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RWANDA



UN Food Systems Summit 2021

Rwanda's Food Systems National Dialogues:

Outcomes and Pathways

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SUMMARY

The term “food system” refers to the constellation of activities involved in producing, processing, transporting and consuming food. Too many of the world’s food systems are fragile, unexamined, and vulnerable to collapse, as millions of people around the globe experienced first-hand during the COVID-19 crisis.

In 2021, UN Secretary-General António Guterres convened a Food Systems Summit as part of the Decade of Action to achieve the Sustainable Development Goals (SDGs) by 2030. The Pre-Summit was hosted by Italy, 26-28 July 2021, while the Summit was held from 23-24th September 2021 in New York. The Summit launched bold new actions to deliver progress on all 17 SDGs, each of which relies to some degree on healthier, more sustainable, and equitable food systems.

Rwanda’s participation in the UN Food Systems Summit 2021 was approved by the Cabinet meeting of 19th February 2021. Through the Food Systems Summit National Dialogues, Rwanda participated, like other countries globally, in the preparation for the Summit and engaged different in-country stakeholders in the process. The national process was led by the Ministry of Agriculture and Animal Resources (MINAGRI) and Permanent Secretary of MINAGRI, Mr. Jean Claude Musabyimana, was appointed as convenor.

The convenor was supported by a technical team composed of focal points from key ministries and development partners including, among others, the Ministry of Finance and Economic planning, Ministry of Trade and Industry, Ministry of Environment, Ministry of Health, Ministry of Local Government and Ministry of Gender and Family Promotion, the UN Resident Coordinator Office, the Food and Agriculture Organization (FAO), the United Nations Development Programme (UNDP) and the United Nations World Food Programme (WFP).

Rwanda organized three stages of National Dialogues to convene diverse stakeholders in Rwanda’s food systems to find game-changing solutions for the Rwandan context. Given the impact of COVID-19 on gatherings, the dialogues were run virtually. The dialogues were open to all citizens.

The three stages were executed as follows:

STAGE 1 INITIATING NATIONAL ENGAGEMENT IN THE 2021 FOOD SYSTEMS SUMMIT [March – April 2021].

Structured along the five Summit Action Tracks,

the first stage initiated national engagement of stakeholders in identifying aspects of Rwanda’s food systems that need to change as well as key gaps. This stage made stakeholders aware of existing national plans for sustainable food systems.

The five Action Tracks were:

ACTION TRACK 1: Ensuring Access to Safe & Nutritious Foods for All

ACTION TRACK 2: Shift to Sustainable Consumption Patterns

ACTION TRACK 3: Boost Nature-Positive Production - Sustainable Food Production Systems

ACTION TRACK 4: Advance Equitable Livelihood

ACTION TRACK 5: Build Vulnerabilities Shocks & Stress

STAGE 2 EXTENSIVE EXPLORATIONS EVERYWHERE: YOUTH, WOMEN AND INDEPENDENT DIALOGUES [May – June 2021].

This stage aimed at creating an opportunity for engagement and interconnection among an even broader set of stakeholders through multiple dialogues organized around specific themes that linked to the five Summit Action Tracks. Themes focused but not limited to Production-Processing-Market and Consumption-Nutrition-Climate change & Vulnerability. Crosscutting issues such as financing, youth & women)- Research for development. Stakeholders identified promising approaches and potential commitments as contributions to the development of the national pathway. A country Diagnosis for Rwanda’s Food Systems was conducted by a Food Systems Transformative Integrated Policy (FS-TIP) coalition providing results of extensive research and feedback from key stakeholders in Rwanda’s food systems.

STAGE 3 PATHWAY INTENSION AND COMMITMENT: HIGH LEVEL NATIONAL DIALOGUE [July 2021].

The final Dialogue brought together Ministers dealing with food systems, Heads of UN agencies and other high-level decision makers to discuss key challenges in Rwanda’s food systems raised in previous Dialogues and propose game changing solutions to establish Rwanda’s contributions to the Pre-Summit and Summit.

Through the Food Systems Dialogues process,

Rwanda identified priority national pathways that cut across the five action tracks. Key food systems opportunities include improving diet quality and nutrition security, ensuring livelihoods become more equitable, strengthening environmental resilience, boosting agricultural productivity to reach potential, investing in infrastructure capacity to minimize food loss and improving access to finance and investments across the food system.

The national Food System Summit process not only identified what needs to change, but also highlighted existing programs that work. Rwanda boasts several home-grown success stories in achieving healthy, sustainable, and equitable food systems. These include the Girinka program - “one cow per poor family”, Crop Intensification programme with land use consolidation as main pillar, Nutrition Sensitive Agriculture, School Feeding Program, Social protection programmes (VIUP), Women empowerment programs, Early Childhood Development Program, Environment programs. Other programs include Joint Program for Rural Women’s Economic Empowerment (RWEE), Landscape Restoration Program (Gishwati project -LAFREC); Amayaga Project, LDCF II Projects, Forest landscape restoration (FLR) SEBEYA Project and Amayaga Project. The multisectoral engagement with Ministries, Government agencies, national and international non-governmental partners played an important role in the success of these programs. Programs such as Girinka and the School Feeding Program are home grown and therefore sustainable. These programs have built capacity and provided skills and finances to youth and women the future custodians of the nation.

Rwanda does have areas for improvement, and it will work on its policies and strategies to march towards its 2030 vision of becoming a middle-income economy. Rwanda’s Food Systems play a critical role in the national economy whereby the agriculture sector remains a significant source of comparative advantage. They have been the source of food security and nutrition for all and have 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.

National dialogues showed that 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 (landslides, 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.

As mentioned above, 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, Diet quality and Nutrition Security, Livelihood’s equity, Environmental resilience, Financing and investment, Vulnerable groups, Awareness and Education, Infrastructure capacity, External drivers.

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. 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 / develop additional strategies and policies. 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 Food System transformation plan 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 align 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.

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 by ensuring Promotion of Sustainable Production and Productivity of crops and livestock , Private Sector Support, Research and Development, Infrastructure development and Food diets

Pillar 2. Food systems that contribute to environmental sustainability, by reducing emission of Green House Gasses, reduce deforestation while increasing forest cover and minimise food losses along the supply chain.

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 by promoting Social & environmental resilience, economic resilience and recovery from COVID-19 pandemic,

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

Collective action towards SDGs 2030 agenda with stakeholders is envisaged. To ensure the pathway for its action, a high level food systems transformation Initiative is envisaged, a country action plan and road map for Food Systems Transformation will be developed with prioritization of the country's key food systems game changers., Through the national pathways, Rwanda will galvanize action and coordinated implementation across the diverse set of food system stakeholders to achieve the envisioned national targets.

Finally, the document also records the Ministerial statement on Rwanda's Food systems challenges, delivered by Hon Minister of Agriculture and Animal Resources (MINAGRI) at the pre- UN Food System summit that took place in Rome from 26–28 July 2021. Rwanda provided evidence-based and scientific approaches to food systems transformation and provided a set of new commitments through coalitions of action and mobilize new financing and partnerships.

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ACRONYMS

BDF	Business Development Fund
BK	Bank de Kigali
BPR	Banque Populaire du Rwanda
BRD	Development Bank of Rwanda
CAVM	College of Agriculture Animal Science and Veterinary Medicine
CBO	Community Based Organization
CIP	Crop Intensification Program
CNFA	Cultivation New Frontier in Agriculture
DFID	Department for International Development
ECD	Early Childhood Development
FAO	Food and Agricultural Organization
FS-TIP	Food System Transformative Integrated Policy
GHG	Green House Gas
IITA	International Institute of Tropical Agriculture
IMYCF	Infant Mother Young Child Feeding
INES	Institute of Applied Sciences
INILAK	University of Lay Adventists of Kigali
IPRC	Rwanda Polytechnique of Civil Engineering
JICA	Japan International co-operation Agency
KCB	Kenya Commercial Bank
KOICA	Korea International o-operation Agency
LODA	Local Administrative Entities Development Agency
LUC	Land Use Consolidation
MIGEPFROF	Ministry of Gender and Family Promotion
MINECOFIN	Ministry of Finance and Economic Planning
MINI YOUTH	Ministry of Youth and Information and Communication Technology
MINICT	Ministry of Information Technology and communication
MOE	Ministry of Environment
MOH	Ministry of Health
MYCULTURE	Ministry of Youth and Culture Rwanda
NAEB	National Agricultural Export Development

NBSAP II	National Biodiversity Strategy and action Plan
NDC	National Determined Contributions
NGO	Non-Governmental Organization
NISR	National Institute of Statistics Rwanda
NST1	National Strategy for Transformation
PRIME	Republic of Rwanda Prime Minister Office
PSF	Private Sector Federation
RAB	Rwanda Agriculture Board
RADIANT	Radiant Insurance Company
RCA	Rwanda Cooperative Agency
RCB	Royal Challengers Bangalore
RDB	Rwanda Development Board
RDO	Rwanda Development Organization
REMA	Rwanda Environmental Management Authority
RFDA	Rwanda Food and Drugs Authority
RICA	Rwanda Institute for Conservation Agriculture
RYAF	Rwanda Youth in Agri Business
SBCC	Social Behaviour Change Communication
SDG	Sustainable Development Goals
SONARWA	SONARWA Insurance Company Rwanda
UCK	Catholic University of Kabgayi
UR	University of Rwanda
USAID	United States Agency for International Development
UTAB	University of Tourism Technology and Business
VUP	Vision 2020 Ubudehe Program
WB	World Bank

FOREWORD



Mr. Jean Claude MUSABYIMANA

Permanent Secretary, Ministry of
Agriculture & Animal Resources

National convenor of UN Food
Systems National dialogues

It has been a pleasure to be trained, plan and convene the Food Systems National Dialogues in Rwanda during the period from January to September 2021, bringing on board a large number of stakeholders to understand the concept of “Food Systems”. It was both a challenge and a rewarding experience when this endeavour falls in my mandate. A challenge, because the pandemic caused the program to be organized virtually, yet stakeholders showed up in spite of the remote areas to express their views that gave the opportunity for all actors in food systems to plan ways to address them. Hence, none were left behind, because the grass roots too were reached, irrespective of age and gender, to hear their voices. The influence of climate change, the situation of food security and healthy diets, the policies in food systems and their implementation, agricultural challenges as whole, environmental challenges and biodiversity were all visited. The whole process was catered through the trainings that were provided by the UN Food Summit secretariate which were dexterily followed. As the Permanent Secretary of the Ministry of Agriculture, it was a relevant task for me to be part of this colossal and transformative endeavour with mixed thoughts of excitement while understanding the several challenges in feeding the growing population within the various agro-climatic zones of the hilly terrain of the nation, just to cite few. This process took three main stages:

Stage 1 Initiating national engagement in the 2021 Food Systems Summit

The purpose of the Stage one of national dialogues was to initiate an inclusive process through which stakeholders were engaged in understanding food systems concept to be able to contribute to the process of the Food Systems Summit. They examined and identified the challenges, potentialities, and opportunities of the country's food systems, and proposed a large number of game changing solutions.

