



NUTRITION *in* CITY ECOSYSTEMS

January 2025

CITY OVERVIEW on food and nutrition



RWANDA

Rubavu City



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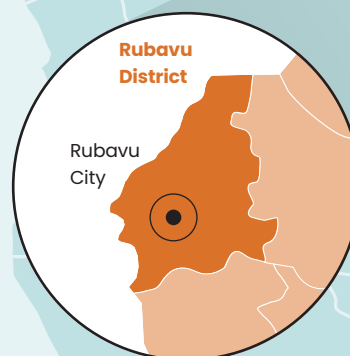
Basic facts

Rubavu City

Location

Rubavu City, located in **Rubavu District** in the Western Province of Rwanda, lies on the northeastern shore of Lake Kivu, adjacent to the Democratic Republic of the Congo.

The district features a **volcanic landscape**, which makes the soil highly fertile, supporting **agricultural activities**. Rubavu experiences an **equatorial climate**, with an average temperature of **15°C** and an annual rainfall of around **1200–1500 mm**. These climate and soil conditions allow for the cultivation of a wide variety of crops, including potatoes, maize, cassava, and beans, as well as fruits like passion fruit and mangoes.^{1,2}



Demographics

- **Population:**^{*}
546,683 people (Rubavu District)
→ 279,384 females (51.1%)
→ 267,299 males (48.9%)
of these 294,448 live in an urban setting
- **Density:** 1,614 people/km²
- **Average household size:** 4.3 people

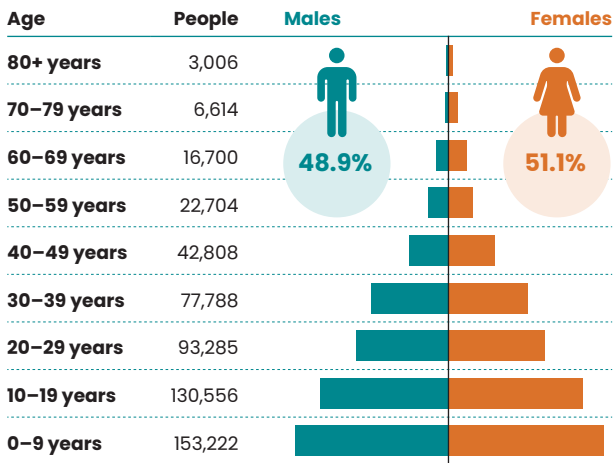
* 2022 census

Rubavu's population is **young**, with **61%** of residents **under the age of 25**, reflecting a high fertility rate in the recent past. **16%** of households are **headed by females**.

Rwanda ranked **39th** in 2024, which is a decline from its 12th place in the 2023 **Global Gender Gap Index**. This drop reflects some challenges in maintaining the high gender parity it previously achieved, particularly in areas like economic participation or political empowerment. Despite this, Rwanda remains a **leader in gender equality in Africa**.^{1,3,4}

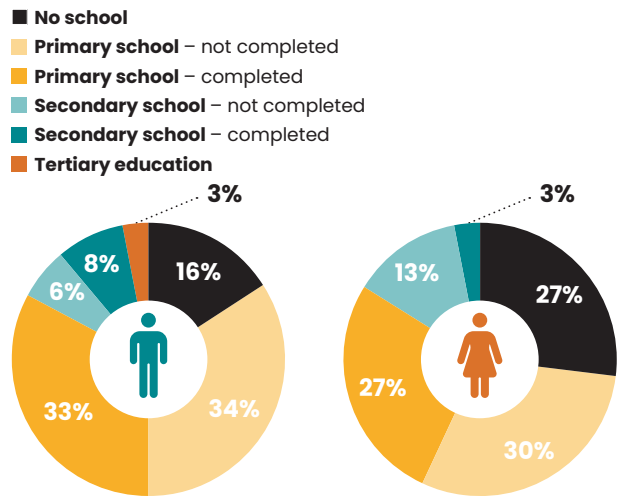


Age distribution ⁵



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Household head education ³



Living conditions

In Rubavu, **poverty** is widespread, and many residents depend on **subsistence farming** for their livelihood. The district’s urban center is **Rubavu City**, while the surrounding areas are primarily **rural**. Despite its proximity to Lake Kivu and favorable agricultural conditions, many households face challenges in accessing **basic services**.

