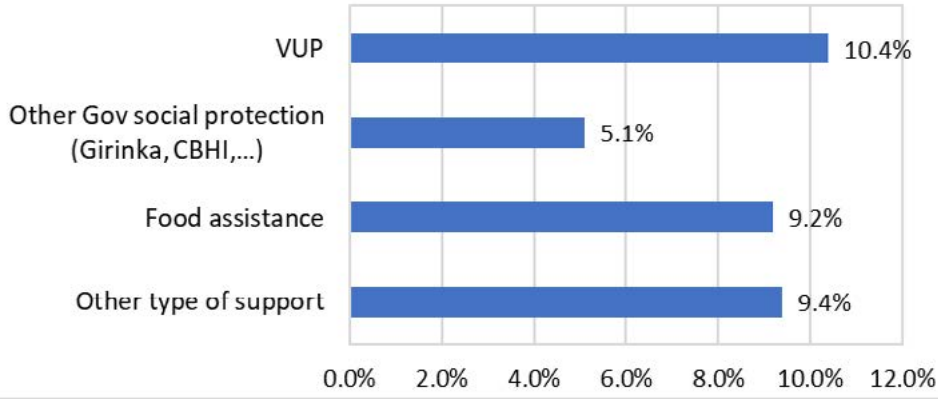
Figure 122: Percentage of households in Ubudehe categories from CFSVA 2018 and CFSVA 2021 (category 1 the poorest and 4 the wealthiest)



12.2. Social protection through VUP in the last 12 months

During the last 12 months before the survey, 15.6 percent of households benefitted from a social protection programme from the Rwanda government (VUP or others), 9.2 percent received support to get food and 9.4 percent received any other non-food support from developing partners or from the community (Figure 123).

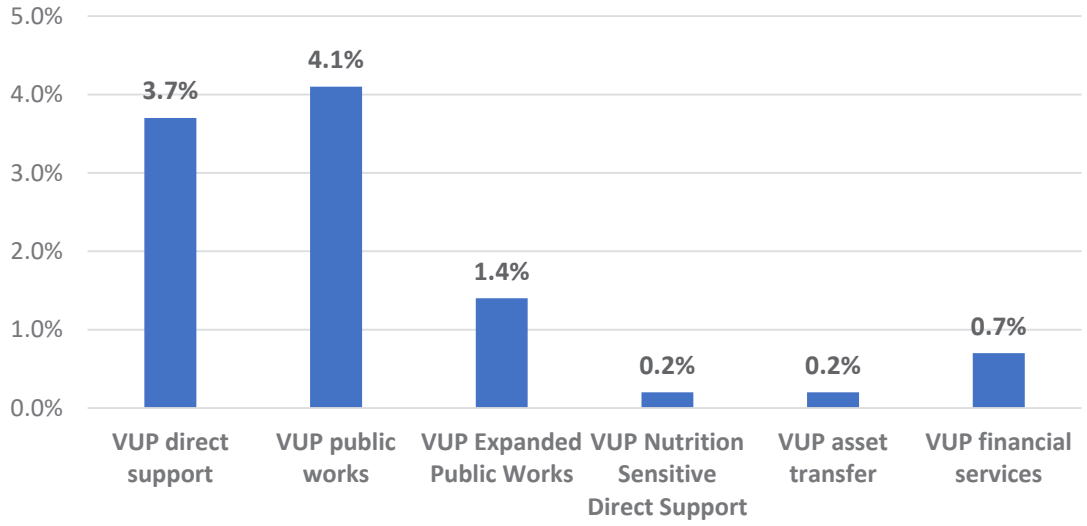
Figure 123: Percentage of household beneficiaries of social protection or assistance during the last 12 months



12.2.1. VUP

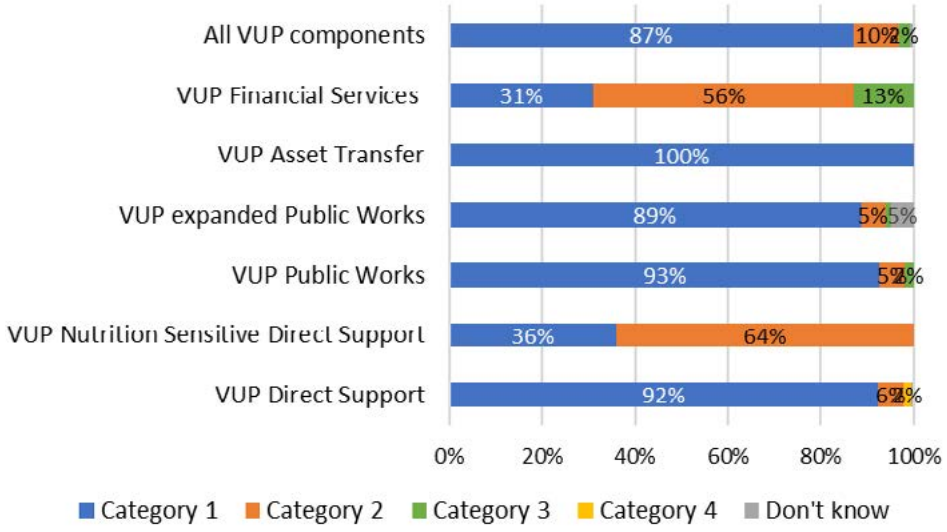
Around 10 percent of households got support from a VUP component: 3.7 percent of households got unconditional income support from VUP Direct Support, 4.0 percent took part in the VUP Public Works, 1.4 percent took part in the VUP Expanded Public Work and around 0.2 percent of households received Direct Support for nutrition for pregnant women or malnourished children. Regarding livelihood enhancement programmes, around one percent of households was granted a loan from the VUP Financial Service component through SACCO's or from the Ubudehe credit scheme and 0.05 percent benefitted from VUP Asset Transfer (Figure 124).