Stage 2 Extensive explorations everywhere

This stage provided an opportunity for engagement and interconnection among a broader set of food systems stakeholders through multiple dialogues that connect the municipalities and national level and to include many individual stakeholder groups (e.g. farmers, consumer associations, SMEs). Youth and women voices were significantly articulated. These diverse stakeholders explored options for sustainability within the context of the country.

Stage 3 Consolidation, intention and commitment

In Stage 3, outcomes from extensive Food System Summit Dialogues were reviewed under the leadership a multi-sectoral Steering Committee and the national pathways towards sustainable food systems by 2030 were strongly supported by diverse stakeholders including government ministries, UN agencies, development partners, CSOs, private sector players, women and youth, these helped to identify Rwanda's main food system challenges and devise potential pathways to address them.

The country remains committed to the fulfillment of the pathways that were charted out with its partners with the great role of private sector, thus enabling sustainable food systems.

ACKNOWLEDGMENTS

The Food Systems National Dialogues convenor is honored to present “Rwanda’s Food Systems National Dialogues: Outcomes and Pathways” which is an outcome of the series of national dialogues that were held at various stages supported diverse stakeholders and distinct groups of the population like youth and women involving both rural and urban areas while embracing climate change, land geography and other socio-economic aspects.

Ministries and their agencies directly and indirectly dealing with Food Systems and the UN Country Team were engaged in the preparation and hosting of national food systems dialogues that were aligned with the Summit objectives / action tracks. This was a collaborative exercise in which the citizens, who are the heart of this exercise, were brought on board to understand the concept of Food Systems, analyse the existing challenges chart a course of action. Hence, we record our heartfelt thanks to them. This exercise could not be done alone but with diverse stakeholders. Hence Ministries and government institutions in food systems, development partners, UN agencies, private sectors, investors, civil societies, women organizations, youth organizations that were part of this team are sincerely thanked for their incomparable support.

The African Union Agency (AUDA-NEPAD) was fully engaged in backstopping and conducting trainings on execution of Food systems National Dialogues and Rwanda team worked closely with the Skills, Systems and Synergies for Sustainable Development (4SD) for technical guidance & performance. The UN Special Envoy for Food Systems Summit 2021, Dr. Agnes M. Kalibata was fully engaged in these endeavors.

Our special appreciation goes to the National Technical team members under the leadership of MINAGRI experts, who contributed throughout the entire process and the remarkable efforts of the ICT team for the arrangements of the virtual meetings, trouble shooting and capturing of information.

The National convenor is also greatly pleased to express this sincere gratitude to the financial support from FAO and WFP Rwanda that facilitated the technical preparation of the report as well as active involvement of the UN Resident Coordinator Office for financial, technical and logistical support to the undertaking of the UNFSS processes.

Lastly but not least, we record our indebtedness to the strategic guidance of the Food Systems national steering committee under the leadership of MINAGRI.

CHAPTER 1

INTRODUCTION

1.1 Context of UN Food Systems Summit 2021

Food systems touch every aspect of human existence. The health of our food systems profoundly affects the health of our bodies, as well as the health of our environment, our economies, and our cultures. When they function well, food systems have the power to bring us together as families, communities, and nations.

Right now, several of the world's food systems are failing. This affects all people, the planet, and our shared future. Globally, about 690 million people are going hungry (more than 250 million in Africa). One-third of all food is either lost or wasted. Malnutrition is the number one factor contributing to the global burden of disease and reduced life expectancy (more than 70% of Africans cannot afford a healthy diet). Furthermore, more than two billion people are overweight or obese. Concerning the environment, food systems contribute up to 29% of all greenhouse gas (GHG) emissions. Agriculture is responsible for approximately 80% of loss in biodiversity, accounts for nearly 70% water use, reports for practically 80% of deforestation and more than 25% of all energy utilization.

Hence, in 2021, UN Secretary-General António Guterres called for the Food Systems Summit as part of the Decade of Action to achieve the Sustainable Development Goals (SDGs) by 2030. The Summit awoken the world to the fact that working together should transform the way the world produces, consumes, and thinks about food. It was a summit for everyone everywhere – a people's summit. Its success depended on engaging citizens everywhere by convening National Dialogues with specific target groups like women and youth who play a pivotal role in transformation of food systems.

The Summit launched bold new actions to deliver progress on all 17 SDGs, each of which relies to some degree on healthier, more sustainable, and equitable food systems. This involved UN member states making commitments to implement game changing solutions that work toward healthy, resilient, and inclusive food systems that also achieve broader economic growth and development goals. The UN Food Systems pre-summit was hosted by Italy in Rome from 26-28 July 2021. The full summit was held from 23-24 September 2021, in conjunction with the UN General Assembly in New York.

Food systems are connected to regional and global commitments. Beyond the Sustainable Development Goals (SDGs), food systems are highly relevant for all the goals laid out in the Malabo Declaration and African Union (AU) Agenda 2063. There is a scientific consensus that transforming food systems also offers one of the strongest opportunities in changing course and realizing the 2030 Agenda, and to support the UN Secretary General's call to "build back better" from COVID-19. Globally, the COVID-19 pandemic underlines the need for food systems to be resilient in ways that respond to greatest needs and leave no-one behind.

The Food Systems Summit was judged as a turning point in the world's journey to achieve the SDGs with less than 10 years to go and many African states not on track to achieve many of these.

1.2 Objectives of UN Food Systems Summit 2021

The Food Systems Summit 2021 objectives were:

- (1) Ensuring Access to Safe and Nutritious Food for All (enabling all people to be well nourished and healthy, progressive realization of the right to food);
- (2) Shifting to Sustainable Consumption Patterns (promoting and creating demand for healthy and sustainable diets, reducing waste);
- (3) Boosting Nature-Positive Production at Sufficient Scales (acting on climate change, reducing emissions and increasing carbon capture, regenerating and protecting critical ecosystems and reducing food loss and energy usage, without undermining health or nutritious diets);
- (4) Advancing Equitable Livelihoods and Value Distribution (raising incomes, distributing risk, expanding inclusion, promoting full and productive employment and decent work for all); and
- (5) Building Resilience to Vulnerabilities, Shocks and Stresses (ensuring the continued functionality of healthy and sustainable food systems).

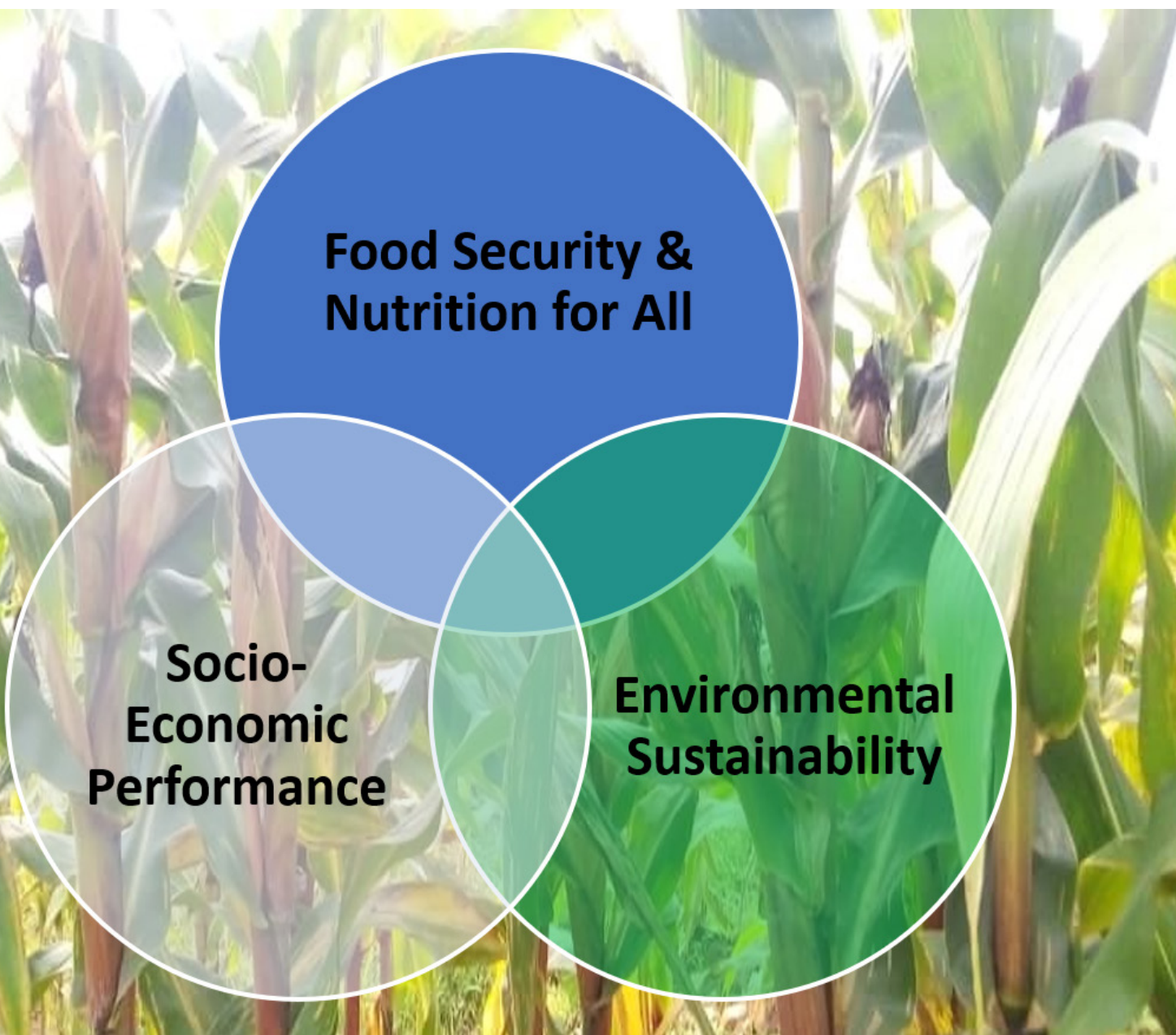
The Summit also addressed cross-cutting issues such as finance, policy, innovation, indigenous knowledge, and the empowerment of women, young people, and vulnerable groups. The Food Systems Summit was

at the center of all 17 SDGs and major moments to advance the Decade of Action.