Approximately **60%** of households have access to **electricity**, while the remaining **40%** rely on other forms of energy sources, such as **wood and kerosene**.

The water supply infrastructure is relatively strong, with **94%** of households accessing **improved drinking water sources**. However, the district’s sanitation infrastructure requires improvement, as **41%** of households still rely on **inadequate sanitation facilities**.¹



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General health statistics

Health status

Rubavu's health indicators reflect the broader **socio-economic challenges** faced by the area. The **life expectancy** in Rubavu is **69 years**, with women generally outliving men by a few years.^{6,7}

Only **23%** of households in Rubavu have at least one member covered by **health insurance**, primarily through the community-based health insurance scheme. **Access to health services** is relatively widespread, with **84%** of the population living within 5 km of a healthcare facility.^{8,9}

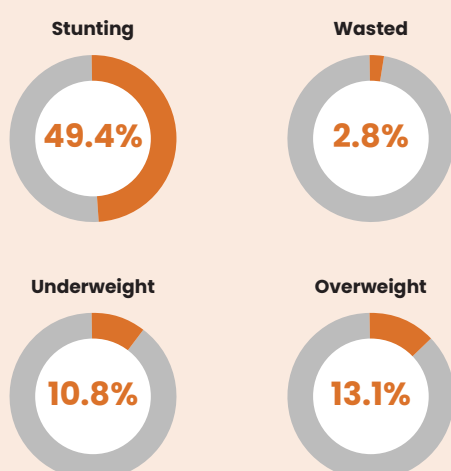
Out-of-pocket health expenditure in Rubavu is among the lowest in Rwanda, largely due to the high enrollment in the community-based health insurance system. Nationally, **out-of-pocket payments** account for about **8–10%** of total health expenditures, and Rubavu aligns with this trend, with relatively low individual healthcare services costs. The average cost

for **outpatient services** in Rubavu is approximately **960 RWF (\$0.71)**, which is lower than the national average, indicating better affordability for healthcare in the district compared to other regions.^{8,9}

In Rwanda, **non-communicable diseases (NCDs)** have now become an urgent public health concern, as they contribute to an estimated **40%** of **all deaths** as of 2021. The leading NCDs in Rwanda do not differ much from those in other East African countries: **cardiovascular diseases, cancer, diabetes, and chronic respiratory conditions**. Rwanda has undertaken specific initiatives concerning physical activity, reduction in tobacco use, and community awareness of risks related to NCDs. This approach complements the overall health sector goals in Rwanda to enhance population health and reduce socioeconomic burdens due to chronic diseases.⁷

Key facts^{6,7}

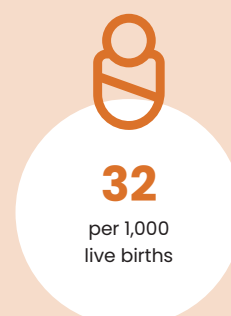
Health of children under 5 years (2022)



Maternal mortality



Infant mortality



Applying a systems approach to the Farm to Fork logic



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Production

Rubavu’s agricultural production benefits from its **fertile volcanic soils**, which support a diverse range of crops, including **maize (51%)**, **beans (46%)**, and **peanuts (32%)**. **Poultry farming** is the most common form of livestock practice, with **52%** of households raising poultry, while **pigs (23%)** and **cattle (17%)** are less commonly reared.

