



Food and Agriculture  
Organization of the  
United Nations

# Rwanda's journey towards sustainable food systems

The processes and practices that made a difference



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The processes and practices that made a difference

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Cover photograph: Studying the health of plants in Rwanda

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# Abbreviations and acronyms

<b>ASWG</b>	Agriculture Sector Working Group
<b>AU</b>	African Union
<b>CAADP</b>	Comprehensive Africa Agriculture Development Programme
<b>CGIAR</b>	Consultative Group of International Agricultural Research
<b>EAC</b>	East African Community
<b>EDPRS</b>	Economic Development and Poverty Reduction Strategy
<b>FDI</b>	foreign direct investment
<b>FONERWA</b>	Rwanda Green Fund
<b>GDP</b>	gross domestic product
<b>ICT</b>	information and communication technology
<b>ILO</b>	International Labour Organization
<b>IMCC</b>	Inter-Ministerial Coordination Committee
<b>IMF</b>	International Monetary Fund
<b>MINAGRI</b>	Ministry of Agriculture and Animal Resources
<b>MINICOM</b>	Ministry of Trade and Industry
<b>MININFRA</b>	Ministry of Infrastructure
<b>NAEB</b>	National Agricultural Export Board
<b>NST1</b>	National Strategy for Transformation
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>PSTA</b>	Strategic Plan for Agricultural Transformation
<b>RAB</b>	Rwanda Agriculture and Animal Resources Development Board
<b>SDGs</b>	Sustainable Development Goals
<b>SSA</b>	Sub-Saharan Africa
<b>UN</b>	United Nations
<b>WDI</b>	World Development Indicators
<b>WFP</b>	World Food Programme



# Summary

Governments and other food system actors such as companies, investors, civil society and knowledge institutes are called upon to work together to enhance the sustainability, resilience and inclusiveness of food systems within the context of the 2021 Food Systems Summit, in order to meet the targets set by the Agenda 2030 and the Sustainable Development Goals (SDGs).

Governments need to know which options are the most appropriate and effective to achieve a transformation towards sustainable food systems. They require insights into the kinds of processes and practices that play an important role in putting appropriate policies and investments into place that pay due attention to all elements of the food system.

## KEY INSIGHTS

This appraisal provides ten key lessons from Rwanda's efforts to transform its food system:

- 1. Food system transformation processes need to be considered within and be relevant to their context.**
- 2. Responsible leadership is critical, and participation is the foundation of continued success.**
- 3. Key roles and the choice of approaches need to be continually reviewed.**
- 4. Policy development and implementation requires coordination and coherence.**
- 5. Diversify approaches and programmes to connect to different realities across the country.**
- 6. Food system transformation involves more than optimizing one dimension.**
- 7. New institutions need to anchor existing progress and establish a basis for future steps.**
- 8. A food system transformation process involves a balancing act.**
- 9. The food system transformation process may halt if continuity needs are not addressed.**
- 10. It is essential to draw on the resources and skills of others while your own are being amassed.**

This appraisal of the processes and practices in Rwanda is part of a broader three-country study<sup>1</sup> that assesses country policies and the institutional stakeholder dynamics and conditions which shape and sustain opportunities for food system transformation towards sustainability. The study aims to provide insights into national initiatives, policies, sector strategies and multi-stakeholder mechanisms that together can lead to sustainable food systems.

This is not a comprehensive study or an evaluation. Instead, this appraisal focuses on some of the key processes that have made and continue to make a difference in advancing towards sustainable food systems. Rather than presenting an elaborate overview of the outcomes of this process, it provides details of the context in which the described mechanisms are at work. As an initial study, this report describes a number of important dynamics that could be elaborated further in future work.

Unless explicitly mentioned, all statements are drawn from interviews and a validation workshop with well-informed representatives of different stakeholder entities (see Annex 1) involved in Rwanda's food system.

This appraisal presents key lessons from food, agriculture and environment-related institutional mechanisms, programmes and policies in Rwanda, considered against the backdrop of the country's agroecological conditions and relevant social, economic and political history. It also provides insights into trade-offs and tensions which involve a balancing act between strong leadership and meaningful participation, securing local food sovereignty and outward connectivity, intensifying and diversifying the (agricultural) economy, creating room for private sector entrepreneurship and providing central coordination – as well as a mindset focused on what is needed and possible.

Any attempt to understand Rwanda's food system and its related dynamics must take into account the country's recent past. The genocide against the Tutsi in 1994 profoundly marked the nation and in the aftermath the country began to forge a new direction. An examination of social and economic statistical trends over the period 1970-2017 shows a significant positive deviation starting in the late 1990s. Among others, this gradual shift in focus resulted in improved production numbers, followed by greater attention to productivity and subsequent profitability, and increasing attention to sustainability. It also saw a gradual rise in fine-tuned and contextualized approaches, with more attention paid to the diversity of landscapes and livelihoods, reflective of the expansion in types of policies and strategic plans being developed. Finally, there was growing recognition that Rwanda needed to look beyond agriculture and internal and nearby markets for both employment and food security. Over the past 25 years, Rwanda has become a key player in international development agendas, including Agenda 2030 and the SDGs, the African Union Commission (AU) Agenda 2063 and the East African Community (EAC) Vision 2050.

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<sup>1</sup> The other two countries in the study are Ireland and Costa Rica.

This appraisal adopts a dual approach to analysing the process of food system transformation in Rwanda over the past 25 years. The first approach focuses on major achievements and progress, namely: agricultural production and productivity; land reforms with improved land tenure security that enabled smallholder agriculture to flourish through access to finance and the removal of gender biases that hindered access to land by women; and the development of new sectors, notably information and communication technology (ICT). The second approach looks at issues that have yet to be tackled, namely: the prevailing high incidence of undernutrition; the need to improve participation in planning as stipulated in policies; challenges to financing further steps in the transformation process; and challenges to overcoming constraints regarding available arable land, or the capacity to innovate/transform. The study illustrates how these tensions and paradoxes form a rich experience to learn from in terms of the realities that most countries face.

The following five sections present the findings of this rapid appraisal. Section 1 outlines the performance and key characteristics of Rwanda's food system in its current state; Section 2 covers processes and conditions that have shaped Rwanda's food system to date; Section 3 reflects on the transformation process and its direction from five theoretical angles; and Section 4 presents some final reflections on the study and themes for further exploration.



# 1. Rwanda's food system



# 1.1. A brief overview

Food systems are understood as “the constellation of activities involved in producing, processing, transporting and consuming food” (UN, 2021), leading to outcomes in three major areas: food and nutrition security, socio-economic and political outcomes, and environmental outcomes.<sup>2</sup> In the case of Rwanda, the “food system” concept has not yet become embedded in discourse. This study therefore pulls together insights from the wider food and agriculture sector as well as related environmental processes, interests and concerns.

Since the late 1990s, Rwanda has made progress in each of the main dimensions of a food system, undergoing significant transitions in the process. The value of the agricultural sector has grown annually at an impressive 5 percent and more over the past 15-20 years and average yields of a variety of focus crops have increased strongly (World Bank and Government of Rwanda, 2020). Development has also been impressive over the last few decades, resulting in improved livelihoods for Rwandans. Life expectancy has risen from 49 years in 2000 to 66.6 years in 2017, while poverty (measured by the USD 1.9/day threshold) has decreased from 78 percent of the total population in 2000 to 56.5 percent in 2016 (World Bank, 2021a).

Land security improved following a comprehensive land reform, which was notable for granting women access to land titles. A wide variety of policies continue to address almost all dimensions of the food system (see Annex 3), setting ambitious goals such as achieving middle-income country status by 2020 and high-income status by 2030. Such goals have encouraged outside-the-box thinking, for example in the field of ICT, and capitalized on best practices and innovations in other countries (e.g. related to the efficient use of water and environmentally friendly pest control and soil conservation). Although serious investments have been made to upgrade the capacity of the workforce through training and education (UNDP, 2020), the country faces challenges in keeping up with rapidly changing global conditions (e.g. increased climate-change related challenges) and market dynamics (e.g. competition from other countries targeting the same export markets). A focus on infrastructure has seen significant improvements to roads and facilities, such as irrigation and milk collection centres, though further development is still required (Nimusima, Karuhanga and Mukarutesi, 2018; World Bank, 2020a). The private sector is relatively small compared to the size of the public sector with only a few large companies, but development in this area is a flagship policy of Rwanda's Vision 2050. Institutional reforms and innovation, such as the land reform, have created the necessary conditions for effective change in the food system, through the active promotion and integration of findings from agricultural and other research and government commitment to extension services, which concentrate mainly on focus crops.