1.3 Asks for Rwanda

Rwanda was taking a leading role at the Food Systems Summit. Rwanda's participation in the UN Food Systems Summit 2021 was approved in the Cabinet meeting of 19th February 2021. Through the Food Systems Summit Dialogues, Rwanda participated, like other countries globally, in the preparation for the Summit and engaged different in-country stakeholders in the process. Most importantly, shaping

a national pathway to action for the Pre-Summit and Summit, and engagement of the Government leadership. Rwanda's overall progress toward continental commitments and declarations (CAADP-Malabo declaration, SDGs and Africa's Agenda 2063) demonstrates that it prioritizes food systems and is in a good position to help mobilize and refine an African position on food systems.





CHAPTER 2

APPROACHES TO CONVENE FOOD SYSTEMS NATIONAL DIALOGUES

2.1. Institutional Arrangement

Rwanda diligently complied with the guidelines provided by organizers of UN Food Systems Summit 2021 and, where appropriate, adapted to the local context. The Permanent Secretary of MINAGRI, Mr. Jean Claude Musabyimana was nominated as convenor (and supported by two co-convenors at MINAGRI) for planning, organization and execution of Dialogues and submission of official responses to the UN Food Systems Summit.

The national steering committee was composed of key ministries dealing with food systems like MoH, MoE, MINALOC, MINICOM, MIGEPROF, MINECOFIN, MYCLUTURE and UN agencies (FAO, WFP, IFAD, UNICEF, UNWOMEN, ITC, UNECA, UNDP, IOM, and WHO) to guide the exercise of conducting the national Food System exercise in accordance to the UN Food System Summit. The technical team of MINAGRI served as national secretariat and was supported by focal persons from ministries and UN Resident Coordinator Office.

The African Union Agency (AUDA-NEPAD) was fully engaged in backstopping and conducting trainings on execution of Food systems National Dialogues and Rwanda team worked closely with the Skills, Systems and Synergies for Sustainable Development (4SD) for technical guidance & performance. The UN Special Envoy for Food Systems Summit 2021, Dr. Agnes M. Kalibata was fully engaged in these endeavors.

2.2. Stages of National Dialogues

STAGE 1 INITIATING NATIONAL ENGAGEMENT IN THE 2021 FOOD SYSTEMS SUMMIT [March – April 2021].

Structured along the five Summit Action Tracks, the first stage initiated national engagement of stakeholders in identifying aspects of Rwanda's food system that need to change as well as key gaps. This stage made stakeholders aware of existing national plans for sustainable food systems.



Republic of Rwanda
Ministry of Agriculture
& Animal Resources



FOOD SYSTEMS SUMMIT 2021 - STAGE 1

ACTION TRACK 5

BUILDING RESILIENCE TO VULNERABILITIES SHOCKS AND STRESS



WEBEX



KIGALI, RWANDA



THURSDAY, 01 APRIL 2021

09:00 GMT+2 - 11:30 GMT+2



Rwandaagri

STAGE2 EXTENSIVE EXPLORATIONS EVERYWHERE: YOUTH WOMEN AND INDEPENDENT DIALOGUES [May – June 2021].

This stage aimed at creating an opportunity for engagement and interconnection among an even broader set of stakeholders through multiple dialogues organized around specific themes that linked to the five Summit Action Tracks. Themes focused but not limited to Production-Processing-Market and Consumption-Nutrition-Climate change & Vulnerability. Cross-cutting issues such as financing, youth & women and Research for development. Women and youth who play a key role in embracing and fostering the growth and development of the Food Systems approach, were engaged to understand challenges they face. Stakeholders identified promising approaches and potential commitments as contributions to the development of the national pathways. A national diagnostic and landscaping extensive research was conducted for Rwanda's Food Systems by Food Systems Transformative Integrated Policy (FS-TIP) coalition, providing in-depth review of current status of Rwanda's food systems aligned to the five action tracks. Team members of the FS-TIP coalition activity participated in the Technical Working Group of the UN Food Systems Dialogues in Rwanda and contributed to the overall insights generated on Food Systems, through intensive interaction with stakeholders in country as well as through various presentations and wide dissemination of the Diagnostic and Landscaping report. The report includes a detailed description of the current state of Rwanda's Food System along a set of 21 supra-indicators (clustered by the UN Food Systems Summit Action Tracks) and the country's key challenges, trade-offs, synergies and potential game changing solutions. It also includes a detailed mapping of policies related to food systems, potential gaps, conflicts and opportunities. The report also maps all key stakeholders and their role in food systems. Other dialogues had a geographic focus such as dialogue on the Rulindo food system, organized in collaboration with FAO with the local citizens to understand the food supply chain between Kigali City and surrounding districts.

STAGE 3 PATHWAY INTENSION AND COMMITMENT: HIGH LEVEL NATIONAL DIALOGUE [July 2021].

The last stage focused on high-level dialogue which brought together Ministers, heads of UN agencies and other decision makers to discuss key challenges in Rwanda's food systems and proposed game changing solutions to establish Rwanda's contributions to the Pre-Summit and Summit 2021. Participants also reviewed progress made towards achieving the SDGs as well as national and continental commitments with the summit objectives.

2.3. Categories of Stakeholders

Food systems being a web of interconnected activities of people and resources that extends across all spheres involved in providing human nourishment and sustaining health, including production, processing, packaging, distribution, marketing, consumption, and disposal of food, it was imperative to engage a dialogue with diverse stakeholders. Therefore, the dialogues included a wide range of stakeholders from different groups of food producers and processors (primary & secondary), distributors and retailers, caterers, marketers, traders, and others directly involved in moving food from farm to fork. They also included professionals who work for the health and nutrition of women and children, as well as those who help to govern territories, protect livelihoods, foster resilience, regenerate ecosystems and participate in climate action. They were from small, medium, and large enterprises, community organizations, universities and more, and included members of stakeholder groups including women, youth, vulnerable peoples.

2.4. Approach Adopted

Given the impact of COVID-19 on gatherings, arrangements were made for the dialogues and were run virtually. This enabled Rwanda to engage a diverse range of key players in national dialogues and enriching discussion.

Every stage had plenary sessions that were chaired by a curator. The curator welcomed the participants, introduced the high-level guests, and described the aim of the dialogue. He/she also gave a presentation on respective topics to provide insight and allow a smooth discussion. Several groups were created based on the country specific features that led to the breakout sessions for further discussion with the stakeholders to capture their views, opinions, and challenges. The discussion groups had facilitators who ensured that all participants had the opportunity to express as well as listen assiduously to the proceedings. Chat boxes were used to express themselves freely. Thus, the facilitator engaged all the participants successfully. The participants were attentive, understanding, and expressive and respected the ideas of other participants. They also challenged in some of the sessions. At the end, the curator summarized the outcomes from the various discussion groups. In short, breakout sessions, panel discussions, plenary sessions and speakers sessions were the major approaches used.



CHAPTER 3

OUTCOMES OF THE NATIONAL DIALOGUES

3.1 Panorama to Rwanda's policy environment

The aim of the National Agricultural Policy (2018), is to transform Rwanda into “a nation that enjoys food security, nutritional health and sustainable agricultural growth from a productive, green and market-led agricultural sector.” The policy objectives were formulated according to the Malabo Declaration (2014) under the Comprehensive Africa Agriculture Development Programme (CAADP) framework of the African Union: 1) Increased contribution to wealth creation, 2) economic opportunities and prosperity, 3) improved food security and nutrition, and 4) increased resilience and sustainability.

In 2016, while developing the National Strategy for Transformation (NST1, 2017-2024), Rwanda domesticated and fostered local ownership over progress towards the SDGs. The policy actions were organized under four broad policy pillars: 1) Enabling environment and responsive institutions; 2) Technological Upgrading and Skills Development; 3) Productivity and Sustainability; 4) Inclusive Markets and Off-Farm Opportunities. These policy actions are implemented through the fourth Strategic Plan for the Transformation of Agriculture (PSTA4).

3.2 Outcomes of the National Dialogues:

This chapter deals with the outcomes of the national dialogues held at various stages and periods of time in accordance to the guidance provided by UN Food System Summit Secretariate.

3.3. STAGE 1 Dialogue Outcomes

3.3.1. ACTION TRACK 1: Ensuring Access to Safe & Nutritious Foods for All

The goal of this action track is to end hunger and all forms of malnutrition and reduce the incidence of non-communicable disease. This action track aims to ensure all people always have access to enough affordable, nutritious, and safe food to enable all people to be nourished and healthy. The National Food Systems Dialogue on Action 1 took place on the 23rd March 2021, which explored the ways food systems should function for the future to achieve Zero Hunger, increase access to affordable and nutritious foods; and improve food safety. Dialogue topics were framed to stimulate discussions that enabled to identify ideas/ game changing solutions.



Discussion Topic 1: Actions to be implemented to attain Zero Hunger target by 2030

This entailed the actions to be taken to strengthen the current policy and strategies (NST1, Agriculture Policy, PSTA 4 and Domesticated SDGs) to achieve Zero Hunger. This topic was intended to trigger challenges and potential game changing actions that will increase the production and availability of nutritious food, reduce inequalities, increase incomes and purchasing power food system actors, increase food utilization and minimize food loss and waste. The dialogue was jointly led by MINAGRI and FAO in collaboration with MINICOM, RDB, WFP, USAID Projects (CNFA / Hinga Weze & Land O' Lakes), International Institute for Tropical Agriculture (IITA), and Sight and life Organization. Discussions revolved around the type of game changing actions that should be implemented for increased availability and accessibility of nutritious foods and rising the challenges faced by Rwanda to increase food safety and concluded on actions to be taken.

Cluster 1: Identification of challenges and potential solutions to increase the availability of affordable nutritious foods

Diverse approaches were suggested such as adoption of modern technologies, agriculture insurance and agriculture financing based on analysis of impacts of programs and technologies to different categories of beneficiaries together with policy support. Contract financing to be a mechanism for increased coverage of financing as well as increased uptake of modern technologies. Continuous monitoring and assessment of financial viability for insurance companies, satisfaction of farmers, and mitigating fiscal burden for the government approaches are to be adopted.