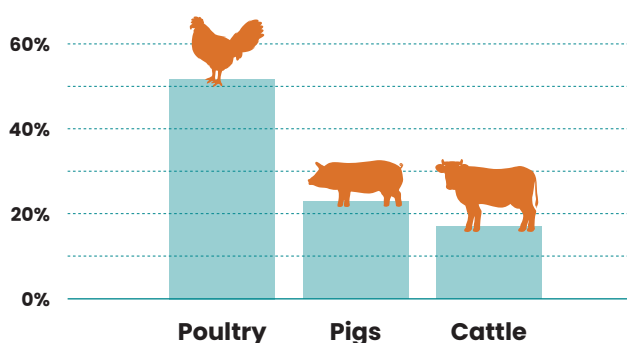
Despite this agricultural diversity, many farmers face challenges accessing post-harvest processing and storage technologies. As a result, most crops are consumed shortly after harvest, with minimal value addition, limiting economic opportunities.

The introduction of **crop and livestock loans** by institutions such as Bank Populaire, Tubura Program, Umutanguha Bank, and Tontine has provided a few smallholders with a financial safety net, encouraging **agricultural expansion**. In our **2021 household**

survey, **4.3%** of Rubavu District farmers reported to have received an **agricultural loan** in the past year.

These developments are injecting new hope and stability into the local farming community, with the potential to transform the sector.^{3,10}

Household participation in the production of animals



Household participation in the production of crops

Seasonal crops ^{a)} (Top 3)	% of households engaged in production
Maize	51%
Beans	46%
Peanuts	32%

Perennial crops ^{b)} (Top 3)	% of households engaged in production
Banana	35%
Avocado	32%
Cassava	22%

a) **Seasonal crops** are plants that are cultivated and harvested during specific times of the year.

b) **Perennial crops** are plants that live for multiple years and produce crops year after year.



Farming and agroecological practices

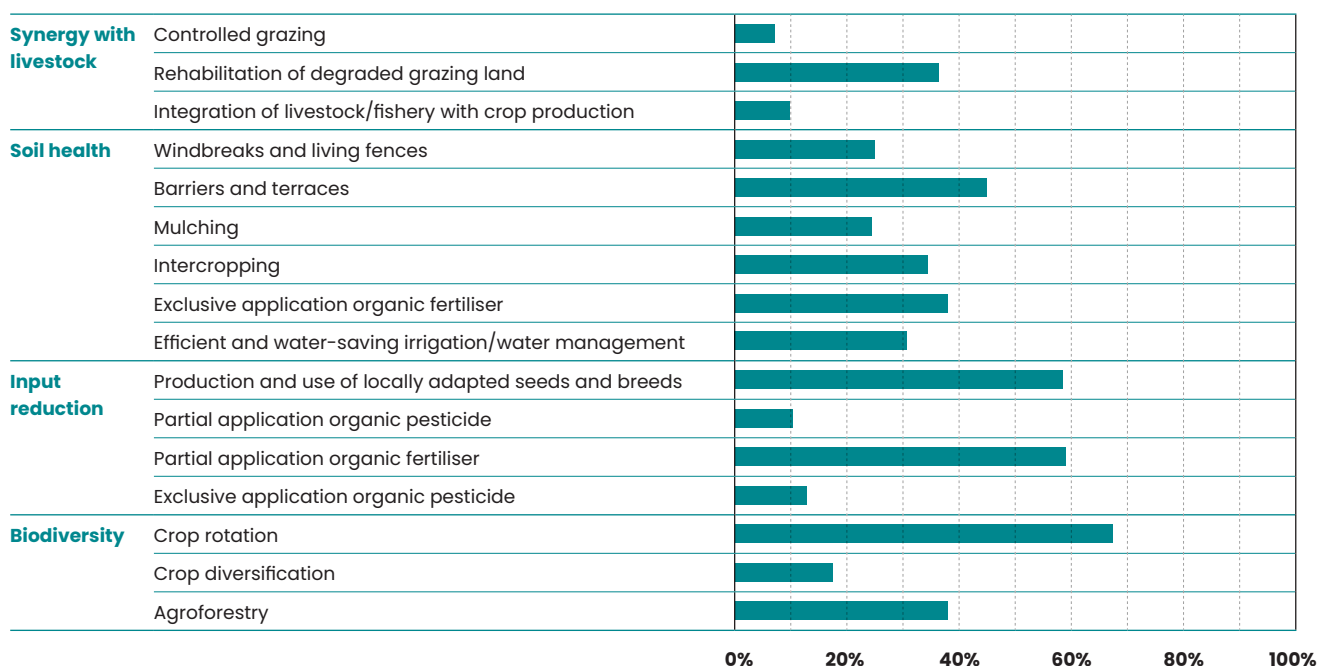
Mixed farming is practiced by 72% of farmers, combining crop and livestock production. Although **organic fertilizers** such as compost are widely used (by 91%), **synthetic fertilizers** also remain popular (85%). Agroecological practices such as **crop rotation** (67%), crucial for maintaining soil fertility and biodiversity, and the use of locally adapted seeds are widely adopted. Nevertheless, there is room for growth in practices like **integration of livestock**, **mulching** and **barrier construction** for soil health.¹⁰