Figure 124: Percentage of households benefitting from VUP



The data collected shows that 87 percent of the households which benefitted from a VUP component are categorized in Ubudehe 1, 10 percent in Ubudehe 2 and 2 percent on Ubudehe 3. However, most of the households in Ubudehe 3 are the ones receiving VUP financial services (Figure 125). Ubudehe 1 households received in average RWF 90.000 from VUP direct support and RWF 67.000 for VUP public works in the last 12 months.

Figure 125: Repartition of households that benefited from VUP by Ubudehe categories



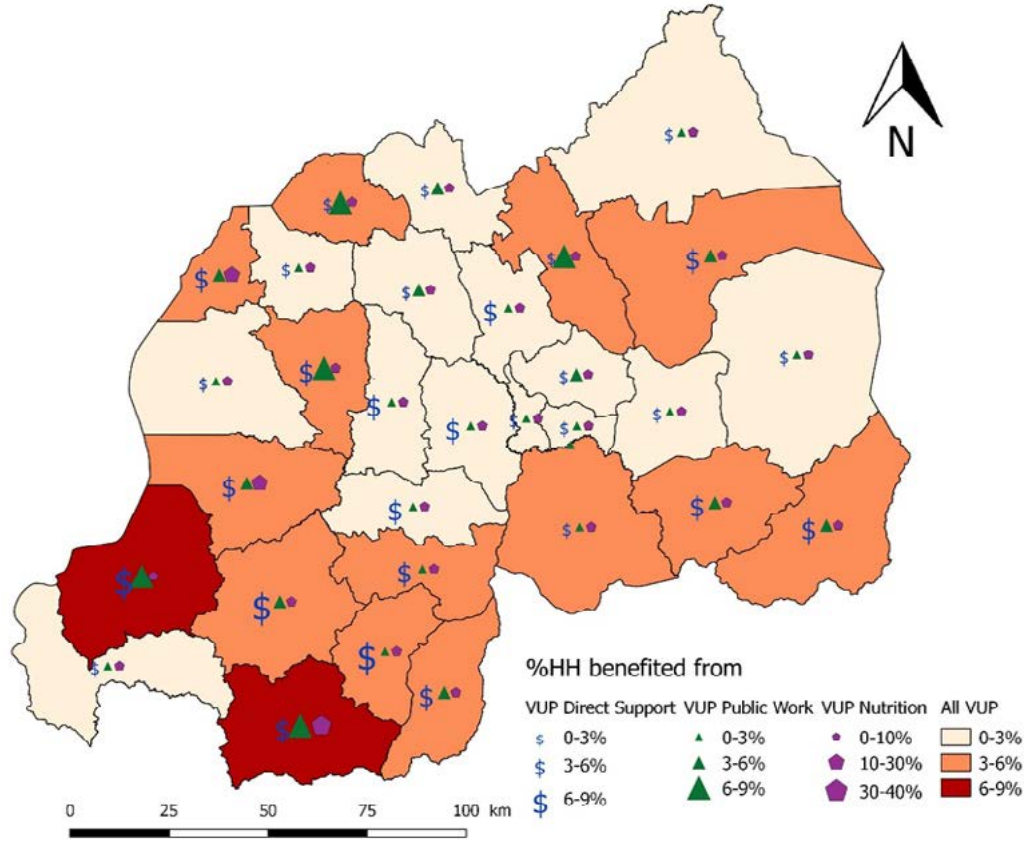
12.2.2. Geographical coverage of VUP

The map below represents the percentage of households that reported having benefited from the various VUP components. The districts with the highest participation in VUP interventions were Nyamasheke and Nyaruguru, with 9.8 percent and 6.2 percent of households benefiting from VUP, mainly the VUP Direct Support and VUP Public Works.

Participation in the VUP Public Works was highest in the districts of Nyamashekewhere 9% of the households reported having taken part in the programme, Musanze (7%), Ngororero (7%), Nyaruguru (7%) and Gicumbi (6.5%). The coverage of the VUP Direct Support is national but the highest participation was recorded in Huye (9% of households), Nyamasheke (7%) and Nyamagabe (7%).

VUP Nutrition-Sensitive Direct Support focus was most deployed in Nyaruguru (31% of households), Rubavu (13%), and Karongi (12%).

Map 9: Participation by households in VUP in the last 12 months



12.2.3. Demographic characteristics of current VUP beneficiaries

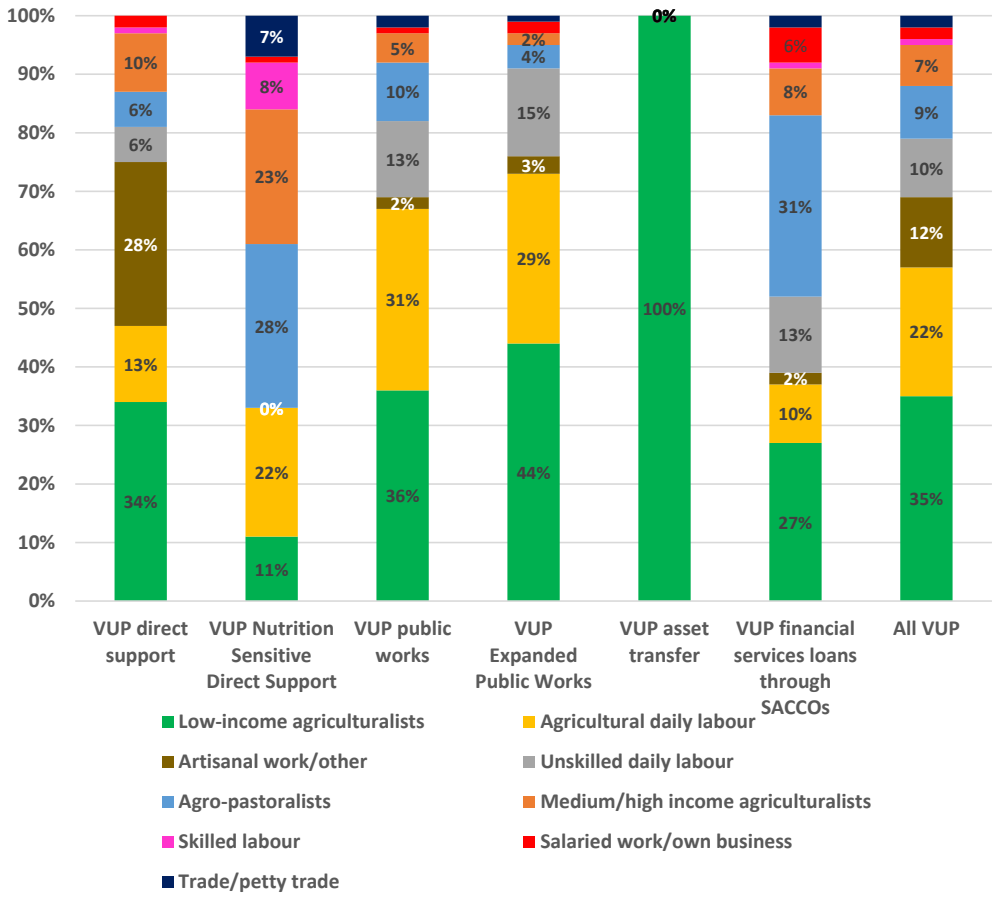
Looking into the details of the household characteristics, most beneficiaries of **VUP Direct Support** are female-headed households (73%), ndividuals aged above 60 years (79%) and widows (68%). As per the CFSVA wealth index, 72 percent are among the two poorest quintiles and 92 percent are from Ubudehe 1. Most of the beneficiaries (34%) are low-income agriculturalist while 28 percent live from artisanal activity and 19 percent from daily labour.