<sup>2</sup> The short (non-exhaustive) definition comes from the UN's Food Systems Summit 2021 website: [www.un.org/en/food-systems-summit/about](http://www.un.org/en/food-systems-summit/about). Besides a focus on the activities of the food system, a food system approach implies a broader emphasis encompassing social, food security and environmental outcomes and the socio-economic and environmental drivers of these food system activities, as well as the ways in which these elements interact with each other (van Berkum, Dengerink and Ruben, 2018).

As noted earlier, the Rwandan food system is characterized both by significant advances and persistent challenges. Progress in the shape of land reform and productivity increases is countered by malnutrition, soil erosion, productivity gaps and the small size of land holdings. The government's ambition to transform the food system will require significant change on many different fronts, a process that will take time. The necessary political will and determination is present, but the potential for change is limited by the range of adverse conditions that need to be addressed. The following sections explore the ways in which Rwanda has dealt with these challenges and evaluate its achievements.

## 1.2. Rwanda's assets

Rwanda is a small country covering an area of just over 26 000 square kilometres situated at a relatively high elevation. The lowest altitude is 950 metres while the highest is 4 507 metres above mean sea level. The climate in different parts of the country is strongly influenced by variations in altitude, both in terms of temperatures and rainfall, while the pattern of rainy seasons varies as a result of climate change. Although Rwanda has a temperate tropical highland climate, temperatures are lower than the average for equatorial countries due to the high elevation. Some 46.3 percent of the country's total land area is arable, with 90 percent of domestic cropland situated on slopes with a 5 percent to 55 percent inclination. Permanent crops cover slightly less than 10 percent of the country while forests cover around 11 percent (World Bank, 2021b). Around one-third of forests are non-degraded natural humid forests.

As of 2015, Rwanda had the second highest population density in Africa. The total estimated population in 2020 was around 13 million and is projected to rise to 32 million by 2050 at current growth rates. Rwanda has a young population with close to 60 percent of the people under the age of 25. Young people are also the population group experiencing the most difficulty in finding adequate work (FAO, 2020). The Rwandan labour force is generally considered low skilled, with highly skilled staff concentrated mainly in cities and centres of government. Infrastructure such as roads has been expanded and has improved significantly over the past two decades, and the country operates its own airline, Rwandan Air. In fact, Rwanda now ranks 57th out of 160 countries on the 2018 Logistics Performance Index, a considerable development from 2007, when the country ranked 148th (World Bank, 2018).

Agriculture is the principal economic activity in Rwanda with around 72 percent of the working force employed in the sector (ILO, 2020), mostly in small-scale, subsistence, rain-fed farming that relies on traditional technologies and practices. The agricultural sector accounts for 28 percent of GDP. Priority crops (determined by the government) are maize, wheat, rice, Irish potato, beans, cassava, banana and, more recently, fruits and vegetables – the latter incorporated with the goal of improving nutritional outcomes among the population (Kathiresan, 2011). Tea, coffee and livestock products are the



main export-oriented commodities, while plantains, cassava, potatoes, sweet potatoes, maize and beans have the highest levels of productivity (World Bank and Government of Rwanda, 2020). In addition, the country exports dry beans, potatoes, maize, rice, cassava flour, maize flour, poultry and live animals to Eastern Africa and the Democratic Republic of the Congo.

Until the 1970s, agricultural production could be increased by expanding the amount of land devoted to agriculture. However, a shortage of land rendered this possibility unviable, and the focus switched to intensification through increased fertilizer use, improved seeds and other approaches. The average size of plots managed by Rwandan households is 0.6 ha, although around 30 percent manage less than 0.2 ha of land and nearly 15 percent cultivate less than 0.1 ha. This land shortage also affects the availability of forage and pasture required for livestock and the dairy sector, although the latter has enjoyed strong development in some parts of Rwanda. Land degradation represents a serious problem with very high levels of degradation observed across large areas of the country according to the ICPAC GeoPortal (ICPAC, 2021). This issue has attracted significant investments and triggered a nationwide campaign focused on land husbandry and soil conservation efforts, including the widespread construction of terraces and tree planting (see Figure 1). Underemployment in agriculture remains a reality and limits total factor productivity.

In 2008, Rwanda instituted a ban on non-biodegradable plastic bags, a notable development that reflects political willingness to make unconventional decisions in favour of sustainability when necessary. However, the onus the policy placed on the manufacturing sector to import expensive biodegradable packaging and machinery underscored the trade-offs that need to be considered and mitigated when taking steps towards sustainability.

In 2011, Rwanda became the first African country to pledge to meet land restoration targets as part of the Bonn Challenge. By 2018, 35 percent of the country's 2-million ha restoration goal had been attained due to national and international investments (IUCN, 2020).

**Figure 1.**  
Terraced slopes  
in Rwanda





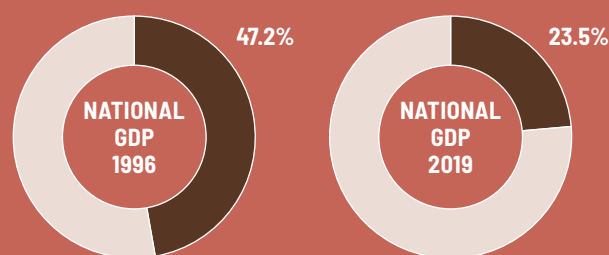
## 1.3. Key food system-related indicators

The following selected indicators are taken from the World Bank (2021a), except where otherwise shown.

### Food system activities and related conditions



THE CONTRIBUTION OF THE AGRICULTURE, FORESTRY AND FISHING SECTORS COMBINED TO THE NATIONAL GDP HAS DECREASED IN RECENT DECADES



50 PERCENT OF THE COUNTRY'S RURAL YOUTH WORK IN AGRICULTURE, WITH MANY UNDEREMPLOYED DUE TO SMALL FARM SIZE

(Diao, 2017)

RWANDA RANKED AS THE TENTH FASTEST GROWING ECONOMY WORLDWIDE DURING THE PERIOD 2000-2010.

(Mugabo, 2016)

#### World Bank Doing Business Report

2007

RWANDA: 158th place globally  
(Redifer et al., 2020)

2020

RWANDA: 38th place globally  
(World Bank, 2020b)

#### Index of Economic Freedom

2021

RWANDA:  
47th freest economy in the world  
2nd in the Sub-Saharan Africa (SSA) Region

(The Heritage Foundation, 2021)

#### Corruption Perceptions Index

2020

RWANDA:  
49th globally  
4th in the SSA Region

The country scores better than some OECD countries

(Transparency International, 2021)

## Food system outcomes

### Gender

#### Global Gender Gap Index 2021

RWANDA:

**2nd in SSA**

**7th globally**

The country also scores higher than regional (SSA) averages on the **UN Gender Development** and **Gender Inequality** indexes

(WEF, 2021)

### Human Development Index

RWANDA:

**0.192 in 1994**

**0.543 in 2019**

Rwanda ranks **160th**, between Uganda (159) and Nigeria (161)

(UNDP, 2020)

### Global Food Security Index

**2020**

RWANDA:

**104th out of 113 countries**

**21st out of 28 countries listed in the SSA Region**

(The Economist, 2021)

### Prevalence of undernourishment

**35.6% (2004)**

**22.2% (2012)**

**35.6% (2018)**

### Under-five stunting

**45.3% (2005)**

**33.1% (2019)**

(INSR and ORC Marco, 2006; INSR, MOH and ICF, 2020)

### CO2 emissions per capita

**0.072 metric tonnes (Rwanda 1992)**

**0.096 metric tonnes (Rwanda 2016)**

**6.468 metric tonnes (European Union 2016)**

**36 PERCENT OF THE POOREST HOUSEHOLDS OWN ONLY 6% OF TOTAL FARMLAND, WITH AN AVERAGE OF 0.1 ha PER HOUSEHOLD**

(Redifer et al., 2020)