Nutrition mainstreaming (i.e. embracing nutrition aspects in planning and implementation of its support for agricultural production) in existing programs such as Crop Intensification Program (CIP), production of protein rich crops, production of animal sourced protein targeting stunting should be reviewed for nutrition focus. However, promotion of small livestock both at household and industrial production to shape value chain development and scaling up production is indispensable. Research for development and implementation for bio-fortification need to be strengthened.

Cluster 2: Identification of challenges and solutions to increase accessibility of affordable and nutritious food

The major challenges faced were that fish and animal products that provide essential micronutrients are expensive while investments in these areas and participation of the private sector are also low. High stunting rates (33% in children under 5) can be

attributed to low accessibility of nutritious foods. This can be addressed by suitable policies, solving of infrastructure gaps, encouragement of investments, skill development and use of appropriate technology for boosting accessibility of affordable nutritious foods. Hence, creation of conducive business environment for private sector is required to set up communication channels between government and private sector for dialogue to fill gaps as well as among private sector actors for value chain integration such as value chain platforms. Government should invest to improve private sector's access to infrastructure, capacity development opportunity, and other incentives (e.g. land and tax). Youth and women should be supported through financing and skills/capacity development/enhancement programs. Additional resources that are required to be mobilized for further progress from private sector and international community need to be leveraged. Rwanda has already taken several measures to produce nutritious food. However, they need to be further scaled up with financial resources, while of course some improvement may be necessary. As the Government and farmers alone cannot tackle it, and therefore, it is proposed that International Fund should be established for countries with severe food insecurity and malnutrition for them to make progress in achieving zero hunger.

Discussion Topic 2: Challenges faced by Rwanda to increase Food Safety and actions to be taken.

Cluster 3: Identify challenges and solutions to increase Food Safety

Invitees were drawn across public and private stakeholders that are involved in or interface with Food Systems. There is another dimension of food that needs to be considered in food production and consumption; it is the critical aspect of food safety that the consumers are yet unaware. They were more concerned about food for consumption, not knowing its quality attributes neither its nutrient content. This calls for consumer awareness and education. While there is a need to increase certified food products in the market, it was also indicated to address the issue of several food products that were contaminated with aflatoxins irrespective of the standards on the labels. This calls for strengthening partnership arrangements with food producers, traders, and consumer groups to raise awareness, invest more time and money to educate the public and establish strong collaboration between regulatory bodies in the country. This calls for intensive awareness campaign on media channels, consumer education and social behaviour changes on food safety practices, knowledge on nutrients, food labels and their importance in foods etc.,

There are some policies, which provide policy orientation on food safety but not in an inclusive way. This include PSTA 4, some sector specific strategies

but there should be an inclusive food safety policy which may create a framework for interventions, laws, regulations, and organizational structure including policy and strategy committees. There is also a need to have a standalone food safety policy and the implementation of the National quality policy should be communicated to the public. Professional platforms such as Association of Food Scientists platforms and similar associations are required to conduct awareness campaigns so that consumers are trained on food safety. Food safety inspections need to be

mainstreamed to protect consumers and processors from non-compliant companies. Regulatory systems in Rwanda and organizations such as RICA, Rwanda FDA and RSB should be brought to the limelight revealing their roles in the provision of safe and quality food products for the population. In addition, collaboration between RFDA, RICA and RSB on food safety issues need to be clarified and communicated to food processing industry and consumers. A summary of Action Track 1 is indicated in Table 1.

Table 1 Summary of Action Track 1

 ACTION TRACK 1: ENSURING ACCESS TO SAFE & NUTRITIOUS FOODS FOR ALL Date: 23rd March 2021		
Discussion Topic 1: Actions to be implemented to attain Zero Hunger target by 2030		Discussion Topic 2: Challenges faced by Rwanda to increase Food Safety and actions to be taken.
Cluster 1: Identification of challenges and potential solutions to increase the <u>AVAILABILITY</u> of affordable nutritious foods	Cluster 2: Identification of challenges & solutions to increase <u>ACCESSIBILITY</u> of affordable and nutritious food	Cluster 3: Identify challenges and solutions to increase <u>FOOD SAFETY</u> .
Suggested approaches: - Adoption of modern technologies - Agriculture insurance and agriculture financing - Contract financing. - Continuous monitoring and assessment of financial viability	Suggested approaches: - Fish & animal products that provide essential micronutrients should be made accessible as they are expensive and so inaccessible - High stunting rates should be addressed by suitable policies, solving of infrastructure gaps, encouragement of investments, skill development and use of appropriate technology for boosting accessibility of affordable nutritious foods.	Suggested approaches: - Need to increase certified food products in the market. - Strengthening partnership arrangements with food producers, traders, and consumer groups to raise awareness on aflatoxin - Invest time and money to establish strong collaboration between regulatory bodies in the country.

Nutrition mainstreaming in existing programs:

- Crop Intensification Program (CIP),
- Production of protein rich crops,
- Promotion & Production [household & industrial] of small livestock for animal source protein foods.
- Research for development
- Strengthening bio-fortification.

Government's role:

- Creation of conducive business environment for private sector.
- Government should invest to improve private sector's access to infrastructure, capacity development opportunity, and other incentives (e.g., land and tax).
- Youth and women should be supported through financing and skills / capacity development / enhancement programs.
- Scaling up of producing nutritious food along with financial resources.
- Establishment of International Fund to achieve zero hunger

Government's role:

- Intensive awareness campaign on media channels, consumer education and social behaviour changes on food safety practices, knowledge on nutrients, food labels and their importance in foods etc.,
- Inclusive food safety policy to create a framework for interventions, laws, regulations, and organizational structure including policy and strategy committees.
- To have a standalone food safety policy
- Implementation of the National quality policy should be communicated to the public.
- Professional platforms to become dynamic [Association of Food Scientists] to conduct awareness campaigns and train consumers on food safety.
- Food safety inspections to be mainstreamed to protect consumers and processors from non-compliant companies.
- Regulatory systems in Rwanda and organizations such as RICA, Rwanda FDA and RSB should reveal their roles in the provision of safe and quality food products for the population.

3.3.2 ACTION TRACK 2: Shift to Sustainable Consumption Patterns

The nutritional need of the body is determined by age, sex, the physical activity, physiological status as in pregnancy, lactation, disease conditions etc. Yet, Rwanda does not have the food composition table and neither does it have the nutritional needs determined

for the population. At this juncture, it was imperative to employ the life span approach across the age groups of the population viz., early childhood, school going children, adults including vulnerable groups to address the issue of shifting to sustainable consumption patterns (promoting and creating demand for healthy and sustainable diets while reducing waste). A summary of Action Track 2 is indicated in Table 2 .





Discussion 1: Efforts of the Government of Rwanda to promote and create demand for nutritious foods among children under 5 years

The country has developed Strategy for Social Behavior Change Communication. It is also involved in undertaking the following key activities to promote and create demand for nutritious foods among children under 5 years that will enable the population to have enough, nutritious, and safe foods. To accomplish this, the country has developed the Food and Nutrition Policies and Strategic plan for agriculture transformation that has enabled it to attain several achievements that have improved the status of nutrition and household food security in Rwanda and has put in place.

The critical challenges are production of enough animal source foods viz., eggs, meat, fish etc., to enhance the biological value of protein and haem iron consumption in the diets of the population especially among the growing children. Gap between knowledge and practices are huge. Research shows that knowledge of good diet is high but there is a huge gap of 'ideal practices' in feeding and the sub-optimal practices which ultimately lie behind high rates of stunting (33%) and anaemia (37%) among children under five years (Rwanda Demographic and Health Survey 2019-2020). For instance, about 88%, caregivers of children under five are knowledgeable about the required optimal nutrition for children required but only 22% of children aged 6-23 months are fed a minimum acceptable diet. Over-nutrition on the other hand is rising; overweight cases among Rwandan women

increased nationwide from 12% in 2005 through 16% in 2010 to 21% in 2015, reaching to 40% in urban areas (Rwanda Demographic and Health Survey 2014-15). Access to safe water and clean water is still another challenge that the government is working hard to tackle.

To curb these initially, effort was taken to develop the National Social and Behavior Change Communication (SBCC) strategy for Integrated Early Childhood Development Nutrition and WASH aiming at improving knowledge, attitude and practices at community and household levels to overcome the challenge. The Government is putting much emphasis on the development of strong and innovative SBCC interventions to engage mothers/caregivers at households to translate the knowledge attained into tangible best practices on promotion of Infant Maternal and Young Children Feeding (IMYCF) and cooking demonstration within villages. Rwanda also developed the National Nutrition Counseling Cards to promote healthy diets among children under five years. The counselling cards are used by Community Health Workers to counsel mothers right from the stage of pregnancy. Other important developments were the scaling up of ECD services including parenting sessions to help parents understand the importance of taking time in the selection of foods, preparation and feeding of their children at regular intervals. The Government is putting in place the breast milk substitute code aimed to contribute to the provision of safe and adequate nutrition for infants, by the protection and promotion of breast-feeding, and by ensuring the proper use of breast-milk substitutes.

The development of the child score card model that records length, height, and mid upper arm circumferences (MUAC) at village level, to track health and nutrition of children under 2 years of age was a supplementary effort to follow up on children's nutritional status. This child-centered approach enables the follow up of children and examines stunting levels. The child score card further enables to create stunting free villages and households across the country, using an individual child score card to guide parents, community health workers and local leaders to timely identify the intervention gaps that need to be addressed at early stages before the nutrition situation of the child deteriorates. The main goal is to accelerate the reduction of stunting to achieve the National Strategy for Transformation (NST 1) set at 19% by 2024. The Government is also strengthening the coordination, monitoring and evaluation of nutrition interventions in the country ensuring that every investment yields the desired results. In another continuous effort to promote healthy diets among children under 5 years of age, is that the Government has put in place the Rwanda Food and Drug Authority (RFDA) to promote food fortification and safety. It further ensures that the food which is imported meets the micronutrient requirement. It is also envisaged to establish another legislative framework to ensure reduction of postharvest food losses and development of code of breast milk substitute to discourage the use of illegal marketing.