The profile of the **VUP Public Work beneficiaries** is more balanced with 58 percent of male-headed households, aged between 40 to 60 years (45%), individuals who are in a relationship or married (58%) and from the two poorest quintiles (60%). Most of them are daily labourers (44%) or low-income agriculturalists (36%). The majority (93%) are from Ubudehe 1. VUP Public Work helps vulnerable households to get an income and therefore contributes to recreate assets. Among the beneficiaries, one-third (37%) reported having been affected by a shock in the last 12 months mainly the COVID-19 pandemic (23%), the serious illness of a member (22%) or irregular rains (21%).

Households who received a loan from **VUP financial services** are not the most vulnerable in terms of their Ubudehe category: 31 percent are in Ubudehe 1, 56 percent in Ubudehe 2 and 13 percent in Ubudehe 3. Around 70 percent of households that received support through the **VUP Nutrition Sensitive Direct Support** have been analysed with adequate food consumption.

In terms of livelihood, we observed that a quarter of VUP Direct Support was provided to households engaged in artisanal activities. The VUP asset transfer was attributed to low-income agriculturalists (in Rulindo district only) while VUP loans were more granted to agro-pastoralists. The VUP nutrition-sensitive direct support for mothers and children was allocated throughout all the livelihood categories. The beneficiaries of the VUP financial services are predominantly agro-pastoralists (31%), low- income agriculturalists (27%) or daily labourers (23%) (Figure 126).

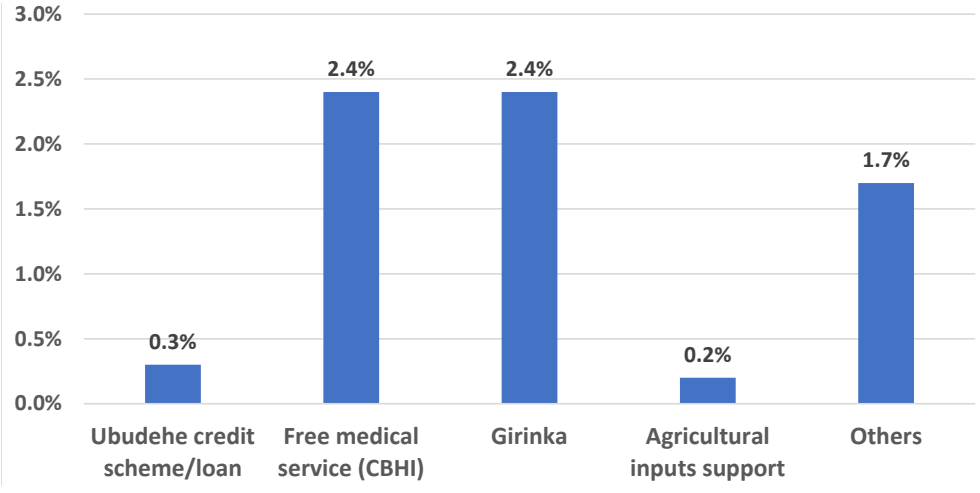
Figure 126: Profile of VUP beneficiaries



12.3. Other government social protection programmes

During the last 12 months, around 2.4 percent of households reported having benefitted from the Girinka programme, 2.4 percent from free medical services through the Community Based Health Insurance. The Ubudehe credit scheme covered 0.3 percent of households while the agricultural inputs support covered (seeds, fertilizers, etc) 0.2 percent of households (Figure 127).

Figure 127: Percentage of households that benefitted from Government other social protection programmes



12.4. Food assistance and emergency relief

Households were asked if they received any emergency or short-term support from the government or partners due to the COVID-19 pandemic or in response to other shocks. Of the sampled households, 18 percent responded positively, and 8.2 percent specified having received food, 2 percent cash and 7 percent other kinds of emergency support.

The data collected unfortunately does not allow for the distinction of the part of food assistance which was delivered as an emergency relief response to COVID-19 or in the framework of more long-term nutrition or social protection programmes. In other words, long-term and emergency assistance schemes are combined in the data. Long-term schemes include supplementary feeding provided to children in poor households (Ubudehe categories 1 and 2) while short-term schemes include food that was provided to vulnerable people who lost their sources of income during COVID-19 lockdowns. When households were asked if they received any in-kind food assistance in the last 12 months, 9.4 percent responded positively. About 6.6 percent mentioned having benefitted from free food distribution whether for COVID-19 response or other, while around 3.0 percent of households reported taking part in a long-term food-based programme like fortified blended food distribution for Mother and Child Health and Nutrition (1.3% of households), school feeding (0.3%), food for assets (0.2%) or other programmes (1.1%).