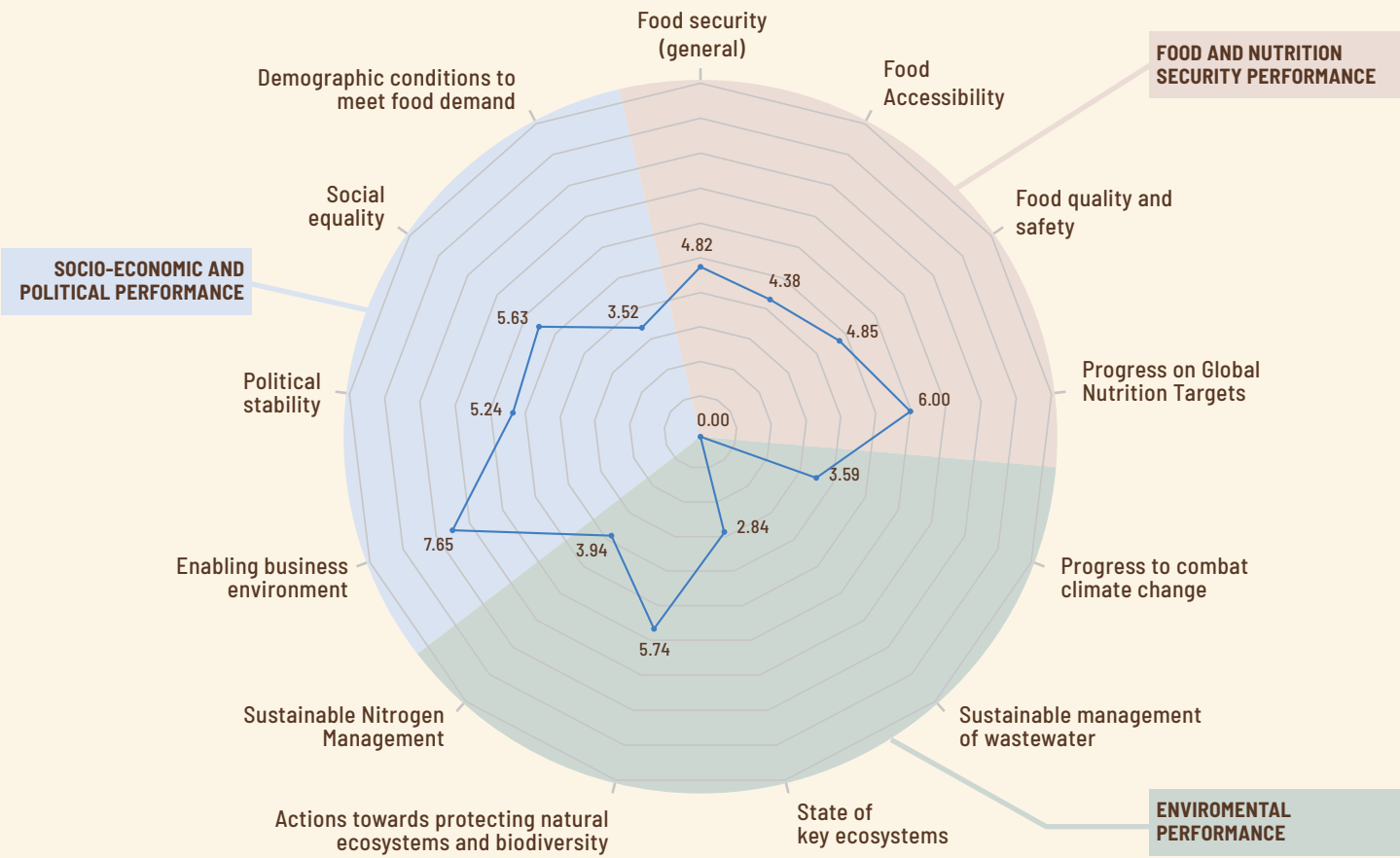
# 1.4. Rwanda's current food system performance

An overview of key food system outcomes in Rwanda using publicly available data is shown in Figure 2. This spiderweb graph shows data for the three key domains of food systems: food and nutrition security, socio-economic and political dimensions, and environmental sustainability dimensions.<sup>3</sup> This overview aims to provide an impression in broad terms of the performance of Rwanda's food system across these three dimensions.

Although Rwanda has made considerable progress on global nutrition targets, in absolute percentages there are still major challenges in the field of nutrition (see the statistics on stunting and undernourishment in Section 1.3). The graph does not make clear which demographic groups are currently benefiting the most from the progress made.

<sup>3</sup> This spiderweb is based on a balanced estimate of 13 food system indicators, using publicly available data sets and indexes. It makes no claim to be an overall performance assessment. Further details are available in Annex 2.

Figure 2. Performance of the Rwandan food system across three dimensions



**Note:** score 1-10, where 1 is highly insufficient and 10 is excellent. Each score is based on either the maximum possible score for that indicator or, if available, a global target for that indicator.

Environmental performance receives mixed scores, with biodiversity scoring higher than other topics. While various efforts are ongoing, the low scores for the “state of key ecosystems” imply that the country is not benefiting from the potential ecosystem services of trees, grasslands and wetlands (e.g. carbon sequestration or biodiversity habitats). As noted earlier, progress has been made in combating land degradation and erosion, but these issues still represent a major vulnerability of the food system.

Social, economic and political performance includes a set of indicators that shed light on the enabling context for food systems to thrive. This graph indicates that Rwanda’s business environment is favourable, which may have a positive impact on agrifood businesses in the country. However, a growing population and a strong urbanization rate combined result in increased demographic pressure on the food system which may pose a serious challenge to meeting food demand.



## 2. Important processes and conditions shaping the Rwandan food system



Seven important processes and conditions have contributed to shaping the Rwandan food system. Both internal and external in character, they relate to key topics such as governance, leadership, policy architecture, the environment, capacity building and external support.

## 2.1. Modes of governance following the 1994 genocide

Few expected that Rwanda would be one of the strongest developing and performing countries in Africa twenty-five years after the genocide of the Tutsi people. Much of the credit for this state of affairs lies with the mode of governance and development focus adopted in the mid-1990s. Rwanda needed stability, but also a way to move beyond the terrible events of 1994. A vision of hope for a better future and the assurance that the country would not remain mired in conflict were essential. In this regard, the government worked to facilitate social cohesion and discipline through political stability and continuity of leadership. The primary and urgent focus was to improve food availability, mainly by raising production levels. The strong role that the government plays in the food system transformation to this day needs to be understood in this context. The required transformation involved a top-down governance approach that over time was balanced with a bottom-up approach. This dynamic required a shift in mindset for leadership at different levels and included greater freedom for the private sector in terms of creative entrepreneurship.

### KEY INSIGHT 1

#### **Food system transformation processes need to be considered within and be relevant to their context**

The recent history and context of Rwanda informed transformation governance in specific and appropriate ways. Other (post-conflict) countries can adapt these lessons to their own reconstruction efforts.

## 2.2. Leadership transformation and recalibration

Efforts to strengthen Rwandan society and boost the economy from the mid-1990s onwards focused in particular on attaining better living conditions for the Rwandese, achieving measurable results as can be observed in the statistics above (see Section 1.3). Underpinning these objectives were policies and strategic plans put in place by the government, notably Vision 2020 and the recent Vision 2050, which offered a panoramic and transformative view of the future. These gave the country a clear sense of direction and engendered excitement about this potential new future seemingly within reach. Two factors stand out in comparison with other African countries: commitments to agricultural development in terms of the level of effective public expenditure, and land reform and related gender-related improvements which catalysed further improvement and investments in land care.

### KEY INSIGHT 2

#### **Responsible leadership is critical and participation is the foundation of continued success**

Strong leadership is vital to signaling the urgent need for transformation and to keeping momentum going. It also helps to provide the kind of stability that attracts donors and investors. Particular efforts are required to locate the right balance between strong government and ensuring sufficient space for other actors to contribute. This includes finding a good balance between incentives for the faster moving elements of society and benefits for more vulnerable, less visible groups.

A prominent mode of governance applied by the government is the Imihigo, or performance contract. These contracts set ambitious targets and hold people accountable at all levels, and in so doing have helped to push the economy forward. Some informants considered them a key factor underlying Rwanda's food system transformation, while emphasizing the importance of knowing when accountability mechanisms are appropriate and fair, and when they become too rigid and authoritarian.

