



PATHWAYS FOR RWANDA'S FOOD SYSTEMS TRANSFORMATION IN SUPPORT OF THE SDGs 2030 AGENDA

1. CURRENT STATUS OF FOOD SYSTEMS: FUNCTION & CHALLENGES

Rwanda's Food Systems play a critical role in the national economy whereby the agriculture sector remains a significant source of comparative advantage. They embrace the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption, and disposal of waste products that originate from agriculture, livestock, and fisheries. They also comprise sub-systems such as input supply, farming, irrigation, waste management system, etc. that interact with other key systems viz., energy, trade system, health, etc. Changes in these adjacent systems can trigger structural food system changes; thus, consideration of the adjacent systems plays a vital part in the food system. Therefore, food systems must be designed so that the economic, social, and environmental basis are not compromised, and the broad involvement of stakeholders plays a significant role in ensuring inclusive access and coordination that drives availability and access to nutritious and healthy diets for all.

Rwanda's food systems and all the efforts that have gone into its development are vital to all aspects of life in Rwanda. They have been the source of food security and nutrition for all and has generated economic growth, initiated social inclusion, and protected the environment. In 2020, agriculture contributed 26% to GDP and engaged 67% of the active workforce. The Government has successfully implemented plans, strategies, and pathways to significantly improve food security (it stands at 81.3%-NISR, 2018). On the other hand, the strategic orientation embraces nutrition-sensitive agriculture and actions to ensure that nutrients, food safety and quality are preserved or enhanced throughout the value chain.

Significant effort was devoted to addressing the issue of high prices of nutritious foods through the promotion of government-led nutrition programs to improve nutrient access, enhance livelihoods, and reduce shocks and vulnerabilities in line with the "no one left behind" and "no sod left untouched" approach. These programs include home-grown school feeding, Early Child Development Centers at the local level, the "One Cow per poor family" policy and "One Cup of milk per Child". However, food supply chains have not yet met the population's needs for a healthy diet due to gaps in crop yields-(actual yields for major crops are about 40-50% below potential yield)-(MAMO Panel report, 2021) due to small land holdings, limited use of agricultural inputs, low uptake of modern technologies such as mechanization and smart irrigation; and limited access to financial services, limited diversity in production, under-developed supply chains, poor infrastructure for transportation, storage, and distribution. Furthermore, low production of animal source foods due to high cost and limited availability of quality animal feed, improved breeds and vaccines and weak professional post-harvest services, affordable food preservation and processing capacity to reduce post-harvest loss and costs, especially for perishable produce.

On the other hand, Rwanda is highly vulnerable to the effects of climate change and natural disasters (land-slides, floods, droughts) as about 70% of land nationally is on hillsides (MINAGRI-2017), with limited terracing and low levels of irrigation (about 1.6% agricultural operators have invested in irrigation) – (National Agricultural Policy, 2017). Challenges in the food systems result in poor nutritional, livelihood and environmental outcomes – high

levels of undernourishment, leading to negative health outcomes such as stunting (33% of children under-five) – (DHS-2019-20). While the rates of wasting and stunting among children under five years has steadily decreased since the early 2000s, undernourishment in the general population has risen from 22.2% in 2012 to 35.6% in 2020.

Rwanda has held extensive Food System Summit Dialogues led by a multi-sectoral Steering Committee which has engaged diverse stakeholders including government ministries, UN agencies, development partners, CSOs, private sector players, women and youth to help identify Rwanda's main food system challenges and potential pathways to address them. Identified specific challenges in the current food systems, among others, include:

- **Agricultural productivity:**
 - Limited production diversity to meet population's nutritional needs. Net macro and micronutrient supply as a share of total consumption requirements for a healthy diet is below sufficient level (NISR, 2018) ~20% Rwandans are food insecure with low consumption of healthy foods.
 - Adequate Food Consumption Score has been relatively steady, between 76%-79% since 2009. The country has not established national targets or global targets set on its recommendation. However, the desired score is 100% with adequate Food Consumption.
 - Yield gaps of major crops between the current and potential yield are associated with low uptake of modern technology and knowledge gap and skills for farmers, while low yields in animal production are due to the high cost of high-quality animal feeds coupled with genetics, breeds, vaccines, which results in expensive animal-source foods.
- **Diet quality and Nutrition Security:** Limited production diversity to meet population's nutritional needs; some trade requires to supplement locally available foods to deliver healthy diets for all.
- **Livelihood's equity:** Limited income and income growth for farmers are making agriculture unattractive with increasing urban migration. Prices of nutritious foods are still high, coupled with the low purchasing power of farmers, that makes a healthy meal out of reach for most families. Other challenges include: limited resources for creating modern, market-oriented agriculture based on sustainable livelihoods resilient to natural shocks and stresses.
- **Environmental resilience:** High vulnerability to climate change and growing challenges from crop disease, insects, and changing biodiversity profile leading to lower productivity and food availability. Shocks due to climate change and variability, and extreme weather (primarily floods and droughts) that affect the food system.
- **Financing and investment:** Too little financing channeled towards food production and agro-processing due to perceptions of risk leading to low processing capacity. Limited access to finance, lack of collateral, poor financial literacy, and tailored products constrain the productive capacity and inclusion of small-scale entrepreneurs and vulnerable groups. The low coverage of crop insurance keeps the cost of credit out of reach to many.
- **Vulnerable groups:** A gap in addressing challenges faced by vulnerable groups in rural areas such as awareness of good agricultural extension and advisory practices, limited agro-processing industries in rural areas, deficient employment information, and inadequate infrastructure to some places keeps transport costs high.
- **Awareness and Education:** Lack of awareness among smallholder farmers and vulnerable groups on tools that can boost their livelihoods and resilience, including regional compliance standards and agriculture insurance products.
- **Infrastructure capacity:** Under-developed supply chains due to weak logistics infrastructure and limited private sector investment leading to high wastage and lower food quality.

- **External drivers:** Additionally, external drivers e.g., a hilly terrain with limited terracing makes the nation highly vulnerable to the effects of climate change due to landslides, floods and drought and low levels of irrigation

2. RWANDA'S FOOD SYSTEMS TRANSFORMATION VERSUS SDGs2030 AND NATIONAL PLANS

Rwanda has demonstrated strong commitment to its agricultural transformation targets. The country has been recognized globally for its progress towards meeting the targets outlined in CAADP/Malabo goals and for its alignment with the Sustainable Development Goals. Rwanda has developed many strategies and policies (e.g., NST1, PSTA 4, National Environment and Climate Change Policy) that are geared towards it. The country has also committed to Global and Regional declarations, which cover many of the food system components though some gaps exist: the informal food system, the role of consumer demand and behavior, as well as the role of science & technology are under-represented in policies, Malabo Declaration and related CAADP indicators also reveals gaps in processing, infrastructure and health outcomes such as obesity and non-communicable diseases (NCDs). At the national level, the main gaps include policies on food production, retail trade, marketing and distribution as well as affordability of diverse and nutrient rich food. Promoting resilience, mitigation and adaptation to climate change contributes to achievement of Rwanda's Nationally Determined Contributions (NDCs), protects life and livelihoods and preserves biodiversity.

Rwanda's food systems transformation will contribute to the achievement of several SDGs, particularly: SDG 1 (end extreme poverty), SDG 2 (zero hunger, improved nutrition, and sustainable agriculture), SDG 8 (decent work and economic growth), SDG 13 (climate action) and SDG 15 (terrestrial ecosystems, forests, and land). In addition, food systems transformation aligns to the EAC Vision2050 of increased investment and enhanced agricultural productivity for food security and a transformation of the rural economy. Rwanda domesticated the SDGs into the national developmental framework in 2019. The goal of this change is to ensure that all Rwandans have access to affordable healthy and nutritious food by leveraging modern technology and upgraded agriculture infrastructure to reduce food losses, and food waste, and green nature.

The delivery of Rwanda's pathways will be anchored by and aligned to existing planning documents. Where there is need, Rwanda will develop additional strategies and policies with a focus on strengthening implementation and coordination effectiveness on the ground. The Rwanda Food Systems strategy will be developed based on: National Strategy for Transformation 1 (NST1 2017-2024), findings from the Food System Dialogues and inputs from the diagnostic process. The Food System strategy will feed into the Sector Strategic Plans and national policies (e.g., National Agriculture Policy, National Health Policy etc.). District Development Plans, including annual plans and targets will be tailored to include a food systems orientation at the district level. These efforts towards reinforced connections and coherence will ensure an attractive and productive environment for food system actors, investors and implementers while promoting collective action, transparency, and accountability.