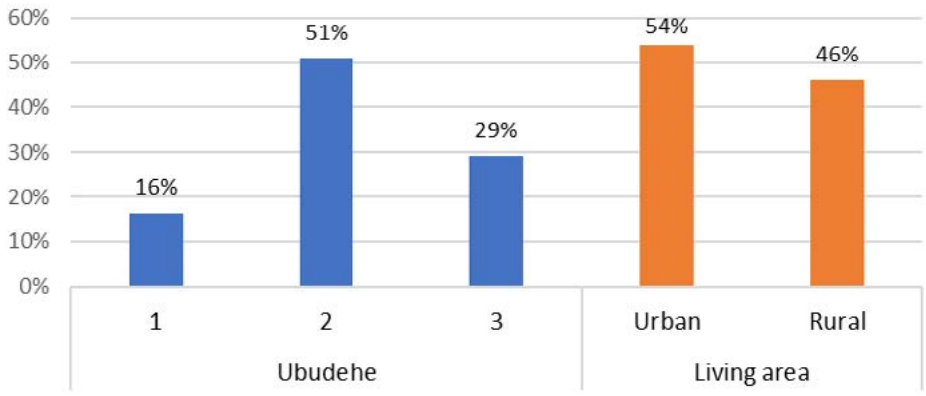
The emergency COVID-19 cash transfers were allocated by the government and partners to persons most affected by the COVID-19 pandemic. Around 0.1 percent of households reported having received cash associated with the COVID-19 response, and most of these recipients indeed mentioned COVID-19 pandemic or the serious illness of a member as the main shock that affected their household in the last 12 months.

12.4.1. Food distributions

Around 6.6 percent of households received food rations during a period over the last 12 months. Among these households, 70 percent reported to have experienced shocks during the last 12 months and were principally affected by the COVID-19 pandemic (58%), the loss or reduction of employment (12%), the serious illness of a family member (9%) but also drought or irregular rains (8%).

The households who benefitted from food distribution were mainly unskilled daily labourers (22%), agricultural daily labourer (18%), low-income agriculturalists (19%) and artisanal workers (11%). Half (53%) lived in the urban area (53%) and are classified in Ubudehe 2 (49% (Figure 128).

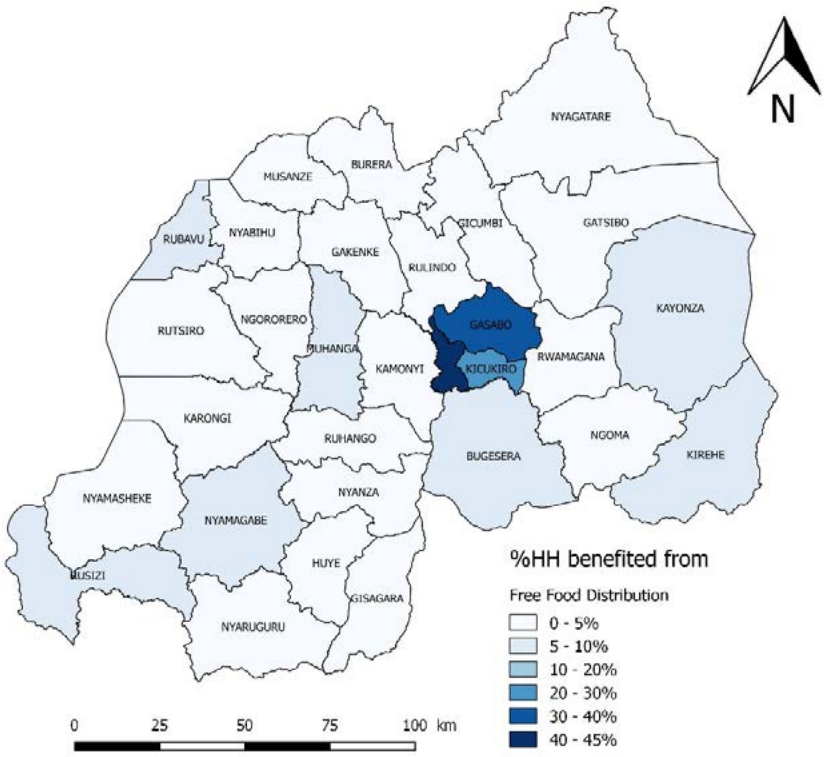
Figure 128: Percentage of households which benefitted from food distribution



Food was mainly distributed by the government (71%) followed by relatives (10%), NGOs (8%), churches and mosques (6%). This food helped to feed families for 20 days on average, according to the households participating in the survey.

In terms of geographic coverage, half (48%) of the food distribution took place in Kigali districts, but coverage was also notable in Muhanga (5%), Rusizi (5%), Kayonza (5%), Rubavu (4%), Nyamagabe (4%), Bugesera (3%) and Kirehe (3%).