Over the past 10-15 years, the government has been navigating its own role in the transformation process in relation to that of other stakeholders. One example is the handing over of responsibility for policy evaluation to an independent agency; another is a gradual reduction of its central role and the increase in the role played by other actors in society, notably the private sector. Citizen participation at the grassroots level has been encouraged through the creation of various fora such as the Twigire

Muhinzi Committees, the Joint Action Forum at district level and the agricultural Sector Working Group at ministerial level. The internalization in government of the traditional Rwandan aphorism “if you want to go far, go together” led to an increase in participatory processes in policy planning, implementation and evaluation. Prior to this period, the government had in essence adopted the main functions of the private sector. Today, a vibrant private sector is one of the six pillars of Rwanda’s Vision 2050. The private sector is significantly stronger than 10-15 years ago, with the emergence of large companies in the agro-industry sector such as Inyange Dairy Ltd, rice and maize-milling factories, and well-established coffee-and tea-exporting firms. Examples of foreign direct investment (FDIs) such as the Unilever Tea Estates are well established in Rwanda, and a large irrigation scheme, Gabiro Agribusiness Hub, is being set up as a joint venture between Rwanda and an Israeli firm (Netafim) to establish export-oriented commercial farm estates.

The Rwandan government continues to set major goals, such as achieving all SDG targets for Rwanda by 2030 and becoming a high-income country by 2050. Partners including the World Bank (World Bank and Government of Rwanda, 2020) have acknowledged these ambitions and, while appreciative, have cautioned that the potential stress may negatively affect performance.

### KEY INSIGHT 3

#### **Key roles and the choice of approaches need to be continually reviewed**

As food systems evolve, new dynamics are introduced and new information and insights become available. Periodic recalibration is essential, including in terms of roles to play. A transformation process is not just a simple, linear development.

## **2.3. Policy architecture development**

Over the past two decades, numerous food system-related policies and strategic plans have been put in place. Examples include the National Agriculture Policy, the Strategic Plan for Agricultural Transformation, the Crop Intensification Programme, the Land Policy, the National Policy for Water Resources Management, the Biodiversity Policy, the Agricultural Extension Strategy and many more (see Annex 3 for an overview). A historical timeline of these policies, strategies and programmes clearly shows a broadening in terms of focus.



## KEY INSIGHT 4

### Policy development and implementation requires coordination and coherence

Maintaining coherence and coordination in policy formulation and implementation is key. In Rwanda, policy guidance, coordination and accountability are arranged at the highest levels, including by the Government Coordination Unit (GACU) Coordination Committee (IMCC), which is chaired by the Prime Minister. This approach safeguards policy coherence; however, it is equally important that multiple policies remain implementable.

However, the many different documents and related implementation processes require coherence and coordination if they are to work in unison towards the same goals. Vision 2020 and the National Strategy for Transformation have played an important role in creating such coherence, while a number of processes and new institutions have helped enhance coordination. Notable examples include the merger of ministries, the Agricultural Sector Working Group, the Integrated Development Plans Steering Committee, the (forward and backward) Joint Sector Reviews, and the Inter-ministerial Coordination meeting and economic and social clusters. The Ministry of Finance and Economic Planning, in particular, played a pivotal role in achieving policy coherence by verifying all budgets and plans to ensure the appropriate allocation of funds. If environmental sustainability, for example, needed to be mainstreamed further into various policies and strategies, the Ministry would play a central role. Finally, the Office of the Prime Minister plays a key role in overall coordination. Donors and development partners are required to align their efforts with national strategies, in order to support coordination among all partners. The Office of the Prime Minister also ensures that all donors are subject to a division of labour in order to avoid overlap among interventions, while coordination and accountability is conducted through Sector Working Groups. At the decentralized (district) level, a Joint Action Forum for each particular programme will involve all partners concerned. Responsibility for coordinating the different implementation processes is given to mayors. Box 1 provides a detailed explanation of the agrifood policy development process in Rwanda.

## BOX 1

### Policy processes: Cross-sector collaboration and agrifood strategy development

A key policy instrument in Rwanda is the series of strategies collectively referred to as the Strategic Plan for Agricultural Transformation (PSTA). In 2018, the Government of Rwanda updated its National Agriculture Policy, which was then implemented through the fourth PSTA. This plan was developed under the aegis of Rwanda's Vision 2050 and the National Strategy for Transformation (NST1), the country's key medium- and long-term planning reference documents. PSTA 4 serves as Rwanda's National Agriculture Investment Plan under the African Union Malabo Declaration on Accelerated Agricultural Growth.

#### How strategy is formed

Agricultural strategies are influenced by the national agenda (Vision 2020 and 2050) and informed by medium-term strategies such as the recently concluded Economic Development and Poverty Reduction Strategy (EDPRS) and the current NST1. The plans are also influenced by international commitments such as the SDGs, the Malabo Declaration and the Paris Agreement on climate change, with a view to shaping the agricultural and food systems agenda.

The formulation of strategies is undertaken at the level of Agriculture Sector Working Group (ASWG) which is a multi-stakeholder platform (the government, development partner, private sector, civil society). The ASWG is chaired by the high-level official in the person of Permanent Secretary in the Ministry of Agriculture and Animal Resources and co-chaired by a representative of Development Partners (currently from World Bank). In the formulation of the strategy specific expertise is sometimes sourced from outside the country with the support of development donors when required.

#### Putting strategy into action

Once a strategy is validated at the level of the ASWG, it is submitted to the Ministry of Agriculture and Animal Resources for ownership and agreement, and is then forwarded to the Economic Cluster for approval. The Economic Cluster is chaired by the Minister of Finance and Economic Planning, and its members include, among others, the Ministry of Agriculture and Animal Resources (MINAGRI), the Ministry of Infrastructure (MININFRA) and the Ministry of Trade and Industry (MINICOM).

Once the strategy has been approved by the Economic Cluster and all financial implications and inputs have been integrated, it is submitted to the Office of the Prime Minister for analysis by a pool of policy analysts. The document is then discussed by the Inter-Ministerial Coordination Committee (IMCC), which is chaired by the Prime Minister with key ministers whose mandate in any way relates to the proposed strategy.

Once cleared by the IMCC, the strategy is submitted to Cabinet for approval, implementation and resources allocation. The Rwanda Agriculture and Animal Resources Development Board (RAB) and the National Agricultural Export Board (NAEB) are the implementing bodies for agrifood government policies.

Once resources have been allocated and deliverables agreed upon, performance contracts are signed between each implementation level and the responsible government office. The performance contracts are evaluated at the end of the year.

## 2.4. Land, soil and environment

Soil fertility and a moderate tropical climate are longstanding features of Rwanda. However, land degradation and soil erosion, caused in part by pressures related to rising population numbers, have become a major concern. The increasing fragmentation of land holdings is also a cause for concern, as good livelihoods are harder to achieve with smaller farms – although it is important to note that not all small-scale farmers live in poverty.<sup>4</sup> Limited land security has often led to less interest among farmers in investing in their land, for example, by planting trees, taking other measures to reduce erosion or improving soil fertility.

Government policies and strategic plans have endeavoured to address this situation in at least three ways. First, by improving land security through a process of land reforms over the past 15 years.<sup>5</sup> Granting women the ability to possess land titles (in terms of land use rights) not only represented an important step in equalizing opportunity, but it also improved the potential contribution of women to the economy. Second, agricultural research, innovation and extension addresses agricultural practices that cause land degradation and erosion, for example, through soil conservation techniques such as contour ploughing. Third, performance contracts, as mentioned above, hold farmers accountable both in terms of production and land and soil management. Land use is guided by the National Land Use Master Plan which delineates and protects land designated for agriculture. Farmers grow crops suitable to the agro-ecological zone but government support is provided mainly for eight priority crops selected for their impact on food and nutrition security. However, farmers are free to grow crops of their choice, including emerging crops for businesses such as essential oils.

Initially, these policies and strategic plans did not pay significant attention to wider environmental impacts beyond reducing erosion. However, the last decade has seen environmental sustainability become a more central focus, institutionalized through instruments such as the Green Growth Strategy and the Rwanda Green Fund (FONERWA), popularized through programmes such as Green Villages and Green Schools, and supported by the upcoming role of civil society organizations focusing on the environment. This has included more attention paid by ministries to approaches such as integrated pest management and integrated soil fertility management. However, the tendency of the Ministry of Agriculture and Animal Resources (MINAGRI) and the Rwanda Agriculture and Animal Resources Development Board (RAB) is to focus on productivity.