The bottlenecks that hinder the demand for healthy and sustainable diets is lack of finance that adversely influence the poor choice and selection of high calorie, low – nutrient foods that lack animal source foods. On the other hand, urbanization is shaping food choices especially among children and adolescents. To create demand for healthy, sustainable diets and reduce waste at all stages of the value chain, Rwanda needs to put in place interventions that promote all dimensions of individual health and well-being, facilitate accessible, affordable, safe, and equitable nutritious food that is culturally acceptable.

Multisector, multilevel can influence a substantial shift towards healthy dietary patterns; large reductions in food loss and waste; and major improvements in food production practices. Additionally, mobilization of supportive systems comprising of health, water and sanitation, education, and social protection to scale up nutrition results for all children is a requirement to support shifting to sustainable consumption patterns by promoting and creating demand for healthy and sustainable diets, reducing waste. Further, gender-related impacts, especially with regard to time allocation (e.g. for buying and preparing food, water and fuel acquisition) must be taken into consideration as gender inequality issues cannot be separated from actions to tackle poor diets, poverty, hunger and poor health. Setting up stronger legislation that is pro-

nutrition such as a comprehensive legal framework related to infant and young child feeding will strengthen the efforts of child nutrition. Regulation of healthy foods, marketing of suitable healthy milk substitutes, accurate labels with good visibility to make choices of purchase and similar strategies can enable the nutrition and health of the population. Another aspect under consideration is to improve the practice and access to animal source foods either through ability to purchase or rear animals to enhance the quality of protein intake. The most essential aspect is to promote handwashing to prevent the foodborne illnesses.

Since 2007, 2008, 2010, there are programs to increase the promotion of growing foods and vegetables and consumption of them through program called kitchen-gardens that motivates the farmers and consumers to grow more fruits and vegetables and to consume them. The program of one cup of milk per child enables to increase the consumption of milk among children that increases micronutrients and some protein intake. The program of one cow per poor family increases milk production and promotes the consumption of milk. There also a program of increasing the production and consumption of bio-fortified foods including irons, beans orange, sweet potatoes and yellow cassava, promotion has been for so long more than ten years now. While the program promoting the small livestock production including pigs, goat, chicken, rabbits facilitates consumers have access to animal protein meat. Though land locked in nature, the country has several lakes that are scattered across the breath of the country. They could be utilized which can cause a paradigm shift in exploitation and management of the fisheries resources to cost-effectively utilize the country's economic and natural potential for increased and sustainable fish production. It calls for a shift from open access to controlled and commercialized fisheries production for efficient, sustainable, equitable and profitable capture fisheries and aquaculture sector in the country.

The nutritional and aesthetical quality of horticulture is easily jeopardised due to its innate perishable characteristics and poor handling. Hence, postharvest losses of horticulture have been as high as 35% in some value chains. Food loss occurs across the value chain and is high at different hotspots for different foods. Food loss represents increased financial and environmental costs incurred in producing foods that never reaches the consumer. To prevent postharvest losses of horticulture crops interventions have been put in place. Farmers have been equipped with skills to handle gently and tools like use of crates, harvesting bags etc., to reduce postharvest losses. Solar panelled cold rooms are large cold rooms at NAEB and at the airport for the exporters are also available to maintain quality of the produce. Farmer-allied intermediaries can be engaged in specific value chains, e.g., milk to reduce food losses and improve yields and increase

farmer access to a durable market.

Due to the inspiration of the government and the assistance of the development partners production of nutritious foods has improved. Hence processors have the benefit of required raw materials, business development funds and the support of the government in obtaining tax exempted from processing equipments. To enhance distribution of foods, raw and processed, feeder roads have been established to connect markets. This has led to the increase of markets at local, regional, and global levels; local markets have grown tremendously to help villagers and local communities to access fresh foods. Consumers need a high level of education about the nutritious quality of foods, selection, consumption at various stages of life. There is mismatch between demand and supply of food in terms of quantity and kind of food. Regulation of market for the quality and prices need to be done and should be segmented and low-priced at the village level especially for proteinaceous foods. Lack of market information system impedes the farmer to sell his produce as he/she does not know the place of demand and want. Another aspect to consider is the economic condition of the population that makes it difficult for them to purchase nutritious and animal source foods.

The journey of the government to promote and create demand for nutritious foods among school going children has been efficacious. The Comprehensive

Nutrition School Feeding Policy that came into existence since 2019 enlarged to scope of feeding that was initially only for secondary students (600,000) to all students (3.5 million) starting from pre- school. Operational guidelines in the formulation of nutritious meal plans that were developed in 2020 considering age and sex. The meal plans utilized locally available and nutritious foods that contributed to a balanced meal; considerations were also given to adolescent boys and girls to capture their nutritional requirements due to the growth spurt period. Utilization of local foods from small holder farmers enabled the students receive fresh, inexpensive foodstuffs with preserved nutrients. Provision of such nutritious and diversified meals will contribute towards the shaping of their sensory habits and preferences for such foods later in their life. Such knowledge and awareness educates the school children about the quality and importance of such foods for a healthy life. Ministry of Education, WFP and other partners are working together to develop the national school feeding program and are currently finalizing school feeding ministerial instructions which will ensure that the menu modeling and nutrition guidance is delivered. This colossal activity requires infrastructures, finance and supply of safe, seasonal, good quality and required quantity of food at the right time. Financing being the most critical part, parents share the burden by bearing 60% of the cost. Furthermore, with the technical support of FDA and AIF, the Ministry of Education ensures that students are consuming fortified and nutritious foods.



Table 2 Summary of Action Track 2

	ACTION TRACK 2: SHIFT TO SUSTAINABLE CONSUMPTION PATTERNS Date: 23rd March 2021
Discussion Topic 1: Efforts of the Government of Rwanda to promote and create demand for nutritious foods among children under 5 years	
Suggested approaches: - Production of animal source foods – quantity & quality. - Create enabling environment for narrowing the gap between knowledge & practice in the consumption of animal source foods for children under 5yrs - Access to safe water and clean water. - Promotion of breast-feeding, and by ensuring the proper use of breast-milk substitutes. - Support shifting to sustainable consumption patterns by promoting and creating demand for healthy and sustainable diets, reducing waste - Approaches to minimize gender-related impacts to food, water and fuel purchase - Promote handwashing to prevent the foodborne illnesses. - Continue the emphasis of kitchen garden, 1 cup of milk / child, consumption of biofortified foods - Strengthen market information system to enable farmers to obtain data	
Government's role: - Food and Nutrition policies - Comprehensive Nutrition School Feeding Policy - Operational guidelines in the formulation of nutritious meal plans - Strategic plan for Agriculture Transformation - Innovative interventions to bring to implement the National Social and Behavior Change Communication (SBCC) strategy for Integrated Early Childhood Development Nutrition and WASH aiming at improving knowledge, attitude and practices at community and household levels. - Rwanda Food and Drug Authority (RFDA) to promote industrial food fortification and safety - Setting comprehensive legal framework related to infant and young child feeding. - Regulation of healthy foods, marketing of suitable healthy milk substitutes, accurate labels with good visibility to make choices of purchase and similar strategies to enable the nutrition and health of the population. - Tax exemption in importing processing equipment's - National school feeding program to provide infrastructures, finance and supply of safe, seasonal, good quality and required quantity of food at the right time.	

3.3.3 ACTION TRACK 3: Boost Nature-Positive Production - Sustainable Food Production Systems

It has been realized that food production systems that are not pro-environment threaten climate stability and ecosystem resilience. They may drive the degradation of land productivity and soil health, as well as biodiversity loss at multiple spatial scales, ultimately compromising the sustainability of food production system in the country. According to the Rwanda Updated Nationally Determined Contribution (NDC), agriculture sector accounts for 43% of the total estimated Greenhouse Gas (GHG) emissions by 2030. Achieving the nature-positive production system, therefore, will require significant changes in the three key areas:

- The protection natural ecosystems against new conversions for food and feed production.
- The sustainable management of existing food production systems to the benefit of both

nature and people.

- The restoration and rehabilitation of degraded ecosystems and soil function for sustainable food production.

The National Food Systems 2021 Dialogues on Action Track 3 “Boost Nature-positive food production systems” was organized in three stages to provide an opportunity for all actors to discuss the required transformational changes and opportunities for boosting nature-positive production at sufficient scales and the pathways to achieve it. The stage 1 dialogue was organized virtually on 14th April 2021 and it included stakeholders from government institutions, development partners, embassies, private sector, academic and research institutions, and media houses. The National Food Systems Summit Dialogue stage 1 was organized around three topics to stimulate discussions towards the identification of solutions required to achieve nature-positive production system. A summary of Action Track 3 is presented in Table 3 .



Discussion Topic 1: Increase food production without expanding agricultural land and threatening natural ecosystems

The dialogue revealed gaps and challenges faced by the country while trying to meet food demand and at the same time preserving the natural resources and biodiversity. The greatest challenges were the dynamism of demographic pressure and rapid urbanization that were overtaking agricultural land, and overexploitation. Simultaneously, there are some social challenges. For instance, some ecosystem services are more appreciated than others just as high value market products are appreciated over biological controller (nutrients and pollinators). Those that we consume directly, such as food and raw materials, are valued in markets. Others such as biological control, pollination and nutrient cycling play vital life supporting roles, but are less easily valued. The farmers on the other hand have the mindset that the higher the fertilizer addition, higher the production. Under these circumstances however, knowledge and skills development for farmers should have an important consideration.

Discussion Topic 2: Sustainable management of food production systems to benefit both people and nature

The sustainable management of food production to benefit both people and nature is essential in the Rwandan farming systems. It is important to support the development of different project interventions for raising awareness of climate change issues, and potential climate change resilient farming systems to the farm communities viz., irrigation and water management projects, use of climate resilient varieties, soil erosion control, investment in post-harvest infrastructure and expansion of crop and livestock Insurance. It is imperative advocate and establish linkages with national / international financial mechanisms to provide fund supporting for sustainable management of food production systems to benefit both people and nature under NDCs (mitigation and adaptation) and other funding sources. Continued provision of providing earmarked

budgets allocated to decentralized entities to achieve sustainable management of food production systems to benefit both people and nature is also an important element. Being an associated effort, the contribution of all actors NGOs, Government, Private sector, ...) are to be understood and recognized for the sustainable environment management especially in food production systems while limiting GHGs emissions growth. Promotion of private sector investment and finance for agriculture through creation of PPP (Public-Private Partnership) in developed agroforestry system, land management infrastructures and facilities (terraces, irrigation, Small Scale Irrigation Technologies) are also good scenarios.