Map 10: Participation in free food distributions in the last 12 months

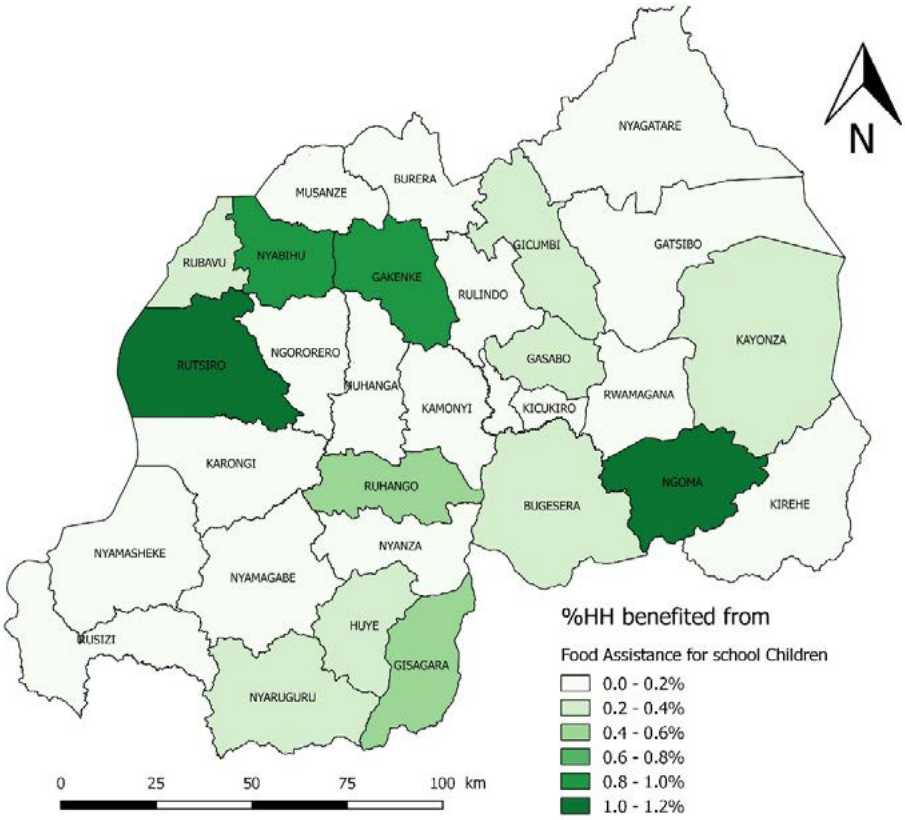


12.4.2. School Feeding

The "One Cup of Milk" programme which consists of milk distribution twice a week in early childhood development centres and primary schools covered one percent of the households.

School feeding assistance was delivered for a period of 12 to 30 days depending on the district. School children food assistance was provided in Rutsiro, Nyabihu, Gakenke, Gasabo, Gisagara, Ngoma, Kayonza, Bugesera, Gicumbi, Rubavu, Ruhango, Huye and Nyaruguru. Most of the households were in Ubudehe 1 or 2 but with no specific household demographic characteristics. 45 percent of these households receiving school feeding were classified as food secure.

Figure 127: Households that benefitted from food assistance for school children



13. CONCLUSION & RECOMMENDATIONS

This 2021 Comprehensive Food Security and Vulnerability Analysis provides updated and comprehensive information about the situation of the food security and nutrition of Rwandan households. The following recommendations are aligned with the results of the CFSVA findings.

2021 CFSVA findings	2021 Recommendations	Target group
• Food insecure households mainly depend on agriculture daily labour or their agricultural production. • Farming households have a land size below 0.5 ha, little access to inputs and do not practice farming techniques that would improve crop productivity.	1. Increase investments in programs that enhance the **sustainability of crop productivity for smallholder farmers** such as small-scale irrigation, land-husbandry, mechanization, agroforestry, and integrated soil fertility management practices. This includes the scale-up of high-value nutritive crops, the promotion of climate-sensitive agricultural techniques for staple crop production, diversification, crop rotation.	Smallholder, low-income farmers in the sensitive agro-ecological area
	2. Develop counter-season, or **off-season cropping** and a **seasonal livelihoods programming** approach to mitigate food availability and access and guarantee stability.	Farming households
	3. Promote the local production and use of **fertilizers blends** that fit the requirements of specific crops (maize, rish potato) and soils and expand the use of secondary and micro-nutrients to optimize productivity and value-cost ratios and raise farmer income levels. This will imply expanded access to soil testing services for farmers.	Cooperative, farmers involved in CIP
	4. Strengthen and **expand proximity extension services** (i.e., Twigire Muhinzi, Farmer Field School, Community Animal Health Workers, Customized Agricultural Extension System, etc.) including focusing on reaching the poorest households and on the involvement of private service providers in the efficient use of input packages, good agronomic practices to maximize outputs, risk mitigation techniques but also in supply chain management.	All farming households, Agri-daily labourers,
	5. Promote off-farm activities/livelihood diversification.	
• 26.7 percent of households have inadequate food consumption with an unbalanced diet devoid of animal proteins and fruits. • National consumption of hem iron is highly insufficient. • Livestock ownership and vegetable garden contribute to food security.	6. Expand the range of priority crops under the **crop intensification programme** with native and new crop varieties that have **high nutritional value**, benefits, and ecological sustainability (stress-tolerant, climate-resilient).	Farming households
	7. Improve the **usage of biotechnologies** (plant-breeding, biotechnology, food fortification, food processing) and support to agro-service providers.	RAB, MINAGRI, Agro-service providers NIRDA
	8. Establish national legislation and operationalization of crop **bio-fortification** and **food fortification**. Strengthen research programme on bio-fortified crop varieties like iron-, provitamin A carotenoid- or protein-biofortification on sweet potato or bean. The strategy should also focus on a dissemination plan for these varieties. 9. Scale-up **fruit tree value chain** as a source of diversified income for urban markets and home food sources with policy priority at the district level.	MINAGRI
	10. Enhance existing programs (**Kitchen Garden**) that promote the production and consumption of nutrient-dense and vitamin-rich diverse foods like orange-fleshed sweet potatoes, 3P (papaya, pumpkin, passion fruit), iron bio-fortified beans, mushrooms, fruits trees along with renewed political attention, production support and land access and specifically in the district most affected by malnutrition and stunting.	Poor/food-insecure households with children under 5 years old and with pregnant and lactating women
	11. Scale-up existing programs that promote the production and consumption at the household level of **low-cost animal proteins source** (poultry, duck, rabbits, guinea pigs,) and on improving access and consumption in the poorest households. 12. Promote the **consumption of milk** at the household level and in homestead production to reduce the sale of the entire milk production to a milk collection centre.	