<sup>4</sup> From 2008 to 2012, Rwanda's economy grew at an average of 8.2 percent annually. At the same time, more than 1 million Rwandans were reported to have been lifted from poverty in just five years; many of them were farmers (MINECOFIN, 2013).

<sup>5</sup> From 2007 to 2012, the land under consolidation grew from 28 788 ha to 502 916 ha (World Bank and Government of Rwanda, 2020).

## 2.5. Agriculture, employment and subsidies

The agricultural sector remains the single most important sector in terms of employment. As noted earlier, average landholdings are extremely small with no opportunity to practice the type of agricultural involution such as experienced in Indonesia (Geertz, 1963). This means that many youth have only part-time employment possibilities in agriculture. The sector is also largely dependent on rainfall with very limited irrigated land. This makes the country particularly susceptible to the effects of climate change such as erratic rainfall patterns, which in the case of extreme rainfall cause erosion due to the sloped land. The government has been able to help increase yields through programmes that subsidize chemical fertilizer and pesticides, but these apply only to prioritized crops. Moreover, the effects of fertilizer subsidy programmes have not been optimal in many cases due to low yield responses to fertilizer and the small quantity of fertilizer applied (33 kg/ha). The shift from focusing on production levels to a focus on productivity, and then to profitability, has encouraged outside-the-box thinking with a view to increasing yields through the application of agrochemicals, but better results could be achieved by improving the proper use of chemical fertilizers, among others.

### KEY INSIGHT 5

#### **Diversify approaches and programmes to connect to different realities across the country**

Rather than using blanket approaches and silver-bullet “solutions”, consider context specifics such as agro-ecological conditions and actor groups, and look for what is appropriate and fitting there. For example, some crops do better in one region than another, and some crops such as rice, may actually not be so profitable for Rwandan farmers. This requires bottom-up influence on policy goals and priorities.

The Government of Rwanda has created financial incentives to promote the production of agrifood products. As an example, agricultural inputs and non-processed goods are exempt from VAT, while small-scale farming activities not exceeding an annual turnover of RWF 12 million are exempt from income tax. In addition, the recently approved Law on Investment Promotion and Facilitation (2021) highlights horticulture, other high-value crops and agro-tourism among priority economic sectors that can benefit from investment incentives. There is also active collaboration between the government and a variety of research institutes, notably the Consultative Group of International Agricultural Research (CGIAR).

Although agriculture in Rwanda is constrained by a number of factors, numerous opportunities are being explored and developed further. These include agroforestry and aquaculture as well as services such as weather insurance and the use of ICTs in agriculture. Land registration has also made it possible for farmers to use land titles as collateral to gain access to credit to invest in their land.

The present subsidy scheme functions as a blanket subsidy as a result of the national orientation towards increasing food production and providing support to anyone capable of performing the task. This means that private investors with skills and resources to invest in agriculture are not excluded from the input subsidy scheme provided that they are investing to improve agricultural productivity. Both large-scale and small-scale farmers receive subsidies but the latter also benefit from other social protection programmes such as the One Cow Per Poor Family initiative, free seed and fertilizer packages, cash payment from public works and so on. In addition, the government has intensified its focus on nutrition, including through food safety and food fortification policies and consumer awareness campaigns. The Green Revolution also had a major influence on policies, although concerns have been raised about the potential environmental trade-offs (Clay and Zimmerer, 2020).

## 2.6. Creation of capacities for change

In its efforts to transform agriculture, the food system and the wider economy, the Rwandan government must address constraints on capacities at all levels. Efforts in this regard have resulted in the appointment of highly skilled and knowledgeable experts to government, for example in MINAGRI and RAB, but need to spread further to different levels (e.g. province, district, sectors and cells/villages). The government is no longer taking a single-handed approach and, instead, is inviting and/or creating stakeholder bodies to play an important role in the ongoing transformation process. Rwanda also needs to capitalize on the entrepreneurial creative capacity of the private sector. Their involvement is specified in Vision 2050 and elaborated in policies and strategies, but remains limited in terms of overall contribution to the economy.

Rural communities have also played a vital role in the transformation processes at the grassroots level, and are increasingly involved as participants rather than as mere recipients. This is also true of cooperatives, consumer organizations (e.g. ADECOR) and initiatives such as Green Villages. The voices of farmers, in particular, are crucial to the transformation and are increasingly heard in a variety of fora. In this regard, cooperatives are well placed but often lack the necessary organizational capacity to play their roles. Accordingly, a government body, the Rwanda Cooperative Agency,



was set up to oversee the implementation of related policies, and in 2018, a revised National Policy on Cooperatives was adopted to promote accountability and to ensure the meaningful participation of members in the management of cooperatives. Technical knowledge and skills for smallholders, as well as management skills, also require further attention. This would necessitate a significant investment in education in a context where enrolment and finalization rates in secondary and tertiary education are still relatively low.

In the midst of all these challenges, it is easy to forget the significant progress that has already been achieved. The government has demonstrated the motivation and political will to innovate and develop new opportunities for the economy, and has dared to take risks in the process. It is highly supportive of research and actively seeks out proven innovations applied elsewhere to capitalize on their potential, thereby expanding the available options. This approach includes inviting independent evaluations and reviews and partnering in assessments with organizations such as the World Bank. But there is also a need for more home-grown capacity. At present, many Rwandese study abroad and gain experience in organizations such as CGIAR, which can be applied on their return. This process also creates new perspectives for Rwandan youth and a growing sense of purpose that cuts across organizations and individuals.

## 2.7. New opportunities and external support and inspiration

Strong institutions, political stability, security and an improving business climate have made Rwanda more attractive for foreign investment. Support from the International Monetary Fund (IMF) has facilitated strong public investment, which has played a major role in Rwanda's ongoing food system transformation. Rwanda is also the fourth most popular country for ICT investors in sub-Saharan Africa (Malabo Montpellier Panel, 2019), a consequence of intensified government focus over the last five years on diversifying the economy, and policies, strategies and programmes specifically targeting the private sector. This approach is rooted in the knowledge that agriculture cannot remain the core of the economy if Rwanda is to achieve its highly ambitious economic goals – notably, to become a high-income country by 2050.

Rwanda is actively looking beyond its borders for inspiration in terms of technologies and wider innovations. This outward orientation is also reflected in the country's commitment to the SDGs, the Malabo Declaration, the Paris Agreement on climate change and the pillars of the Comprehensive Africa Agriculture Development Programme (CAADP). Rather than attempting to deliver the food system and economic transformation in isolation, Rwanda is actively developing science and

technology links, international partnerships and (regional) markets, while public investment in infrastructure is expected to encourage private sector investment in (agri) business. Rwanda is also aspiring to become the leading ICT hub in Africa (The ICT Hub Strategic Plan, 2019-2024). The Rwandan government is actively seeking advice and support as it undergoes the transitions necessary to achieve a more vibrant private sector and private sector-led growth, increased external private investment and enhanced productivity.

However, investments in road, electricity and water-related infrastructure, among others, must also benefit agricultural development – for example, irrigation (see Figure 3), mechanization, reduction in greenhouse gas emissions and post-harvest technologies (e.g. drying and cold storage). Such investments will help make agriculture and agribusiness more attractive to youth. Rwanda has also started to enact and implement laws and regulations to attract private sector investment (e.g. seed companies) and to promote private sector-led agriculture.

At the same time, it is essential to review these different approaches to establish which among them work best, or fail to produce the desired results, and to avoid expanding options beyond requirements, for example, in terms of electricity generation (Dye, 2020). The same maxims apply to urbanization, connecting to regional demand for products and services, organizing economic activity more efficiently (e.g. in urban areas) and improving infrastructure. This will involve further strengthening of policies and institutions, and establishing better linkages with people and their interests at the local level.