The agroecological practices show a mix between **traditional and modern techniques**. The prevalent use of locally adapted seeds, for example, helps to maintain resilience to local climate conditions, but the adoption of more advanced agroecological methods remains limited, suggesting opportunities for further capacity building in **sustainable farming**.

While Rubavu farmers engage in proactive management of their farms, advanced **record-keeping** and **farm planning** are limited, indicating further areas for development.¹⁰

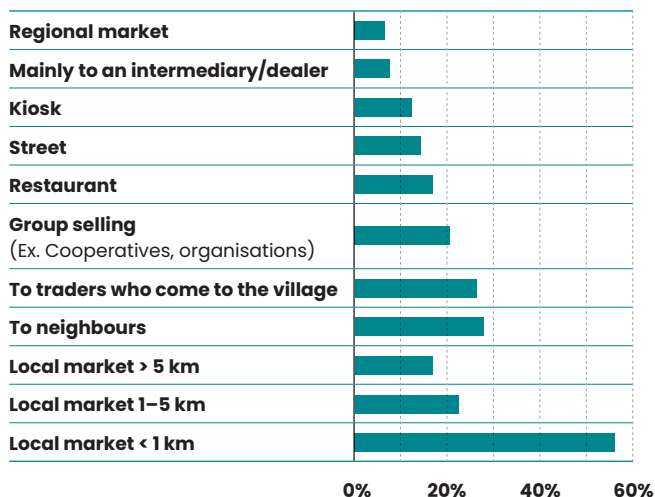


Agroecological practices



Selling locations

Most prominent selling channels/locations of farming output in Rubavu