	13. Scale up the related **animal genetic improvement and animal feed research** and development, including research on the potential of grasses and sorghum as risk-averse animal feed, use of non-food production land for animal feed production	RAB, MINAGRI, Agro-service providers
	14. Strengthen programmes that **promote access to energy-dense and specific nutrient-rich foods**, especially for children 6-59 months and pregnant and lactating women groups. 15. As an interim strategy until consumption of nutrition-dense foods increases, strengthen and expand coverage of programmes addressing micronutrient deficiencies including increasing consumption of **micronutrient powders** (ONGERA) in children 6-23 months, vitamin A in children 6-59 months and iron-folic acid of pregnant and lactating women. Consider expanding iron supplementation to adolescent girls.	Households with children U5 and with pregnant and lactating women
Household food stock lasts longer in food-secure households than in food-insecure ones.	16. Strengthen the development of **post-harvest management, storage and processing technologies** (like low-cost silos, solar dehydrators) with a focus on smallholder farmers and supported by agro-service providers. This might include an education program on post-harvest management for the target groups.	Smallholder, low-income farmers, agro-service providers
2021 CFSVA findings	**2021 Recommendations**	**Target group**
44% percent of households were affected by a shock that was mainly weather-related (Mainly irregular rains or drought but also hailstones, floods and landslides).	17. Develop a **policy on climate change** that gives direction on how to deal with recurring climate-related shocks and considers climate change in the development programmes (soil conservation, reforestation with proper tree varieties like fruit trees, water management). 18. Invest in evidence generation to better understand the intensity and effects of shocks and what services are needed to support affected households 19. Develop mechanisms to mitigate the effects of shock on affected households through both shock-responsive social **protection schemes and livelihood enhancement schemes.**	Government and partners
	20. Strengthen the **early warning system** to better follow natural hazards and their impacts and rapidly share information with all stakeholders to improve response mechanisms (who has been affected, under which conditions and how recovery happened).	Government, decision-makers and partners
• A quarter of households faced food shortages. • Almost half of the households practicing as daily agriculture labour, poor and poorest wealth quintiles reported seasonal food access issues. • The main reasons for food shortage were reduction or loss of employment and the low production from the last agricultural season mainly because of drought and irregular rainfalls. • The proportion of households reporting acute food access difficulties increased by 5 percent compared to 2018 and might be attributed to the COVID-19 outbreak.	21. Facilitate access to drought-tolerant crop varieties, early maturing, pest-resistant varieties that are nutritious (millet, sorghum and orange-fleshed sweet potato) in agro-ecological zones vulnerable to climate shocks. 22. Promote **crop risk mitigation techniques** for staple crop production, diversification, crop rotation, agroforestry, focus on small-scale irrigations, land husbandry like progressive terracing and agroforestry complements with comprehensive climate-smart soil and integrated watershed management.	Farmers in the area most affected by shocks
	23. Operationalize the existing **crop protection** strategy that guides how to monitor and cope with emerging diseases and pests. 24. Develop regular and timely **information bulletins for farmers** which include a consolidated weather forecast (from RWA information) and any relevant agricultural information like crop pest and disease monitoring system or disasters communications to enhance access to human-centred climate and weather information by farmers and farmer promoters for improved decision making and climate resilience	Farming households, cooperatives, LODA
	25. Scale up the existing government **subsidy scheme on small-scale irrigation and water-harvesting** equipment to include farmers growing crops during the lean season (season C) and/or for mitigating seasonal rainfall shortage. This should be coupled with the promotion of short-duration crop varieties, the availability of seeds and fertilizers at the right time.	Farmers in the drought-sensitive area
	26. Enhance effective agriculture **insurance systems** to increase the resilience of farmers to climate/weather shocks. Competitive grants/subsidies should be considered in the process for effective adoption.	Natural hazards-prone areas
	27. Increase participation in saving groups among vulnerable groups.	Vulnerable households affected by shocks

One-third of food access issues were unexpected.	28. Increase the capacity of the **National Strategic Grain Reserve** and its decentralization to districts. Develop strategies for intraregional food trade, to cope with potential sudden food shortages.	Districts, private dealers
	29. Promote and support the **household food storage**	All farmers
	30. Strengthen the operational preparedness of the district with the development of a **Nutrition and Food Security emergency plan** to be integrated with the district development plans.	All districts
Households with more livelihoods activities or engaged in non-agricultural activities have more regular and higher incomes and are more food secure.	31. Promote entrepreneurship and a **business-oriented mindset** among rural households and with a focus on young people to diversify their income sources through off-farm job opportunities including increasing access to savings and credits, e.g., through community-based savings and lending groups, with a focus on including the poorest households. 32. Promote **value addition innovations** targeting nutrient-rich foods (e.g., fruits, vegetables, milk, fish, beekeeping, etc.) and their marketing; 33. Promote linkage between **local farming and school market** through homegrown school feeding.	Young people, smallholders, low-income farmers, agri-daily labourers
2021 CFSVA findings	**2021 Recommendations**	**Target group**
• Households purchase two-thirds of their food on market. • They spend more than 65% of their budget on food making them vulnerable to changes in food prices.	34. Promote intra-country trade of grains, meat, fish, eggs, fruits and vegetables and investing in storage and transportation facilities to prevent food price volatility among the country;	The whole country
	35. Continue monitoring food prices and expand existing initiatives that allow farmers access to market information on commodity trade and develop an effective **Market Information System** (MIS) to help producers (and consumers) deal with changes in commodity prices throughout the entire year.	All farmers, traders
• Physical access remains an issue in some areas of the country. • Market food supply and food price follow agricultural season patterns.	36. Expand investments in and/or optimize **market infrastructure and market supply** like feeder roads development, transport facilities, community silos and cold chain infrastructure, produce collection centres (for milk, vegetables, fruits, honey, etc.) to stabilize food prices and optimize access to diversified food items by all Rwandans. 37. Develop innovations to increase **market integration** of smallholder farmers (e.g., warehouse receipt system, commodity exchanges, etc.).	Markets in the remote and poor rural area (Western province)
2021 CFSVA findings	**2021 Recommendations**	**Target group**
• Food insecure households mainly depend on agriculture. • Food insecure households are more often headed by a person with a low level of education. • The mother's food consumption and level of education influence the child's food consumption.	38. Enforce the effective coordination of the multisectoral **District Food and Nutrition Steering Committee** and the implementation of the District Plan to Eliminate Malnutrition (DPEM).	Agri-service providers
	39. Strengthen **community-level programs** that build household's capacity, knowledge, and accountability to synergistically address food utilization, sanitation and hygiene in collaboration with MINALOC and NCD Agency under the multisector District Food and Nutrition Steering Committee (DF&NSC). 40. Increase **social behaviour change communication** and counselling efforts to promote the consumption of animal protein sources, fruits and nutrient-dense vegetables to improve key nutrition indicators such as minimum acceptable diet in children and dietary diversity among women of reproductive age.	Poor, food-insecure households, and with malnourished children
	41. Develop a **national communication plan** and conduct mass campaigns on good practices on nutrition and hygiene. 42. Establish **national food-based dietary guidelines** to inform consumers on food choices and facilitate nutrition.	The whole country