Strategic pathways for Rwanda's food systems transformation revolve on four priority challenges and aligns with the SDGs2030 Agenda. These include:

- (1) Ensuring Availability, Accessibility, Affordability and Food Safety for all while increasing demand for healthy and nutritious diets.
- (2) Developing food systems that contribute to environmental sustainability.
- (3) Enabling farmers and others in the food chain to enjoy decent livelihoods and to promote rural development while building resilience to vulnerabilities, shocks and stresses.

(4) Emerging cross-cutting themes include enhancing the contributions from women and young people and financing for Food Systems transformation.

The following principles share Rwanda's food systems:

- Facilitating the production, diversification and increasing production of nutrient-rich crops, livestock and following the path of nutrition-sensitive agriculture. Not only are food systems complex, but each is also unique to the geography and culture it is supposed to nourish
- Incorporating explicit nutrition objectives by collaboration with other sectors in food systems
- Building local knowledge through nutrition promotion and education.
- Adapting of activities targeting health and well-being of its citizens to local context
- Targeting vulnerable section of the population & improving equity
- Food production while maintaining and improving natural resource base
- Empowering women and youth
- Improving processing, storage, preservation of nutritious foods
- Expanding market access for vulnerable groups of the population and expand markets for nutritious foods.

3. EXPECTATIONS OF NATIONAL FOOD SYSTEMS IN THE COMING DECADE

Rwanda's vision is to reach diverse and inclusive food systems that contribute to the national economy while ensuring food and nutrition security in a sustainable and resilient manner. There is a need to embrace the principles of sustainability that impact nutrition and food security, resilience and risk mitigation for modern and safe food production and consumption of nutritious foods all year round to tackle and end the root cause of poverty and hunger, leaving none behind. The strategic orientation is that the agriculture sector shall remain a significant source of comparative advantage. Under the four priority challenges, Rwanda will undertake the following game changing actions and pathways:

Pillar 1. Ensuring Food Availability, Accessibility, Affordability and Food Safety for all while increasing demand for healthy diets

Promote Sustainable Production and Productivity of crops and livestock to ensure availability, accessibility, and affordability of safe and nutritious food by leveraging science and modern technologies that enhance food nutrient content, reduce Green House Gas emission and land degradation. Addressing the challenge of increasing food production without expanding agricultural land and threatening natural ecosystems and Sustainable management of food production systems to benefit both people and nature:

- Promote land use consolidation to alleviate scattered small-scale lands that put farmers in a disadvantageous position when it comes to access to finance, inputs, and mechanization services, etc. Focus on building capacity of small-holder farmers and enhance of technical efficiency for increased economic output from land.
- Enforcing the protection and utilization of agriculture land and reduce any form of land degradation through soil erosion, siltation, pollution, or any other improper land management.

Private Sector Support:

- Promote local production of both crop and livestock commodities, "*Made in Rwanda*". Support local seed production, organic/inorganic fertilizer and animal feed production industries.
- Promotion of commercial farming through strategic investment in mechanization and smart irrigation technologies.
- Promote agro-industrialization to ensure sustainable production, mostly in rural areas.
- Professionalization of farmers through improved skills and other capacity building services.

- Making room for extension services from public and private institutions.
- Provide tailored incentives to youth and women.
- De-risking private sector investment in food production by setting agri-business hubs to attract private sector (i.e., Gabiro irrigation hub is one such model).
- Availing multiple avenues for farmers to access resources: (i) matching grants for risk management scheme that cope with climate hazards, (ii) competitive fund for value chain and processing of commodities, (iii) increasing agriculture value chains covered by the agriculture insurance.

Research and Development:

- Increase investment in Science, Research, Innovation and Technology Development
- Strengthen collaboration and strategic partnerships with regional and global agriculture research institutions
- Promote private sector innovation in agri-technologies (hydroponics, smart irrigation).

Reduce food losses and waste

- Post-harvest management: Investing in value chain management with proper technologies, post-harvest infrastructure and processing facilities through public-private sector investments
- Capacity building (mostly extension services) for all actors in the crop and animal resources value chain on best-practices in production, handling, processing to reduce food losses and food waste
- Market linkages between the producers and consumers (i.e. in-country market linkages)

Infrastructure development:

- Investing in energy and rural infrastructures through the laying of more feeder roads as measure to prevent postharvest losses of foods.
- Establishment and operationalization of the Kigali Wholesale Market which is a fresh produce trading Ecosystem for the horticulture value chain
- Africa Centre of Excellence for sustainable Cooling and Cold Chain is also a game changer in agriculture infrastructure, and post-harvest losses reduction

Food diets: Increase healthy and nutritious food awareness and education programs and upgrade the laboratory capacity for food safety and surveillance.