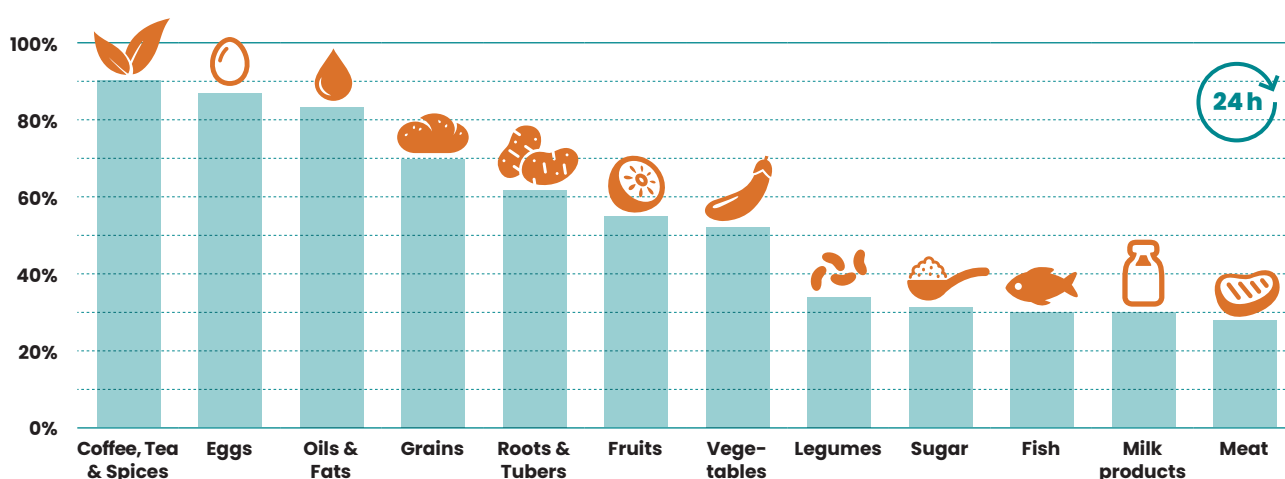


Farmers primarily sell their produce in **local markets**, with **56%** of households selling **within a 1 km radius**. Direct sales to **neighbours** and **cooperative sales** are also common, underscoring the importance of community ties and localized markets.

While proximity to markets is valued, the lack of access to larger, more formalized market systems limits **income potential** for farmers. The underutilization of regional markets and intermediaries points to challenges in **market access** and **infrastructure**.¹⁰

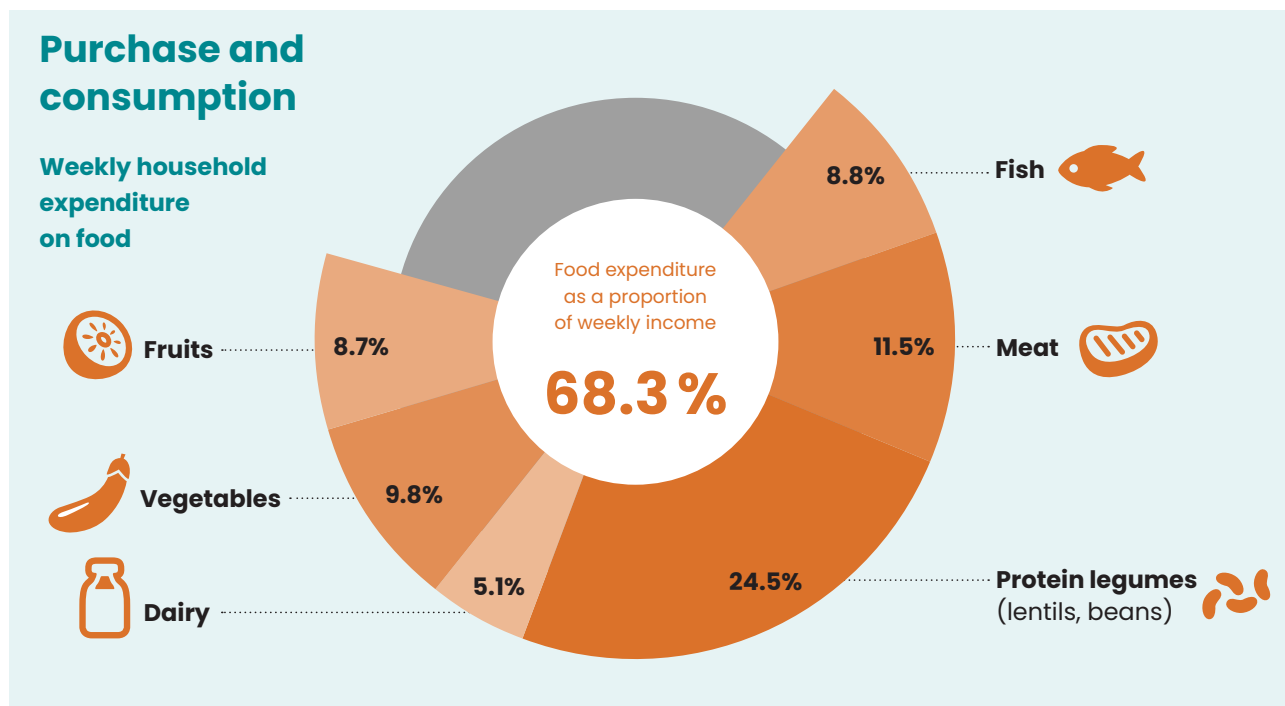
Food consumption

Respondents' household food consumption patterns in the 24 hours prior to the survey