	43. Develop specific **behaviour change communication materials** to improve nutrition through dietary diversification, sanitation and hygiene and gender empowerment. This material should be integrated into agriculture-related training, for example through the agro-extension workers, kitchen garden, small livestock programs. 44. Develop materials to promote best **cooking practices** to preserve nutrients in the food (legumes and vegetables) and integrate these into existing SBCC activities.	Beneficiaries of training in food security and nutrition
	45. Invest in the **capacity development of agricultural extension** agents on nutrition-related matters, gender-equal nutrition-sensitive food production and input use and develop right SBCC activities for farmers to improve the link between food production and nutrition security.	Agricultural extension agents
	46. Integrate a **nutrition & hygiene education** component into all relevant agriculture programs and projects to improve the production and consumption of high nutritive crops among producing farmers.	All MINAGRI programme
	47. Integrate a **nutrition education** component in the curricula of primary and secondary public/private schools, TVET and universities. 48. Mobilize schools (primary and secondary) for establishment of kitchen gardens	MINEDUC
• Rwandan children 6-23 months ate an average of 3 food groups per day, twice a day meaning that at least one more food group and at least one more feeding time per day would be needed to achieve the minimum acceptable diet. • 30 percent of respondents reported a general decrease in child food consumption due to the COVID-19 outbreak	49. Ensure consistency in implementing the **Essential Nutrition Actions** and promote efficient geographic targeting across the 30 districts of the country.	All districts, health centres
	50. Continue and enhance **targeting for supplementary feeding** for children 6-23 months with nutrition counselling in poorest households (Ubudehe 1 in all districts and 2 in selected districts). 51. Increase coverage of the **home fortification programme** using Ongera for children 6-23 months. This programme can enhance good practices relating to infant and young child feeding (IYCF) as Ongera is introduced to caregivers through a cooking demonstration.	Vulnerable households with children under 2
	52. Conduct regular **training sessions for health caregivers** (including CHWs (Community Health Workers)) in nutrition-specific interventions such as maternal infant and young child nutrition (MIYCN), management of acute malnutrition, and management of diet-related non-communicable diseases, etc.	Health caregivers
• Children who suffered from diarrhoea in the two weeks before the survey are more likely to be stunted.	53. Improve access to **Quality water** through safe water storage, health services, hygiene and sanitation (WASH) and promote the integration of WASH in all community-level food and nutrition security programs.	All districts, focus on the area with a high prevalence of food insecurity and stunting

2021 CFSVA findings	2021 Recommendations	Target group
• Food insecure households are among the poorest (34% in Ubudehe 1 and 21% in Ubudehe 2). • Most of them survive on agricultural activities.	54. Strengthening **cross-sectoral collaboration** and aligning social protection, agricultural and health priorities to deliver food security and nutritional interventions at scale, through the established "Joint Imihigo" framework at the national and district level. 55. Establish a strong partnership between MINAGRI, the Rwanda Agricultural Board (RAB), MINALOC and the Local Administrative Entities Development Agency (LODA) to ensure a coordinated approach when targeting agricultural asset transfer schemes and agricultural extension services to **poor and vulnerable population** groups. 56. Improve planning and timing aspects between agriculture and social protection **Public Works** to ensure that employment and income opportunities for poor households are sustained even during off-season agricultural periods. For instance, improve specific targeting for **agricultural daily labourers** in opportunities like high labour intensity projects during off-season agricultural periods.	All 30 districts, local governance
Most of the food-insecure households have no access to land and no livestock.	57. Improve the resilience of **landless households** in Ubudehe 1 by exploring the possibilities of organizing extremely poor and landless households into groups, which participate in joint food production on allocated communal plots. 58. Strengthen the **Girinka Program** 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.	Poor and food-insecure households
Female-headed households are more prone to be food insecure.	59. Ensure that women-headed households, which are among the most food-insecure, get fair **access to extension services and land resources**. 60. Ensure that programmes targeting women's role in agriculture include other support services such as time-saving technologies that support women's time use for children and nutrition.	Poor female-headed households
VUP Public Work is the main financial program that benefitted households in Ubudehe 1.	61. Expand and reinforce the harmonization of stand-alone sector targeting under **Public Works programmes** from VUP and MINAGRI to efficiently respond to the needs of extremely poor households and communities exposed to natural disasters. 62. Develop a shock-responsive and agile approach to targeting affected households before, during and after a disaster 63. Strengthen guidance on how VUP can contribute to disaster risk reduction through climate-sensitive public works	Households in Ubudehe 1 and 2 who are most exposed to disasters
Stunted children are more likely to be in food-insecure households.	64. Improve household level **screening** and early identification for children at risk of malnutrition.	CHW (Community Health Workers)

2021 CFSVA findings	2021 Recommendations	Target group
The food security status of the household deteriorates when the food expenditure share increases.	67. Carry out deeper oriented studies (like Optifood Analysis) on how to better identify and fill the nutrient gap in current diet consumption at the household level and reduce the food basket price (study the link between food needs, food preference, food production and food cost).	Food insecure households
Lack of data on the impact of food security and nutritional programme in Rwanda	68. Carry out an impact assessment of programme/project supporting homestead production (CIP, one cow per family, kitchen garden, small livestock rearing etc).	
Lack of accurate data on food availability in Rwanda	69. Carry out seasonal/annual national food availability assessments like the food balance sheet and market assessment. 70. Reinforce the capacity of MINAGRI to coordinate food security assessment and monitoring.	MINAGRI