- Ensuring access to healthy diets, improved behaviour change of beneficiaries
- Scaling up pro-nutrition programmes: School feeding, One cow per poor family, One cup of milk per child, home gardens with fruits and vegetables, Early Child Development centres, proximity animal protein through small stock rearing.
- Promoting policy which is pro-nutrition and promotes healthy diets through legal framework: surveillance programs, increase the capacity of laboratory infrastructure to increase Food Safety Systems, health and safety trade indexes, and policy framework promoting fortification of complementary foods and staple foods with micronutrients through public-private partnership and collaboration. These interventions require customizing regional interventions e.g., strengthening strategic food reserves in regions with chronic food insecurity to ensure access, while aligning efforts to encourage local sourcing among food processors. In addition, designing incentives to drive retention of nutritious food for consumption instead of sale and designing solutions for working caregivers e.g., easy to carry, affordable complementary food options for rural mothers who bring children to the farm.

Pillar 2. Food systems that contribute to environmental sustainability

- Promotion of climate resilient options such as improved bench terraces, improved seeds, resilient crops and livestock, agroforestry, irrigation of hillside and sustainable utilization of marshlands.
- All stakeholders in the food systems to jointly track indicators and restore degraded systems to ensure sustainability.

- Adopting circular economy (which impact positively climate change, biodiversity loss, waste, and pollution) into the Rwandan food systems.
- Reducing Green House Gas emission linked with farming.
- Develop and promote climate resilient crops.
- Investment in climate data and development of efficient and effective early warning systems (EWS) for food systems, to improve forecasting, monitoring and assessment of risk vulnerability and share timely information.

Pillar 3. Resilient food systems: Enabling farmers and others in the food chain to enjoy decent livelihoods and to promote rural development while building resilience to vulnerabilities, shocks and stresses

Promote Social & environmental resilience:

- Promoting the National Strategic Food Reserves to respond to potential shocks to food supply and thus helping to improve food security while simultaneously avoiding market distortion.
- Increase the coverage of social protection programmes to enhance graduation from poverty.
- Create income- generating opportunities outside farming in rural areas; focus has been on formal instead of semi- formal opportunities.
- Setting up affordable credit funds for small holder farmers and target agro-processing industries. implantation in rural areas to stimulate job creation. Rural access to credit is low.
- Create a competitive business environment via electrification, infrastructure and training to increase private sector investment in value-added food processing, manufacture and distribution.
- Accelerate creating of jobs in other sectors, allowing people to graduate from subsistence farming and reduce pressure on land.

Economic resilience:

- Leveraging African Continental Free Trade Area which offers opportunities for extensive intra-regional food trade.
- Promote export diversification and access to markets through digital solutions (e-commerce).
- Setting up affordable credit funds for small holder farmers and target new industries (i.e. agro-processing) in rural areas to stimulate job creation.

Recovery from COVID-19 pandemic:

- Strengthen agriculture value chains by introducing new value chains.
- Develop different scenarios to evaluate the pandemic time duration; the global pandemic extent; the resilience of different food value chain to the pandemic impact and their significance for nutrition and wellbeing.
- Strengthening youth workforce by leveraging on existing youth platforms (example, Rwanda Youth Agribusiness Forum (RYAF), HORECO, youth graduates from universities and secondary schools).

Pillar 4. Emerging cross-cutting themes: Enhancing the contributions from women and young people, and Financing for Food Systems Transformation.

Enhancing the contributions from women

- Empowering women in income generating activities within the food systems through tailored incentives.
- Putting in place more capital start-ups facilities and accompanying measures to ensure sustainable growth of newly owned SMEs by women.
- Establish new capacity building development programs to enhance entrepreneurship and business acumen among beneficiaries.
- Ensuring mainstreaming of gender equality as well as accountability mechanisms.
- investing in digitalization of financial services that advantage for women.

Empowering youth:

- Extending financial services for youth at affordable interest rates.
- Developing the right incentives to attract youth in agri-food systems.
- Establish training centre to capacitate youth through practical Skills and knowledge development (refresher courses);
- Establish youth agri-business funds and advocate for establishment of food innovation hubs.