Discussion Topic 3: Restore and rehabilitate degraded systems for sustainable food production and ecosystem services

Due to its hilly land and the presence of drought prone areas (mostly in the Eastern Province), Rwanda has high vulnerability to climate change and growing challenges from crop disease, insects. It is important to note that changing biodiversity profile will lead to lower productivity and food availability.

Food production is a major driver of ecosystem degradation as it often comes at a cost of the integrity of the ecosystem. It is important to note that in many countries, likely in Rwanda, the expansion and intensification of agriculture have brought many benefits to humanity but have had profound negative impacts on biodiversity & ecosystem services. This can be attributed to the disconnect between identification of research needs of the farmers at the grassroot level and the research institutions to provide appropriate solutions. Several research areas could be identified such as promoting climate smart-agriculture, conservation agriculture, biological pests and diseases control, intercropping systems, proper use of chemical fertilizers, practices that enhance biodiversity. Indeed, lack of funds for innovative initiatives that aim at improving ecosystems and biodiversity, and limited awareness of the local communities on the importance of maintaining ecosystems and biodiversity were found as additional challenges.

Table 3 Summary of Action Track 3

	ACTION TRACK 3: BOOST NATURE-POSITIVE PRODUCTION - SUSTAINABLE FOOD PRODUCTION SYSTEMS Date: 14th April 2021	
Discussion Topic 1: Increase food production without expanding agricultural land and threatening natural ecosystems	Discussion Topic 2: Sustainable management of food production systems to benefit both people and nature	Discussion Topic 3: Restore and rehabilitate degraded systems for sustainable food production and ecosystem services
Suggested approaches: Challenges faced between trying to meet food demand and at the same time preserving the natural resources and biodiversity to be priorities and policies examined to achieve food production without expanding agricultural land and threatening natural ecosystem.	Suggested approaches: - Raise awareness of climate change issues and potential climate change resilient farming systems to farm communities viz., irrigation and water management projects, use of climate resilient varieties, soil erosion control, investment in post-harvest infrastructure and expansion of crop and livestock Insurance. - Advocate and establish linkages with national / international financial mechanisms to fund sustainable management of food production systems to benefit both people and nature under NDCs (mitigation and adaptation). - Continued provision of providing earmarked budgets allocated to decentralized entities to achieve sustainable management of food production systems to benefit both people and nature. - Contribution of all actors (NGOs, Government, Private sector) to be understood and recognized for the sustainable environment management especially in food production systems that limit GHGs emissions growth. - Promote private sector investment and finance for agriculture through creation of PPP (Public-Private Partnership) in developed agroforestry system, land management infrastructures and facilities (terraces, irrigation, Small Scale Irrigation Technology)	Suggested approaches: - Identification of research needs of the farmers at the grassroot level and the research institutions to provide appropriate solutions. - Several research areas could be identified such as promoting climate smart-agriculture, conservation agriculture, biological pests and diseases control, intercropping systems, proper use of chemical fertilizers, practices that enhance biodiversity - Allocation of funds to improve ecosystems and biodiversity, - Increase awareness of the local communities on the importance of maintaining ecosystems and biodiversity.

The key recommendations from the Action 3 Dialogue were the following:

- Fast-tracking the implementation of Land use Master plan to protect and efficiently utilize the agriculture land
- Promote agro-systems at local level with ecosystem-based approaches that maximize production on small land, build on and strengthen natural services such as pollination, soil fertility and ecological functions - especially on the smart use of chemical fertilizer.
- Investment in research to facilitate farmers to obtain quality seeds of the crops most suited to their farming systems, conditions and needs.
- Research in recycling waste from agricultural markets into organic fertilizers through various technologies such as vermicomposting,
- More focus in protection of sensitive ecosystems, particularly wetlands and key water catchment areas.
- Develop and promote climate- resilient crops
- Restore degraded systems for sustainable food production
- Develop early warning systems, to improve forecasting and monitoring
- Enhance extension services to improve understanding and skills of communities in balancing chemical and organic fertilizer.
- Promote indigenous species in agroforestry and landscape restoration in high-risk areas.
- Identification of Financial mechanism by establishing a National Framework for Biodiversity Funds and Involve Private Sector.
- Food system institutional framework extends beyond MINAGRI, which calls for enhanced coordination of efforts as well as greater consultations for policy coherence. There should be greater inter-ministerial coordination to determine the trade-offs between agriculture and environment. For example, improve institutional coordination to mainstream biodiversity and agro-ecosystem services across different sectors by creating a National Agro-Biodiversity Task Force
- Food systems should go beyond agricultural production and should include all aspects in the value chain from production to consumption including the nutritional value of food.
- The role of the circular economy should be enhanced when analyzing food systems
- To address gaps in the implementation of innovative solutions, there should be tangible data to monitor food systems, including monitoring of beneficiaries and awareness raising on available services along the value chain
- Digital data management and sharing and integrating data along the value chain by strengthening NISR-National Institute of Statistics of Rwanda data sources
- Research and development and knowledge sharing are key factors in enhancing nature-positive agriculture, including the strengthening of extension services.
- Enhance yield-improving technology while reducing GHGs emissions and land degradation
- Promote more labor-saving technologies along the value chain in the long-term. This should include developing subsidies for technology adaptation as a means of catalyzing agricultural development.
- All actors along the value chain should be strengthened through creating platforms for regular dialogues to understand gaps and develop solutions. However, existing platforms should be operationalized.
- Inclusive consultation processes and participatory assessments on land degradation is critical for the design of effective ecosystem restoration strategies through soils, crops, livestock, and wildlife management interventions.
- Micro-agriculture, urban agriculture, and landless agriculture to address the mounting pressure on agroecosystems for the benefit of both people and the planet.
- Organize biodiversity awareness trainings at the community levels Increased collaboration of the civil society and researchers in the sector of sustainable food production and ecosystem services

3.3.4. ACTION TRACK 4: Advance Equitable Livelihood

Action Track 4 focused on the challenges of equity and inequality and power imbalances that exists at household, community, national and global levels especially among the rural mass or vulnerable people who are either not remunerated or under paid. Apart from limited skills and knowledge, their abilities are also restrained due to other forms of objective barriers such as equitable access to livelihoods, which include lack of infrastructure that limits access to services. They are consistently constraining the ability of food systems to deliver poverty reduction and sustainable, equitable livelihoods. For food systems to advance equitable livelihoods, it is essential to look at poverty across the food value chain, the groups whose livelihoods are most limited by current food systems practices and norms that limit equitable livelihoods, especially for some categories of people such as women, youth, and people with disabilities. A summary of Action Track 4 is provided in Table 4.

Action Track 4 was exceedingly relevant to Rwanda's national plans. Vision 2050 sets 'high quality and standards of life for Rwandans' as the overarching goals with human development and agriculture for wealth creation among the pillars. It is also strongly linked to Sustainable Development Goals (SDGs) such as No Poverty, Zero Hunger, Gender Equality, and Decent Work and Economic Growth. With less than 10 years remaining to achieve the SDGs, it is of paramount importance to reassess current progress, identify gaps and work collaboratively on solutions. In advancing equitable livelihood across the food systems, smallholder farmers and other rural people should be positioned at the heart of transforming food systems and achieving the SDGs.

The three thematic areas below guided discussion on Action Track 4 during the country Food System Dialogues. While these themes are interrelated, the discussion focused on each theme individually that allowed to recognize specific challenges in building sustainable food systems in Rwanda and come up with actionable solutions.



Promoting productive employment and decent work for all. This thematic area included topics such as employment creation, decent work, and rights at work. Challenges included creating inclusive work opportunities along the food system/value chain, importance of skills development and roles of the private sector such as traders / off-takers, agro-input dealers, and processors. Rwanda's main employment challenges include working poverty and underemployment (< 35 hrs/week), which are underlying causes of the higher poverty rate among

rural residents (49%) compared to urban areas (22%). Limited income and income growth for farmers makes agriculture unattractive and increases urban migration. Despite the importance of the agriculture sector in Rwanda's economy, sufficient employment opportunities are yet to be created for those in subsistence agriculture.

Raising income and social protection programs. This thematic area focused on the role of the Government through its programs and policies in raising income for

all. Home Grown Solutions such as Girinka Program and Ubudehe have made positive impacts in economic and social spheres among the vulnerable populations. For example, since its start in 2006, Girinka Programme has provided cows to over 300,000 families. It has contributed to doubling milk production, helping reduce malnutrition as well as improving household income. In addition, this thematic area investigated on the increase in income of smallholder farmers through agriculture productivity increase and market access. Further modes of integrating smallholder farmers into productive and improved value chains for increased agriculture revenues were explored.

Redistributing/mitigating social and societal risks. This thematic area explored the risks of unemployment, increased health inequalities, financial instability, reduced education attainment and how we can redistribute/mitigate them. In the agriculture context, it was important to consider the weather/climate-related risks and ways to mitigate the negative impacts on farmers. Small-scale farming is often considered more environmentally sustainable than industrial scale systems. While over 60% of the workforce is in agriculture and its sub-sectors, their informal form of employment creates a risk, making it difficult for many to access financial services. Adopting smarter investments in small-scale farming, through strategic multi-stakeholder partnerships seems to be an appropriate approach. The discussion focused on ways smallholder farmers could mitigate social, societal, and environmental risks and the role of the private sector.

Thematic Area 1. Promoting productive employment and decent work for all

Girinka: Most of the beneficiaries are people who have low level of education and financial literacy to start any other business. Hence, this program paved a way to increase their income and through groups. Some of the beneficiaries started business, others improved their agricultural productivity with the availability of manure while the family nutrition was enriched.

Ubudehe and VIUP programs: Led to more income among poor citizens; the only issue noted was some beneficiaries concentrated on working for money in the public works and forget to work on their small farms which could lead to food insecurity in their households. There was a suggestion that paid works under these programs are scheduled in off-seasons to allow the potential beneficiaries work on their own small farms (for those who have land).

Direct support to old people: This supported extremely poor older people who live in household with no labor capacity and has mainly helped them to pay farm labour for example and this had a positive impact on their income and food security.

Thematic Area 2. Raising income and social protection programs

Social protection programs: It was crucial to train them on ways to invest the money they obtained in small businesses and save a portion as in groups. A proportion of their money could put on an account (from the source) and could be later used as a start-up to the small business. It was imperative to enable them to adapt progressively, mobilize, build their capacity, and make sure they get organized in groups by their own accord to build their ownership / stewardship. They could further be sustained through government interventions and connecting them (through groups) with the private sector to strengthen them.