**Figure 3.**  
Irrigated field in  
Nyagatare district,  
Rwanda



# 3.

## Interpreting findings from a food system transformation perspective

3 INTERPRETING FINDINGS FROM A FOOD SYSTEM TRANSFORMATION PERSPECTIVE



Having examined the processes and practices of Rwanda’s food system actors, the next step is to interpret the findings in the context of a transformation towards sustainability. This section explores five different perspectives in relation to a food system transformation process: 1) types of sustainability transformation, 2) a multi-level perspective (MLP) on sustainability transitions, 3) leverage points for intervening in systems, 4) a strategic scoping canvas, and 5) collective capabilities for food system transformation. The focus here is on presenting some key take-aways from the application of these perspectives, in order to help the reader consider useful categories for interpreting transformation<sup>6</sup> processes in other countries in terms of their focus, strategic orientation and emphasis, and relevant capacities for change.

# 3.1. Types of sustainability transformation

In general terms, three dimensions of food system sustainability can be considered: socio-economic sustainability, environmental sustainability, and food security sustainability (van Berkum, Dengerink and Ruben, 2018). In Rwanda, the government’s initial focus was on ensuring the availability of sufficient food for the population, especially in the wake of the 1994 genocide. In order to create a basis for improving and sustaining food security, the focus then shifted towards socio-economic sustainability, exemplified by efforts to improve agricultural productivity. Although addressing land degradation was already on the agenda, environmental sustainability became a more serious focus in policies and strategies in the late 2000s. It could be tentatively concluded that Rwanda has now entered a phase where efforts to address the three dimensions of sustainability in policy have become more balanced, although improving socio-economic sustainability remains the main priority.

## KEY INSIGHT 6

### Food system transformation involves more than optimizing one dimension

A strong push for increasing the productivity of staple crops in Rwanda has had a major effect on food availability. However, these efforts have proven insufficient to address widespread stunting among other issues. Thinking in terms of systems means trying to reconcile multiple targets simultaneously.

<sup>6</sup> Guijt et al. (2021) provide further details on these sense-making frameworks in the context of this study.

## 3.2. A multi-level perspective on sustainability transitions

This perspective considers ways in which the performance of a (food) system changes over time as a result of internal dynamics, wider context dynamics (in society and the natural environment) and, specifically, the introduction of innovations. Consideration of the ways that dominant (food) system characteristics (e.g. type of land governance) may make it difficult or impossible to innovate in a particular field helps to problematize the efficacy of introducing innovations (Geels, 2002).

The Rwandan government has played a key role in opening up the food system to opportunities for change, by becoming more receptive to innovations. Even deeply ingrained patterns such as those related to land titles and gender have been addressed, with innovations such as the land reform effectively influencing food system change. Food system lock-ins in relation to limitations in agricultural productivity, human capacities and economic diversity could be opened up by attracting donor funding. This approach enables investment in infrastructure and funding subsidy programmes with a view to increasing agricultural productivity.

## 3.3. Leverage points for intervening in systems

This perspective considers a range of ways of influencing (food) system change and the potential for change that each one offers. For example, changing production levels does not lead to the depth of transformation that a shift in mindsets or paradigms can bring about. The implication is not that one approach is better than the other, but rather that different options (with their different potential for influencing change) need to be considered strategically in relation to the respective goals and ambitions. For example, if profound change is required, changing production levels or subsidies may not suffice (Meadows, 1999; Abson et al., 2016).

Initially, the Rwandan government focused on trying to achieve systemic change in a quantitative manner, notably in terms of raising production levels through subsidies on fertilizers and seeds. Although important, this approach has a limited scope for change. The land reform addressed a higher leverage point and thus had a deeper effect on agricultural conditions.



## 3.4. A strategic scoping canvas

This perspective considers the ways in which the focus of policies and strategies may shift over time, ranging, for example, from optimizing existing practices to redesigning and transforming practices, or from piecemeal engineering (focus on separate food system elements) to systemic/integral/holistic approaches (Wigboldus, Brouwers and Snel, 2020).

Initially, the Rwandan government focused on optimizing production and productivity. This approach was not intended to effect food system transformation but rather to find solutions for pressing problems. Gradually the scope of their efforts expanded to encompass more serious change. A fully fledged transformation is actually still pending as Rwanda prepares to evolve from a low-income to a high-income country within the next 30 years. Such transformation would, among others, necessitate a significant diversification of the economy, a reduced role for agriculture and better food system outcomes both socially (end of hunger and undernutrition), and environmentally (landscape restoration and conservation).

### KEY INSIGHT 7

#### **New institutions need to anchor existing progress and establish a basis for future steps**

Rwanda has put in place a wide range of policies, strategies and related programmes, and also created new legislation and ministries, and platforms for joint policy formulation, as well as independent agencies such as the Institute of Policy Analysis and Research (IPAR). These steps play a critical role in the process of institutionalizing transformation.

## 3.5. Collective capabilities for food system transformation

This perspective considers five core capabilities (adapted from Baser and Morgan, 2008) that shape overall capacity (see Table 1). It focuses on human and social capital and is applied here to food system transformation capacity. All food system actors in Rwanda have something to contribute in terms of their abilities. They include farmers, traders, processors, retailers, the food service industry, various government agencies, research and education, environmental advocates and consumers. Together and in interaction, their collective capabilities shape food system transformation capacity.

**Table 1.** Collective capabilities for the transformation of the Rwandan food system

	CHARACTERIZATION OF THE SITUATION IN RWANDA
<p>Capability to <b>resource, act and deliver</b> for sustainability transformation</p> <p><i>Key words: intervention management (doing things right), resource allocation</i></p>	<p>Rwanda has made remarkable progress over the last few decades due to the efficacy and resourcefulness of its government. A mix of new policies and strategies covers most dimensions and dynamics in the food system, and many and different types of programmes have been and are being implemented, ranging from subsidy programmes in agriculture to Green Villages, ICT hubs and more. Some initiatives were introduced too rapidly and required adjustment (e.g. toning down top-down approaches and moving from blanket approaches to more targeted and diversified interventions). However, the capability to resource, act and deliver (notably, through performance contracts) is a strong asset of Rwanda.</p>
<p>Capability to <b>relate and partner</b> for sustainability transformation</p> <p><i>Key words: relationships and collaboration</i></p>	<p>The government has a strong track record of partnering with external organizations (notably IMF and the World Bank as well as bilateral and multilateral relationships). This approach has supported the above capability (to resource, act and deliver), illustrating how one capability can enable another. However, the government attempted to achieve too much by itself over a long period of time – a consequence of Rwanda’s particular historical context. Gradually, the transformation approach evolved into a partnership approach and has extended to the private sector, largely because of the priority accorded to economic sustainability. There is still room to expand this approach to other parts of Rwandan society, notably vulnerable smallholder farmers. Rwanda’s efforts to engage women in the transformation of society, effectively making them active partners in and potential contributors to the transformation process, makes it an example to many other countries.</p>
<p>Capability to <b>adapt and self-renew</b> to align with sustainability transformation requirements</p> <p><i>Key words: urgency responsiveness and willingness to change</i></p>	<p>The food system transformation process has required regular adjustments to account for emerging insights and the limitations of certain policies. The government has demonstrated a willingness to take risks and to innovate, and has also reacted positively to the advocacy of civil society organizations, for example, by improving nutrition programmes, putting in place food safety policies and harnessing the potential of food fortification. The government has also created space for the private sector to play a more active role. Such changes imply changes in the role of government, with steps taken as part of an ongoing process to emphasize co-development as a part of the transformation of food systems, and capitalize on the potential of different types of stakeholder groups across society.</p>
<p>Capability to <b>address diversity and achieve coherence</b> in sustainability transformation</p> <p><i>Key words: inclusion and coordination, leadership, doing the right thing</i></p>	<p>Achieving coherence has proven easier than addressing diversity. Government visions, policies and strategies have played a key role in aligning and creating coherence across the variety of interventions, including those implemented by external organizations, as well as adaptations in agricultural practice by farmers, towards making a contribution to set objectives and targets. Internally, in terms of policies and strategies, Vision 2020 and 2050, and the National Transformation Strategy, have served to create coherence among the wide variety of sector policies and strategies. Addressing diversity has been more of a challenge. Initially, the government applied a blanket approach, then gradually paid more attention to fine-tuning policy and plans in relation to the diversity of agroecological conditions and groups in society. This area remains worthy of more attention.</p> <p>This capability may also be considered in terms of orienting the food system transformation towards sustainability aspirations. The primary focus to date has been economic sustainability, and significant efforts and gains can still be made in the field of social and environmental sustainability.</p>
<p>Capability to <b>anchor</b> food systems sustainability transformation <b>in relevant institutions</b></p> <p><i>Key words: institutionalization and consolidation of achievements</i></p>	<p>This capability is one of the strengths of Rwanda. The land reform represents an example of anchoring different elements in laws and regulations, as mentioned in Sections 1 and 2. The Green Growth Fund is a model for creating a basis for seriously addressing environmental concerns on a long-term basis. The delegation by the government of certain evaluation roles to an independent organization (IPAR) is a good precedent for the creation of new institutions to enable the professionalization of system-based transformation.</p>