Financing for Food Systems Transformation

- Design PPPs for investment in value chains, and distribution
- Develop opportunities in fit-for-purpose agricultural financial products targeting smallholder farmers and Small –Medium Enterprises agribusinesses, women and youth

4. COLLECTIVE ACTION TOWARDS SDGs 2030 AGENDA

Rwanda recognized multifaceted nature of the Food Systems. Therefore, delivering on the promise of a well-functioning food system transformation shall require a concerted effort nationally as well as regionally, and internationally between stakeholders to show a united front in tackling the numerous food system challenges and to promote its wide adoption. Stakeholders are increasingly calling for post-summit planning, implementation acceleration, monitoring of food systems' policies and related outcomes.

- **Food Systems stakeholder's clusters:** The stakeholders are subdivided into those in the public sector who play a major role as custodians of the national policies, the international community, the private sector, the civil society organizations, the academia and the media.
- **Strengthening the role played by private sector in Rwanda Food Systems and increasing participation of non-state actors:** The private sector can serve as a key contributor in the provision of food systems services and investments at various stages of the food system value chain. This transformation should leverage PPPs to attract private sector investment and increase in public-private dialogues focused on the promotion of investment in value chains, focusing on improving the regulatory environment and commercialization.
- **Inclusive stakeholder engagement:** To foster ownership and inclusion, different organizations shall be assigned to specific pillars to lead during the journey to 2030 SDGs agenda. This approach has worked successfully in leading different actions during the food systems national dialogues process. It is also essential to double up the efforts by development partners to accelerate the achievement of country ambitions of having a healthy population and sustainable food system. Increased degree of participation of donor and development partners to support country to achieve its vision through augmented technical and financial support target to specific food value chains.

5. SOME KEY MILESTONES OF THE PATH

Food security, nutrition and decent livelihoods indicators shall include, among others:

- Reduce food insecurity from 18.7% in 2018 to 10% by 2024 (Agriculture-PSTA4).
- Investment contribution of private sector to irrigation growth/financing to move to 24.6%, contribution to nutrition by 1.3%, Land husbandry, Resilience and Market linkages by 2024 (Agriculture-PSTA4).
- Doubling yield of key crops via sustainable intensive production and increasing commercialization of agricultural value chains towards a food secure country by 2025 with inclusive food systems.
- Eradicating malnutrition through enhanced prevention and management of all forms of malnutrition (including stunting reduction from 33% in 2020 to 19% by 2024 (NST1)

- Increasing farmer incomes and reducing poverty, especially among rural households living below poverty line (with a reduction target from 43.3% in 2016 to 17% in 2024 (Agriculture-PSTA4).
- To protect agriculture lands of more than 11,692km² (in 2035-National Land use and Development Master Plan) and mainstream agro-ecology technologies
- Expand coverage of agricultural insurance: build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social, and environmental shocks and disasters.
- Employment creation: Number of jobs created via agribusiness.
- Enhance access to finance for farmers from 5.2% in 2017 to 10.4% in 2024.
- Women empowerment: Increased proportion of women engaged in the production aspect of the value chain (production, agro-processing, marketing, and export).
- Youth engagement: The national target envisions 1.5 million youth employed in 2024. Key milestones include number of young people shifted from subsistence to market-oriented agriculture (41.2 to 10%), increased number of youth with access to agricultural inputs through different subsidies and number of youth invested in market oriented agriculture.
- Feeder roads: Motorable road to within 2km of each farm by 2027.
- Facilitate timely access to market information, including on food reserves, to help limit extreme food price volatility.

5. ENSURING THE PATH FOR ITS ACTION:

The ambition of Rwanda should be to ensure that the entire population has access to an affordable, sustainable, and healthy diet. Strategies to actualize this ambition will include:

- **“A high level Food systems transformation Champion”**, led by a highly respected Executive Officer supported by a team/secretariat with representatives from key ministries and agencies, to lead the effort going forward. This effort will require the design of a long-term governance, coordination, and delivery platform to drive food systems transformation in the multi-year effort towards the 2030 Agenda. This coordination mechanism aims at strengthening the coordination of all partners involved in Food Systems at planning, budgeting, implementation, and reporting.
- **Development of country action plan and road map for Food Systems** Transformation and Prioritization of the country’s key food systems challenges, with the selection of 4-5 challenges for short-term action.
- For each of the selected top challenges, development of policy bundles, programs, and investment cases (including mutually reinforcing game changing solutions), backed up by robust analysis; bundles may address more than one top challenge and combine existing and new initiatives.
- **Supporting the food systems coalitions that are emerging**, among others, Nutrition and Zero Hunger, School Meals coalition; Food Loss and Waste; Agro ecology and Sustainable Livestock and Agriculture Systems.