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ANNEX

ANNEX 1: Ubudehe Categories

Category	Household Criteria	Remarks and examples
1	a) Without a house b) Without ability to rent a house c) Often struggles to get food d) Struggles to get basic items	Very often struggles to get food: Able to eat at most once a day
2	a) Owns a house b) Able to rent a house b) Often gets food c) Often works for others (wages) d) With an employee in non-permanent job	Often gets food: Able to eat at least twice a day
3	a) With an employee in Public/Private Sector b) With a member self employed c) With business activities d) Farmers with surplus for market e) With a member who is a small trader	May be having varying levels of welfare (e.g., not all public servants have the same income, they are further separated by their businesses and their level of asset accumulation).
4	a) With a big trader (whole sales, may be producing locally, in import and export trade) b) With a member who owns a company providing specialized services (transport, etc.) c) With a member who is employed in Public/Private sector at high level d) With a member who has (an) industry(ies) e) With a member who own rental house(s) in big cities or other big businesses like trucks, petrol stations, etc.	Some farmers, traders and employees in the Public and Private sector might find way into this category, as a result of their investment levels/asset acquisition levels.

ANNEX 2: Comparison of crop productions of 2018 & 2021

(Source: NISR/MINAGRI SAS 2018-2021 Season A)

	Beans			Maize			White fleshed sweet potato			Irish Potatoes		
	2018A	2021A	Variation	2018A	2021A	Variation	2018A	2021A	Variation	2018A	2021A	Variation
Nyarugenge	863	1 689	96%	374	1 209	223%	1 691	2 016	19%	66	401	507%
Gasabo	7 912	5 280	-33%	4 851	3 613	-26%	11 056	7 814	-29%	1 884	2 699	43%
Kicukiro	721	1 450	101%	1 570	1 606	2%	3 546	2 940	-17%	76	55	-28%
Nyanza	11 067	12 707	15%	7 875	8 134	3%	23 340	13 922	-40%	2 234	1 112	-50%
Gisagara	13 827	9 859	-29%	16 057	12 020	-25%	14 564	14 383	-1%	1 128	954	-15%
Nyaruguru	5 582	5 104	-9%	4 613	11 155	142%	50 540	44 884	-11%	6 261	7 751	24%
Huye	9 139	9 455	3%	4 305	6 989	62%	16 246	17 601	8%	1 669	3 414	105%
Nyamagabe	7 214	6 340	-12%	2 909	8 269	184%	47 255	54 195	15%	13 232	15 055	14%
Ruhango	8 062	8 998	12%	1 898	4 475	136%	15 115	12 128	-20%	1 529	1 681	10%
Muhanga	7 619	3 698	-51%	2 064	2 284	11%	31 445	27 735	-12%	413	1 120	171%
Kamonyi	11 413	8 041	-30%	6 555	5 617	-14%	33 145	10 976	-67%	1 163	2 273	95%
Karongi	5 812	5 783	0%	5 732	12 988	127%	36 891	35 085	-5%	5 323	9 329	75%
Rutsiro	5 244	3 734	-29%	9 852	10 727	9%	22 874	28 640	25%	31 429	29 874	-5%
Rubavu	3 682	5 634	53%	5 394	3 366	-38%	2 942	4 998	70%	66 183	69 790	5%
Nyabihu	6 566	4 225	-36%	4 092	4 207	3%	18 833	20 979	11%	104 582	115 357	10%
Ngororero	5 492	8 495	55%	6 111	4 818	-21%	34 974	34 059	-3%	11 221	8 036	-28%
Rusizi	6 197	7 959	28%	7 946	10 782	36%	10 357	13 098	26%	202	780	286%
Nyamasheke	4 582	6 537	43%	3 627	8 408	132%	39 893	15 429	-61%	99	580	484%
Rulindo	9 906	6 542	-34%	9 355	6 385	-32%	20 333	29 283	44%	4 137	5 536	34%
Gakenke	8 435	6 844	-19%	15 903	18 428	16%	37 771	51 056	35%	11 974	6 418	-46%
Musanze	2 708	6 354	135%	9 378	12 023	28%	8 559	16 892	97%	44 005	52 462	19%
Burera	11 414	8 066	-29%	9 467	20 650	118%	20 320	25 086	23%	48 525	59 671	23%
Gicumbi	20 728	16 318	-21%	11 005	6 369	-42%	62 802	63 080	0%	45 332	26 028	-43%
Rwamagana	12 395	12 309	-1%	15 889	15 341	-3%	10 735	14 251	33%	9 249	6 272	-32%
Nyagatare	10 088	14 835	47%	50 793	47 679	-6%	8 145	8 195	1%	4 660	3 458	-26%
Gatsibo	16 692	14 912	-11%	39 852	28 704	-28%	16 705	21 152	27%	8 363	11 601	39%
Kayonza	9 574	14 685	53%	20 181	22 280	10%	9 672	13 349	38%	6 528	6 700	3%
Kirehe	13 869	16 240	17%	21 438	37 451	75%	11 206	10 456	-7%	4 031	6 484	61%
Ngoma	6 986	12 011	72%	23 020	25 636	11%	10 914	19 975	83%	3 610	7 930	120%
Bugesera	7 402	14 745	99%	10 561	17 026	61%	29 714	33 690	13%	403	739	83%
National	251 189	258 851	3%	332 670	378 641	14%	661 583	667 346	1%	439 512	463 562	5%

ANNEXES INCLUDED ON THE FLASH DISK

ANNEX 3: Definitions and computation of main indicators

ANNEX 4: Datails tables with key indicators

ANNEX 5: Questionnaires

ANNEX 6: Food security