# 4.

## Final reflections

4 FINAL REFLECTIONS





This appraisal has tentatively explored processes and practices that have been instrumental in Rwanda's food system transformation over the past decades. It is evident that various dimensions of the Rwandan food system have changed significantly with good results, drawing international attention and admiration. The Rwandan government is actively guiding further steps and has set extremely high ambitions for the country (Vision 2050). At this point in time, significant challenges remain, especially in the fields of employment, education, poverty and undernutrition. Rwanda will need to diversify its economy and is dependent on the ability to attract funding/investments to be able to do so. It will also need to embrace a more inclusive approach to transformation (FAO, 2020). In addition, Rwanda is one of many countries that need to adapt significantly to the effects of climate change. A government that assumes clear leadership in this process is critical and the fact that the Rwandan government has assumed this role holds promise for the future. The youthful character of the population adds to this promise but also requires serious innovation, as 18.7 percent of youth are unemployed, and around 60 percent are underemployed (FAO, 2020).

#### KEY INSIGHT 8

### A food system transformation process involves a balancing act

Transforming Rwanda's food system involves finding the right balance between different priorities that can be hard to reconcile. Inevitably, there will moments when the balance weighs in favour of particular priorities and may require adjustment. It is important to remain open to constructive criticism and advice during this process.

As detailed earlier, ensuring a good balance by paying attention to all parts of the food system will remain a major challenge. As in other countries, attention and investments may tend to flow towards the better functioning parts of the economy and to the "fitter" parts of the population, rather than to the most vulnerable and those who do not have access to assistance.

#### KEY INSIGHT 9

### The food system transformation may halt if continuity needs are not addressed

Rwanda has had its share of disappointments in terms of progress, particularly in relation to hunger and undernutrition. It is essential to keep the long-term vision alive during these moments. Great achievements and unexpected challenges can occur simultaneously and should not be played against each other. In many areas, it can take time to make significant advances. Continuity in governance and combined efforts as a nation play key roles in this regard.



How will Rwanda handle these challenges? Will setting high ambitions in terms of targets to be achieved by 2050 make the difference? Many of the targets for Vision 2020 were not achieved (Uwizeyimana, 2019) but did function as a source of motivation and coordination. There is still much to improve, but it is undeniable that good results have been achieved over the past decades. With all relevant caveats regarding processes that are still in the early stages, it can be concluded that the momentum for food system transformation has not been lost, that homegrown capacities for change are expanding, that new avenues regarding key aspects such as employment are being actively explored and developed, and that major steps have been taken to promote cohesion and combined efforts among the whole Rwandan population as a vital part of the process. This inspires hope that the process will not only be able to go fast, but also to go far.

One critical component remains largely beyond the control of government: external funding and investments. Taking into consideration the close connections between Rwanda and multilateral institutions such as FAO, WFP, ILO, the IMF, strong bilateral ties with the European Union and the United States of America, and collaboration with top research institutes such as CGIAR, there is good reason to hope that further transformation can be financed. Successful efforts to attract private investors will further broaden these opportunities. However, this will require innovating outside the box, since the current range of opportunities is limited. It will also involve further strengthening the social fabric of and trust within Rwandan society. An important aspect in this regard is addressing deeply ingrained patterns of petty theft of agricultural produce among villagers, as this undermines motivations for improving the land and its produce. Furthermore, de-risking mechanisms may help to accelerate the inflow of private resources, helping to compensate for existing gaps (Redifer et al., 2020). Many useful ideas and suggestions have been offered regarding the next steps in Rwanda's transformation to sustainability, some of which are reflected in the report on Future Drivers of Growth in Rwanda (World Bank and Government of Rwanda, 2020).

#### KEY INSIGHT 10

### **It is essential to draw on the resources and skills of others while your own are being amassed**

Rwanda has achieved good results by ensuring that developing actors partner with the government to achieve joint goals, rather than opposing plans. Despite a lack of funds and trained people to implement its plans, the government has orchestrated the contributions of multi- and bilateral agencies to provide funds and trained staff, and train Rwandese workers. At each step, the country has thus built its own ability to formulate and take on ever more ambitious goals.

In short, Rwanda's experiences in the area of food system transformation, over more than two decades, offer a variety of insights that can benefit other countries, notably those in post-conflict settings. They show that an adverse starting situation is no reason for not setting ambitious goals, that transformation will not be instant and will involve trial and error, that disappointments may occur on the road to hoped-for achievements, and that not everyone will agree on the chosen pathways. Lastly, they show that there are no short-cuts to success. In the midst of these challenges, a government that seeks to serve the needs of all citizens, that is open to learn and adapt, and that keeps the momentum going, makes all the difference.

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# Annexes

- 1. List of key interviewees**
- 2. Rwanda's food system**
- 3. Timeline of important policies, strategies and programmes**

# Annex 1. List of key interviewees

A total of 20 well-informed stakeholders from the Rwandan agrifood sector (see Table A1.1) were interviewed between the months of November and December 2020.

**Table A1.1.** List of interviewees

INTERVIEWEE	AFFILIATION
<b>Barachi, Eliud</b>	Market Economist, International Center for Tropical Agriculture (CIAT), CGIAR
<b>Busokeye, Laetitia</b>	Director of Research, Rwanda Environment Management Authority (REMA)
<b>Gafaranga, Joseph</b>	Executive Secretary, Imbaraga Farmers Organization
<b>Gasana, Grace</b>	Program Director, Farmer-to-Farmer Programme (F2F), Catholic Relief Services (CRS)
<b>Kanyamibwa, Sam</b>	Executive Director, Abertine Rift Conservation Society (ARCOS)
<b>Manirarora, Zacharie</b>	Agriculture Advisor, Farmer-to-Farmer Programme (F2F), Catholic Relief Services (CRS)
<b>Mbonigaba, Eric</b>	Director of Agriculture and Livestock, Private Sector Federation (PSF)
<b>Mukantwali, Christine</b>	Project Coordinator, FAO Representation in Rwanda
<b>Murekezi, Charles</b>	Director General, Agriculture Development, Ministry of Agriculture and Animal Resources
<b>Ndabamenye, Telesphore</b>	Strategic Policy Advisor, Ministry of Agriculture And Animal Resources
<b>Ndizeye, Damien</b>	Executive Director, Rwanda Consumers' Association (ADECOR)
<b>Nishimwe, Grace</b>	Head of Land Management Department, Rwanda Land Management and Use Authority (RLMUA), Ministry of Environment
<b>Niyonsenga, Seraphin</b>	Agriculture Policy Analyst, Office of The Prime Minister, Rwanda
<b>Ntirenganya, Emmanuel</b>	Journalist, The New Times
<b>Schut, Marc</b>	Country Representative, International Institute of Tropical Agriculture (IITA), CGIAR
<b>Simons, Alexandre</b>	Director of Research, Institute of Policy Analysis and Research (IPAR)
<b>Spielman, David</b>	Programme Leader, International Food Policy Research Institute (IFPRI), CGIAR
<b>Surum, Chelang'at</b>	Policy Engagement and Coordination Unit Lead, Tubura Rwanda, One Acre Fund
<b>Umurungi, Florence</b>	Chairperson, Rwanda National Dairy Platform (RNDP)
<b>Zahonero, Pascal</b>	Programme Officer, Delegation of the European Union to Rwanda

## Annex 2. Rwanda's food system

The spiderweb graph presented in Section 1.4 provides a quick overview of the different dimensions of the Rwandan food system. The appraisal distinguishes between three dimensions within the larger food system:

- food and nutrition security performance;
- environmental sustainability performance;
- social, economic and political performance.