Rubavu diets are largely **plant-based**, with high consumption of vegetables, grains, and eggs; over **80%** of households consume **eggs** regularly. However, other **animal-based products**, such as meat and fish, are consumed less frequently. The dominance

of **staple crops** like maize and beans in daily meals reflects limited dietary diversity, which can contribute to **nutritional deficiencies**. Additionally, limited **post-harvest processing** affects the availability of diverse food options throughout the year.¹⁰



Women, youth, and other vulnerable groups

Women and youth are heavily involved in both crop and livestock farming in Rubavu. Many women contribute significantly to **agricultural decision-making**. Despite the participation of women in **subsistence farming**, they have less influence over decisions concerning **cash crops** and **larger livestock** and are less present in **processing** and **agri-business**.

The city’s food system, which emphasizes **agroecological practices**, particularly benefits from women’s

roles in crop diversification and small-scale livestock management. They are also heavily involved in **cross-border trading** of fruits and vegetables, playing a pivotal role in commodity transport into the DRC, representing an estimated **74%** of total **cross-border traders**. Youth are also eager to engage in agriculture, with a strong focus on **sustainability practices** promoted by the **NICE project**.^{10, 11}

For more detailed insights into farming systems, please refer to the [Farmers Survey Report](#)



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Nutritional challenges

Food production



Rubavu's rich **volcanic soil** constitutes fertile ground for crops like **maize**, **beans**, and **peanuts**, grown by **51%**, **46%**, and **32%** of farmers, respectively. A significant number of households (**52%**) also have **poultry**. Despite this agricultural diversity, the district has challenges in **produce processing** and **storage**. Most of the harvests are either consumed at the farm level or transported elsewhere with minimal handling after harvest. This limits the application of **refrigeration** and advanced techniques of **food processing** that would otherwise ensure better **preservation** and **value addition** to the agricultural products. While **15%** of the households specialize in **crop production** and **12%** in the production of **livestock**, the leading practice is **mixed farming**.¹⁰

Dietary diversity



The variety of food in Rubavu is pretty limited, dominated mostly by **vegetables** and **fruits**, with **roots and tubers**. Other food animal consumption is also low, even when **eggs** are consumed by **86%** of households, which could be a reason for **protein deficiencies** reported. Households practice **crop diversification**, but at the same time, high reliance on major staples such as **maize** and **beans** significantly restricts dietary diversity. Data from the **baseline survey** indicates that the **minimum dietary diversity score** among reproductive-age women in the country stands at **3.8 out of 10**, while less than half consume five or more food groups daily. This is further corroborated by the general population, with the **average dietary diversity score** standing at a low **4.0** at household level. The average **family** has **4.3** persons, and the high level of children and teenagers increases the demand for the betterment of nutritional status.^{1,10}

Climate effects



Agricultural productivity in Rubavu is particularly low from June to mid-September, a period exacerbated by limited **soil condition assessments** (only conducted by **25%** of farmers) and declining **soil fertility**. Although **fertilizer use** is widespread – with **91%** applying **compost** and **85%** using **artificial fertilizers** – there is a significant need for improved **soil conservation practices**. For instance, only **29%** practice **mulching**, while **crop residue management** is practiced by only **22%**. All these shortcomings have led to the decline in yield whenever crops face any **extreme weather conditions**, thus leading to negative impacts on overall **food security**.¹⁰