Challenges related to social protection programs and policies: There was a high level of dependence of beneficiaries who continued to show low ownership in terms of taking care of different interventions they benefit from various programs. There is a need to continually create a room in planning for the unforeseen as climate changes, pandemic shocks, and similar disasters as in covid-19. Lack of postharvest infrastructures that would help reducing losses in the time of shocks that needs to be catered for. Sometimes they do not reach the direct beneficiaries (children), most of the time they enjoyed by another as in the case of Nutrition program. Certain gaps have been identified in implementation of policies at grassroot level. It is imperative to strengthen the M&E systems to understand beneficiaries' constraints in implementing these programs. Support the integration of smallholder farmers in the food system. Sometimes they follow the government policies but once they harvest, fail to get remunerative markets. As part of policy formulation process, it is important to formulate the role of each actor in the food system and make them specific to each value chain. Communicate the roles and responsibilities.

Thematic Area 3. Redistributing social and societal risks.

Agriculture remains the dominant sector of the economy in Rwanda, contributing to about a third of the country's Gross Domestic Product (GDP) and about half of its export earnings. The government has therefore made agricultural development a priority and allocated significant resources to improving productivity, promoting sustainable land management, and developing supply chains and value-added activities. Partners have also been present in Rwanda supporting with strong program and advisory support towards an increased and sustainable agriculture development in Rwanda.

There were several positive results achieved through the various measures put in place viz., green revolution though actors central to agriculture development,

smallholder farmers, still faced a series of risks and challenges. Ways to mitigate them are portrayed below.

Production risks: Agriculture is dominated by small-scale, subsistence farming with inadequate agricultural practices and rain-fed agriculture. As a result, average crop yields are low compared with potential yields, and exposed to risks such as weather-related shocks, climate change, soil acidity, pests, and disease outbreaks, etc. A big portion of the soil is acid where maize and beans, culturally vital food crop, will not be able to grow at their full capacity / potential. The Government provided earmarked funds for support. But there is a need to do more. Access to inputs need to be market based and therefore needs to connect input supply and demand. Input supplies need to also and most importantly be contextualized based on the technical requirements and climatic conditions of specific areas, for example fertilizers site-specific recommendations.

Interventions towards addressing production-related issues need to consider activities aimed to improve water management and soil amendment systems across the country, strengthen pest and disease management in crop production, modernize agricultural practices and tackle issues of value addition, establish robust quality management systems, ensure quality inputs - seeds and fertilizers, agricultural lime and others. A quality management system was also advocated to be put in place specifically emphasizing soil acidity that does not stop with amendment but needs to be done continuously to avert soil erosion, etc. in soil erosion prone areas such as the Congo Nile region. Climate Smart Agriculture (CSA) could also be envisaged.

Insufficient Agriculture Extension and Advisory Services (AEAS) for smallholder farmers and cooperatives were recognized to be significant for promoting increased agricultural productivity and incomes. AEAS can encompass training for improved inputs and techniques to increase production, information on improved crop varieties, soil quality, cropping practices for staples/cash crops, minimizing the impact of climate change (e.g., severe weather events, especially drought), livestock production, post-harvest handling, grain storage, nutrition, and improved marketing techniques/approaches. If made robust, it can offer the required services to agricultural actors.

Some solutions identified were the promotion of better Good Agriculture Practices (GAP). While knowledge gaps in basic areas such as in tractor use, irrigation systems, and other basic skills needed to switch from subsistence agriculture to market agriculture.

Establishment of a “model farmer” in every village is a key. Model farmers are experts and capacitated to train back their fellow farmers. Before the start of every season, the farmer promoter coaches farmers on basic agricultural practices. Such peer farmer activities speeds up knowledge exchange and actions and agricultural transformations that will leave none behind through the food systems approach. Furthermore, building on cooperatives and farmers’ organizations as key instruments to engage with smallholder farmers was paramount. The participants acknowledged and appreciated the laudable efforts of the Government’s strong focus in that regard and proposed some good examples on decentralizing the AEAS services, relying further on cooperatives and similar systems to reach out and impact smallholders. Strengthening risk management capacity of cooperatives and other farmers’ organizations to make them stable and productive was envisaged. Linking actors to processing plants and supervising them, reinforcing cooperatives human resources: accountant, and other resources. Furthermore, when designing support program to smallholder farmers, participants emphasized the need to provide sustainable support, not just cash distribution, to farmers and have a more sustainable perspective into their approach to enable beneficiaries capable of making decent revenues on the long run at the end of some projects. Support programs to smallholder farmers to also review the technical expertise provided to farmers and be specific to some / relevant crops since certain sectors need emphasis as in livestock, fish farming, beekeeping etc., and are also equally responsive to climatic and other agricultural-prone conditions in Rwanda.

Financing. A significant proportion of small-scale farmers, including women and disadvantaged groups suffer from access to (adequate) financial services. The lack of collaterals from farmers and businesses, coupled with difficulties for financial institutions to price the risk of loans to smallholder farmers is an important impediment to the development of the sector. It was emphasized that smallholder farmers need to be viewed as what they represent: as the 1st private investors when it comes to agriculture development. In one hand, smallholder farmers face critical issues, including lack of collateral weak financial literacy. Financial institutions catering to agriculture, small holder farmers, don’t have customized/tailored products for while they critically lack the required capital for their activities. Loans are provided at standard rates with monthly instalments vs production of 6 months harvesting period. Such offers do not correspond to reality.

Table 4 Summary of Action Track 4

	ACTION TRACK 4: ADVANCE EQUITABLE LIVELIHOOD Date: 09 April 2021	
Thematic Area 1. Promoting productive employment and decent work for all	Thematic Area 2. Raising income and social protection programs	Thematic Area 3. Redistributing social and societal risks.
Suggested approaches: - Encourage beneficiaries of Ubudehe and VUP programs working for money in the public works to work on their small farms which could lead to food security in their households.	Suggested approaches: - Train people on investing the money they obtain in small businesses and save a portion - Create room in planning for the unforeseen as climate changes, pandemic shocks, and similar disasters as in covid-19. - Address gaps in implementation of policies at grassroot level. - Formulate and communicate the role of each actor in the food system and make them specific to each value chain	Suggested approaches: - Access to inputs need to be market based and therefore needs to connect input supply and demand. - Input supplies need to also and most importantly be contextualized based on the technical requirements and climatic conditions of specific areas (ex. Site-specific fertilizer recommendations) - Establishment of robust quality management systems, ensure quality inputs - seeds and fertilizers, agricultural lime etc., - Agriculture Extension and Advisory Services (AEAS) for smallholder farmers and cooperatives were recognized to be significant for promoting increased agricultural productivity and incomes.

SOLUTIONS

There is a need to regulate law on financial services that should address the context / reality of farmers and small farmers. Commercial banks, SACCOs and other Financial Institutions (FIs) play a critical role, but don't have the capacity on developing tailored financial products for smallholder farmers. They are familiar on the standard commercial dynamics but not when it comes to agriculture. Development partners should look at how to encourage and support financial institutions to tailor their products. There is a need for a feasibility study of a commercial / agricultural bank to support small holder farmers to march out of subsistence agriculture and make it an economically productive endeavor. A clarion call on the financial institutions to put in place specific lines of credit with a threshold amount dedicated to agricultural commercial activities, assess, and review the performance of existing mechanisms such as Export promotion guarantees as farmers too need to build their financial literacy as they are at the center of the A2F intervention. Development partners and Government to foster links between farmers and FIs. The Government' plans to continue bringing farmers under cooperatives and frameworks was highlighted as pertinent, as well as the need to have discussion (political motivation and will) fostered between the two parties. Private sector to promote further

agricultural insurance services. A growing practice is to bundle agricultural insurance with other products and services provided to smallholder farmers, through aggregators. While access to financial services is a frequent constraint at all segments of agricultural value chains, pre-harvest financing at the farm level was identified as the biggest gap. Enhanced access to pre-harvest financing is critical for farmers to use high quality inputs and equipment's more quickly and on a larger scale.

Access to markets remains a key constraint for smallholder farmers to effectively enable success in their transition from subsistence agriculture to market-based agriculture. Discussions further indicated solutions viz., participation of smallholder farmers as cooperatives and farmers' organizations, women and youth, and a strong joint role for the Government, development partners and the private sector (producers, processors, traders) and tap into new areas such as digitalization and Climate Smart agriculture.

Smallholder farmers often lack access to profitable, value-added markets. In the absence of critical supporting functions – such as infrastructure and service provision – farmers struggle to shift from subsistence agriculture to more productive or market-based agriculture. With all efforts taken into consideration, complying with certifications

and standards remain paramount. Supporting smallholder farmers in complying with certification and standards was required to access regional and global markets. The approach of the International Trade Centre of working with farmers to improve their production and integrate them into more inclusive and profitable market systems by equipping them with knowledge tools and technical support in the areas of trade market intelligence, standards, and certifications (Global Gap, HACCP, ISO 22000, Fair Trade etc.), appropriate packaging, developing a business approach to their farming, and facilitating exporters-buyers matchmaking and support to export. Facilitating access to markets was also considered as a strong de-risking element for financial institutions when providing financial services to smallholder farmers. Other key challenges highlighted included the lack of adequate rural infrastructure, knowledge gaps, lack of reliable data, as well as expropriation risk and land management issues.

Adoption of ICT, the excellent tool, has shown promising results in enabling resource-poor farmers to use high-quality inputs they normally cannot access. Using Innovation and technology in areas such as market information, agricultural practices, financial services would help reaching smallholder farmers and bring superior impact. One of the programs in the country endorsed Rwandan farmers to purchase inputs using their mobile phones. Agriculture being a promising career that would never fade away would be a promising avenue to mobilize and retain youth in the agriculture development plans for modernization and sustainability. Dedicated mechanism that enhance women inclusion in agriculture should be encouraged.