While it is not possible to capture an entire food system with one visual element, Figure 2 (see Section 1.4) is intended as a discussion starter regarding Rwanda's performance within these different dimensions. To create an integrated and comprehensive overview, a variety of topics/indices that comprise a larger set of primary indicators were selected. For example, the food accessibility component includes indicators on food price, income per capita, poverty indicators and the presence of food safety net programmes. In the table below, links are included for further information on the indicators used. In addition, only indicators that are available for all countries included in this study were used. See Table A2.1 for a detailed list of the indicators selected.

**Table A2.1.** Selection of indicators for the construction of the food system performance chart

TOPIC	INDICATOR USED	SOURCE
<b>Food and nutrition security performance</b>		
Food security (general)	Global Food Security Index (GFSI)	GFSI <sup>1</sup>
Food accessibility	Affordability component of GFSI	GFSI
Food quality and safety	Quality and Safety component of GFSI	GFSI
Progress on Global Nutrition Targets	On/off track on global nutrition targets (10)	Global Nutrition Report
<b>Environmental sustainability performance</b>		
Progress to combat climate change	Climate change component of EPI	EPI <sup>2</sup>
Sustainable management of wastewater	Wastewater treatment component of EPI	EPI
State of key ecosystems	Ecosystem services component of EPI	EPI
Actions towards protecting natural ecosystems and biodiversity	Biodiversity & Habitat component of EPI	EPI
Sustainable Nitrogen Management	Sustainable Nitrogen management index	EPI
<b>Socio-economic and political performance</b>		
Enabling business environment	Doing Business index	World Bank
Political stability	Political Stability index	World Bank
Social equality	GINI (inequality)	World Bank
Demographic conditions to meet food demand	Demographic stress component of GFSI	GFSI

<sup>1</sup> Global Food Security Index, The Economist Group

<sup>2</sup> 2020 Environmental Performance Index, Yale University



## Annex 3. Timeline of important policies, strategies and programmes

A timeline of some of the most relevant policies linked to the transformation of Rwanda's food system is presented in Table A3.1.

**Table A3.1.** Key national policies, strategies and programmes

DYNAMICS, PROCESSES AND EVENTS THAT CONTRIBUTED TO POLICY DEVELOPMENT	NATIONAL POLICIES, STRATEGIES AND PROGRAMMES RELATED TO THE FOOD SYSTEM
<p><b>2000-2010</b></p> <ul style="list-style-type: none"> <li>• In 2000, H.E. Paul Kagame became President with a new vision for the country: law and order, and economic transformation.</li> <li>• In 2003, a constitutional referendum and a presidential election were held. The constitution was approved and Kagame was elected.</li> <li>• The doubling of international food prices in 2008 was accompanied by the shutting off of cereal exports from Tanzania and Uganda.</li> <li>• The national electorate consists of a majority of farmers (over 70 percent) living in rural areas: improvements in the agricultural sector are an effective way for the ruling party to gain support.</li> <li>• Need to launch policies that set a path towards post-genocide economic recovery.</li> <li>• National desire for formalization of land rights.</li> <li>• Increasing environmental degradation and biodiversity loss.</li> <li>• Dissatisfaction over the scattered delivery of agricultural institutions targeting the same farmer.</li> </ul>	<ul style="list-style-type: none"> <li>• Rwanda Vision 2020, 2000.</li> <li>• Poverty Reduction Strategy 2002-2006 Paper.</li> <li>• Environment Policy, 2003.</li> <li>• National Agriculture Policy, 2004.</li> <li>• Land Policy, 2004.</li> <li>• Strategic Plan for Agricultural Transformation 2005-2008 (PSTA-I).</li> <li>• One Cow Per Poor Family (Girinka Programme), 2006.</li> <li>• In 2007, the Crop intensification Programme (CIP) was launched. The programme had four major components: 1) distribution of improved inputs, 2) land use consolidation, 3) proximity extension services, and 4) post-harvest handling and storage.</li> <li>• Land consolidation was launched with the Organic Land Law in 2005, institutionalized through the Land Use Consolidation Programme (LUCP) in 2007 and implemented through CIP.</li> <li>• Strategic Plan for Agricultural Transformation 2009-2012 (PSTA-II).</li> <li>• Economic Development and Poverty Reduction Strategy 2008-2012 (EDPRS I).</li> <li>• National Decentralization Policy (NDP) launched as an umbrella of the Decentralization Implementation Programme (DIP) and the Agricultural Extension Strategy (NAES).</li> <li>• In 2009, key agricultural institutions (former National Agricultural Research Institute/ISAR, the former Rwanda Agriculture Development Authority/RADA and the former Rwanda Animal Resources Development Authority/RARDA) merged to become the Rwanda Agriculture and Animal Resources Development Board (RAB) in order to integrate agriculture research and extension.</li> <li>• Forestry Policy, 2010.</li> <li>• National Policy for Water Resources Management, 2011.</li> <li>• Rwanda biodiversity Policy, 2011.</li> <li>• Various crop-related strategies (e.g. coffee and tea) were launched.</li> </ul>

<p><b>2010-2016</b></p> <ul style="list-style-type: none"> <li>• In 2010, a second presidential election was held, with Kagame re-elected and pledging to consolidate previous economic growth.</li> <li>• Push for attracting green investments to the country.</li> <li>• Increased donor funding.</li> <li>• Renewed political will for agricultural development.</li> </ul>	<ul style="list-style-type: none"> <li>• Green Growth and Climate Resilience national strategy.</li> <li>• Creation of the Rwanda Green Fund (FONERWA).</li> <li>• National policy for water resources management.</li> <li>• Establishment of the National Grain Strategic Reserve.</li> <li>• Agricultural Mechanization Strategy 2010-2015.</li> <li>• National Post-Harvest Staple Crop Strategy 2011-2016.</li> <li>• National Multi-Sectoral Strategic Plan to Eliminate Malnutrition (NMSEM) 2010-2013. This plan emphasized decentralizing the implementation of interventions.</li> <li>• Economic Development and Poverty Reduction Strategy 2013-2018 (EDPRS II).</li> <li>• Strategic Plan for Agricultural Transformation 2013-2018 (PSTA-III).</li> <li>• Rwanda Irrigation Policy and Action Plan, 2013.</li> <li>• Revised subsidy scheme for seeds (75-85 percent of farm gate price), fertilizers (5-50 percent) and lime.</li> <li>• National Policy on Cooperatives in Rwanda, 2018.</li> <li>• The Early Childhood Development Policy, 2016.</li> <li>• National Food and Nutrition Strategic Plan and Policy 2013-18.</li> <li>• National Water Supply Policy, 2016.</li> <li>• Rwanda Energy Policy, 2015.</li> <li>• Health Sector Policy, 2015.</li> </ul>
<p><b>2017 and onwards</b></p> <ul style="list-style-type: none"> <li>• In 2017, in advance of the presidential elections held on the same year, the ruling RPF party launched its political manifesto on economic growth, with renewed political will to support agriculture. Kagame was re-elected.</li> <li>• High level political concerns over shrinking farmland and loss of prime agricultural land due to coordination issues in the implementation of land use plans.</li> </ul>	<ul style="list-style-type: none"> <li>• Launch of Vision 2050</li> <li>• Launch of The National Strategy for Transformation (NST1) 2017-2024</li> <li>• Launch of Strategic Plan for Agricultural Transformation 2018-2024 (PSTA-IV).</li> <li>• Made in Rwanda Policy, 2018.</li> <li>• National Agriculture Policy, 2018.</li> <li>• National Land Policy, 2018</li> <li>• The revised National Land Use Master Plan, 2020.</li> <li>• National Environment and Climate Change Policy, 2019.</li> <li>• The fourth Health Sector Strategic Plan 2018-2024 (HSSP IV).</li> <li>• Entrepreneurship Development Policy, 2020.</li> <li>• Private Sector Development and Youth Employment Strategy (PSDYES) 2018-2024.</li> </ul>

**Sources:** Interviews with informants from the Rwandan agrifood sector, World Bank and Government of Rwanda (2020), and IRDP (2017).

## Related publications

**Guijt, J., Wigboldus, S., Brouwer, H., Roosendaal, L., Kelly, S. & Garcia-Campos, P.** 2021. *National processes shaping food systems transformations. Lessons from Costa Rica, Ireland and Rwanda*. Rome, FAO. (also available at <https://doi.org/10.4060/cb6149en>)

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