Trade



Rubavu's geography, bordering Lake Kivu and close to **cross-border trade** with **Goma** in the Democratic Republic of Congo, provides trade opportunities for its residents. However, **56%** of the households sell their produce within **one kilometer radius**, mainly relying on **local markets**. While broader market access is possible, few farmers venture beyond the local level. Additionally, only **21%** of households participate in collective selling arrangements, such as **cooperatives**, limiting their ability to tap into larger and more lucrative markets.¹⁰

Food insecurity



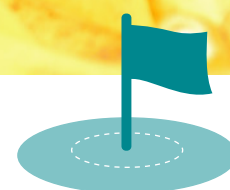
Food insecurity among the locals who are farmers, amidst a fairly strong agricultural production base, contributes to food insecurity in Rubavu. **Disposable income** ranks **5.1 out of 10**, with most families not able to sustain a decent level of income; this condition is aggravated by their low level of **diversification**, thus being very vulnerable to market changes and **crop failures**. **Food expenditure** accounts for **68%** of the weekly income, an even higher burden in rural parts of the country. The dependence on a limited set of **staple crops** for nutritional needs and sources of income increases vulnerability to food insecurity, particularly in years when **crop yields are poor**.^{1,10}



Policy environment



National



National Strategy for Transformation – NSTI (2017–2024)

The NSTI represents Rwanda’s comprehensive development framework, designed to advance the nation towards achieving **Vision 2050**. This strategy encompasses **nutrition, agriculture, and social protection** as fundamental components essential for national transformation. In the context of Rubavu District, characterized by rapid **urbanization**, NSTI steers initiatives aimed at mitigating **malnutrition** and improving **food security**. It calls for **multisectoral approaches** inclusive of agriculture, health, education, and social protection sectors to improve maternal and child nutrition through diversification of agricultural output and access to **nutrient-dense food**. It also calls for increased **agricultural productivity**, enhanced **value addition**, and assured access to services in an equitable way.¹²

Rwanda Food and Nutrition Security Policy

The Rwanda Food and Nutrition Security Policy, first introduced in 2014 and extended in phases ever since, aims to **eradicate malnutrition** in all its forms and ensure **food security** for all citizens. In the district of Rubavu, this policy facilitates activities that improve access to locally available **nutrient-dense food**, such as vegetables, fruits, and foods of animal origin. This will contribute to the reduction of **micro-nutrient deficiencies** in children and pregnant women through food production diversification, value addition, and fortification. The **main areas** of concentration include nutrition-sensitive agriculture, social protection programs, behavioral change communication, and nutrition education at the community level.¹²

Strategic Plan for Agriculture Transformation – PSTA5 (2024–2029)

The current PSTA5 provides a roadmap to transform Rwanda’s agriculture from subsistence-based into a **market-oriented** and **value-addition based** sector. It encourages agroecological methods of farming in order to enhance **crop diversification** and build resilience against **climate shock**. It also incentivizes participation by local farmers in sustainable agriculture through **efficient methods** of irrigation, climate-resilient production of crops, and enhancement of agricultural technologies to ensure the stable supply of nutritious food. This would involve enhancement in **market linkages** and improvement in the **livelihoods of farmers**.¹²

Rwanda National Early Childhood Development (ECD) Policy

This policy that was first implemented in 2016 aims to foster the **holistic development** of children from conception to six years through integrating health, nutrition, education, and protection services. ECD centers provide **nutritious meals** and **nutrition education** for children under five because **child malnutrition** is prevalent. The policy aspires to **support parents and caregivers** to stimulate proper nutrition behavior at home, so crucial for stunting reduction and the enhancement of dietary diversity. Additionally, the policy calls for building capacity among caregivers and community health workers for the better **wellbeing of children**.¹²

National School Feeding Program

Rubavu District benefits from the National School Feeding Program adopted in 2019, which ensures that every school-going child gets **nutritious meals** sourced from local farmers. The initiative improves the health of the children, their attendance in school, and their performance while improving the local economy through **linking smallholder farmers to the schools**. This process creates a **sure market** for the locally produced foods. The program also addresses **food safety** concerns and strengthens **rural economies** through the **Home-Grown School Feeding** model that empowers communities and ensures sustainability.¹²

Rwanda Climate-Smart Agriculture Program (2018–2030)

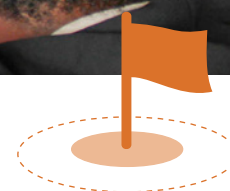
Rubavu District currently implements the Rwanda Climate-Smart Agriculture Program, which advances farming practices to address **climate change**, improves **food security**, and reduces **greenhouse gas emissions**. As farming is one of the major economic activities within the district, it encourages the use of drought-resistant crops, sustainable agricultural practices, and climate-resilient methods such as **conservation agriculture** and **agroforestry**. It will advocate for efficient **irrigation systems** that are water-effective and foster sustainable land management – one of the very important aspects of this region that receives both heavy rains and dry periods. Additionally, the program conducts **research** and provides access to **climate information services** for farmers.¹²

Rwanda Food Fortification Program

First introduced in 2014, large proportions of the district of Rubavu benefit from the efforts against micronutrient deficiency through **national food fortification**, with the **addition of vitamins and minerals** to staple foods like maize flour, wheat flour, cooking oils, and sugar. These help address the nutritional status of children and women in Rubavu, where **malnutrition** is still a challenge. This policy ensures access by the vulnerable groups of populations to food products with **fortification**, which responds to the nutritional needs, besides creating **public awareness** of the benefits of the fortified foods.¹²



District



District Plans to Eliminate Malnutrition (DPEM)

The DPEM in Rubavu is one intervention that has been regionally executed in regard to national goals on **reducing malnutrition** in 2018. Rubavu's DPEM focuses on ensuring **food safety** through the development of kitchen gardens, community-based nutrition programs, school feeding, and nutrition education at the grassroots levels. This policy is important to address **stunting** and high prevalence of **malnutrition** in the district, especially through **multi-sectoral involvement** in agriculture, health, and education sectors. It outlines nutrition interventions, identifies key stakeholders and resources, and actively engages community leaders and residents in nutrition activities to ensure a **cohesive and effective approach**.¹²

Rubavu District Development Plan (2018–2024)

The District Development Plan of Rubavu highlights **food security** with improved nutrition through **sustainable agriculture** and **climate resilience**. This focuses on increased production of nutrient-dense foods, agroforestry practices, increased market access for smallholder farmers, and infrastructure development. This policy plays more so an important link in connecting the **rural producers of agriculture** with the **urban markets in Rubavu**, agriculture being one of the most vital parts of the economy, whose population is currently increasing. The capacity building is supported and in line with the national policies, such as NSTI, focusing on **economic development, social welfare, and good governance**.¹²

Rubavu Agroforestry and Land Management Initiative

Introduced in 2019, this policy promotes integrated land-use approaches that enhance **food security** by combining **tree, crop, and animal systems** to improve land productivity while providing significant **environmental benefits**. The project supports the integration of growing **indigenous trees** together with crops to enhance soil fertility, reduce erosion, and increase the yields of nutrient-rich food. By promoting **agroforestry**, Rubavu contributes to biodiversity conservation, enhancing resilience against climate change, and the long-term sustainability of the local food system. Activities entail soil conservation measures, community training, and supporting sustainable agriculture practices to reduce **land degradation** and improve **farmers' income**.¹²

Final notes



Limitations

Despite the involvement of local city officials and the use of data generated by the NICE project, there remains a dearth of information that is focused solely on Rubavu City within the larger administrative unit. In cases where city-level data was unavailable, urban data from the broader administrative area or national data has been used as a reference.

Acknowledgments

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Further information is available on the **NICE webpage:**

nice-nutrition.ch