Promotion of Climate Smart Agriculture (CSA): Livelihood Shocks In 2018, 40% of households, compared to 27% in 2015, reported having at least one shock during the last 12 months that affected its ability to provide food for itself or eat in a manner it is accustomed to or impacted household ownership. In 2020, uptake of agriculture insurance was less than 0.5%. Drought, intense and erratic rainfall, increasing incidence of high winds and seasonal temperature shifts affect agriculture, which is a main source of livelihood. Food insecure households in agriculture typically have less livestock, land and grow fewer crops. They are likely to have lower food stocks and consume more of their own production at home. CSA initiatives will sustainably increase productivity, enhance resilience, and reduce/remove greenhouse gases (GHGs). With the aim of transforming the agricultural sector from subsistence-based to fully commercialized farming by 2020, national policies and strategies have been directed towards mainstreaming climate change adaptation and mitigation in the agriculture sector. However, despite the wide array of climate-smart options available to Rwandan farmers, there is a clear

need for incentivizing CSA scale-out throughout the country since adoption levels of practices with high climate-smartness scores are generally low among small-scale farmers. Mainstreaming CSA requires critical stocktaking of ongoing and promising practices for the future, and of institutional and financial enablers for CSA adoption.

3.3.5 ACTION TRACK 5: Build Vulnerabilities Shocks & Stress

Transforming Rwanda's food systems to become resilient to shocks is fundamental to realizing the vision of the 2030 Agenda in the context of increasing climate-related shocks and the COVID-19 pandemic. Action Track 5 of the Food Systems Summit Dialogues therefore worked to ensure the continued functionality of sustainable food systems amidst natural disasters, economic shocks and pandemics and their recovery to a better-off state in the aftermath of shocks. The three stages of the Rwanda Country Level Food Systems Dialogues aimed to facilitate the widespread engagement of multiple actors from different societies, stakeholders, and sectors in preparation for the Summit. Achieving this will require a three-pronged focus on:

- **Economic Resilience:** Being equitable and inclusive.
- **Social Resilience:** Producing broad-based benefits for all people for them to be able to recover effectively and efficiently from shocks.
- **Environmental Resilience:** Generating positive and regenerative impacts on the natural environment.

The dialogue opened with brief presentations given by invited speakers to help set the scene for participants. Each breakout session identified gaps and opportunities in Rwanda's food system on one of the following topics:

- (1) Regional Food trade
- (2) The National Agriculture Insurance Scheme (NAIS)
- (3) Early Warning Systems (EWS)
- (4) Climate Smart Agriculture (CSA)

The discussions from each group considered policy, innovation, finance, and inclusivity as cross-cutting issues. A summary of Action Track 5 is also presented under Table 5.

i. Regional Food Trade

This discussion centered upon the need for increased awareness of regional compliance standards among stakeholders so that Rwandan produce can become

marketable in the regional trade system. This begins by recognizing the challenges that vulnerable stakeholders face and equipping them with training and access to user-friendly information on standards. Participants recognized that the more parties (producers, regulator, policy makers) are aware of trade standards, the more they will contribute. This creates a strong economic case for involving the private sector in increasing awareness. More broadly, participants highlighted the lack of infrastructure that keeps transport prices high while significant gaps in trade standards between East African countries continue to create challenges for trade. Participants noted that the government should take the lead in harnessing a holistic policy / culture / socio-economic approach. Possible solutions to the problems discussed are organized below according to the four cross-cutting themes.

Policy: Providing trainings to MSMEs on country-specific trade standards to increase awareness and compliance to facilitate adoption of standardized processes. Development of responses to shocks such as COVID-19 that ensure the continuity of farming activities and market linkages to maintain livelihoods. Creation of legal instruments that help farmers access markets. Expand and enhance infrastructure to decrease costs and promote fair commercialization. Harmonize border inspection procedures towards a common system to make trade less bureaucratic. For example, avoiding receiving approval from board of export and import country. Build on EAC trade forum to better address trade disputes in the interests of vulnerable stakeholders.

Innovation: Some of the innovative approaches that may be adopted to address several agricultural issues are: engagement of private sector in buying from smallholder farmers for their support in increasing awareness on trade standards; linking universities to villages for partnerships and knowledge sharing; ensure food safety standards and techniques are well known; creation of easily accessible portals for downloading documentation relevant for food safety and regulations; use of media channels to broadcast regulations and increase awareness to reach large segment of the farming population within a short span of time.

Finance: Being a more critical area both for the nation and the farmers, increasing financial literacy around agriculture seemed to be of paramount importance.

Inclusivity: Ensure that trainings on compliance standards include vulnerable producers working at the beginning of food chain as this will enable them to enter formal markets more easily. Be careful with terminology as terms like “good agricultural practices” are less intimidating than “standards”. Policy that

protects those with disability and ensure that they are included in trainings. Stakeholders with physical and cognitive disabilities must be included in trainings.

ii. **National Agriculture Insurance Scheme (NAIS)**

With NAIS still in its infancy, participants identified several key challenges it faces. First, there is insufficient data collection and M&E taking place to better understand farmers' experiences and address issues. Second, awareness of NAIS among smallholder farmers remains low as does trust for insurance providers further hindering the rollout. Third, lack of data collection and general unreliability of Rwanda's climate, exacerbated by climate change, creates challenges for developing a credible insurance index. Fourth, the cost of insurance remains too high for many farmers with the Government only subsidizing 40% of the cost. Fifth, insurance providers are prevented from reaching all farmers at this stage by the high entry costs due to structural challenges such as infrastructure.

Policy: To help establish NAIS, use a targeted approach where crop insurance will be provided to those farmers who can be expected to be good clients and thus demonstrate the business case. Develop the regulatory framework to create trust in NAIS on the demand and supply side.

Build infrastructure to promote the organization of supply chains for crops insured by NAIS. Rice is the most popular crop because it has the most well-organized supply chain.

Innovation: Develop a customer feedback mechanism to ensure that each season is guided by lessons learned from the last and that the product reflects the farmer's concerns. It would also be a tool for monitoring and evaluation e.g., to see if farmers are taking greater risks. Adoption of latest technologies including satellite imagery and drones to improve data collection and analytics for M&E and developing a credible insurance index.

Finance: Link NAIS with existing social protection programs to increase efficiency and reduce costs. In some parts of India, 80-90% was required to attract interest hence increase of Government subsidy from 40% would be a favourable approach. Increase the scale of NAIS (number of farmers signed up) to reduce entry costs for insurance providers and attract the private sector.

Inclusivity: Launch a media campaign to promote NAIS. Build better awareness through community sensitization, to expand the number of farmers signing up.

iii. Early Warning Systems (EWS)

There were two key challenges identified to early warning systems in Rwanda: harnessing data in the application of modern EWS technologies and access to information on EWS. Participants recognized that data and technology help create efficiencies in storage, transport and markets while recovering from shocks. Moreover, the technologies needed to help farmers take actions and withstand shocks already exist. The second issue is concerned with the effective dissemination of EW information, particularly with vulnerable and isolated communities in an accessible and low-cost manner. Possible solutions to the problems discussed during the breakout are organized below according to the four cross-cutting themes.

Policy: Build the capacity of farmers to incorporate early warning data into their decision making and strengthen their preparedness for shocks and ultimately their resilience. Target EWS investments in those districts most vulnerable to the effects of climate change. Use existing platforms of aggregators, traders, etc. to disseminate EWS information among stakeholders to ensure awareness of this information. Identify and develop partnerships with different organizations, cooperatives, and clusters to ensure that everyone in the supply chain is involved in utilizing EWS.

Innovation: Link EWS to empowerment of communities for community-based preparedness as the community is the fastest responder. Use technology to disseminate EWS information. For example, FAO supported the development of a smartphone application that provides information about the weather, hazards, nutrition, and animal resources to help farmers deal with climate change. Farmer field school members could be provided with phones and taught how to use the app. With 80% mobile phone coverage in Rwanda, short messages could be broadcasted through SMS while radio can also be used to maximize outreach.

Finance: Hitch financial services toward developing EWS. Build national systems for adequate financing for disaster risk management and for food systems actors' preparedness activities so that EWS can translate to well-financed and timely preparedness and response activities.

Inclusivity: Ensure that smallholder farmers – particularly those with no smartphones and limited access to technology - in remote areas have access to EW information. Develop user-friendly and accessible ways of sharing EW information with farmers (e.g., without high-tech tools).

iv. Climate Smart Agriculture (CSA)

Participants agreed that the introduction of modern CSA technologies and CSA policies require a multi-sectoral approach aimed at building coordination mechanisms and creating greater awareness among stakeholders. The importance of promoting tailored CSA recommendations to the real needs of Rwandan farmers was also identified and discussed.

Possible solutions to the problems discussed during the breakout are organized below according to the four cross-cutting themes.

Policy: Benchmark environmental management of agriculture, nutrition sensitive agriculture and technology adoption with global policies. Biodiversity approach mainstreaming (understood as the integration of actions related to conservation and sustainable use of **biodiversity** at every stage of policy, plan or project cycles) to take advantage of local crop varieties. Crop diversification based on native varieties supports more nutritious soils, water use efficiency, strengthens value chain and the role of farmers. Partner with the Rwanda Institute for Conservation Agriculture (RICA).

Innovation: Develop a legal and policy framework to facilitate the promotion of digital solutions for nutrition sensitive agriculture such as apps that measure the nutritional value of crops. Strengthen surveillance systems for effective implementation of CSA.



Table 5 Summary of Action Track 5

 ACTION TRACK 5: BUILD VULNERABILITIES SHOCKS & STRESS Date: 01 April 2021				
Cross cutting themes	Thematic Area 1. Regional food trade	Thematic Area 2. The National Agriculture Insurance Scheme (NAIS)	Thematic Area 3. Early Warning Systems (EWS)	Thematic Area 4. Climate Smart Agriculture (CSA)
Policy	- Provide trainings to MSMEs on country-specific trade standards to awareness and compliance to facilitate adoption of standardized processes. - Develop responses to shocks [COVID-19] that ensure the continuity of farming activities and market linkages to maintain livelihoods. - Creation of legal instruments that help farmers access markets. - Expand & enhance infrastructure to decrease costs and promote fair commercialization. - Harmonize border inspection procedures to make trade less bureaucratic. - Build on EAC trade forum to address trade disputes	- Crop insurance to be provided to farmers who will be good clients. - Develop the regulatory framework to create trust in NAIS on the demand and supply side. - Build infrastructure to promote the organization of supply chains for crops insured by NAIS.	- Build decision making capacity of farmers to prepare for shocks and ultimately their resilience. - Target EWS investments in those districts most vulnerable to the effects of climate change. - Use existing platforms to disseminate EWS information. - Identify and ensure partnerships with stakeholders in the supply chain to utilize EWS	- Benchmark environmental management of agriculture, nutrition sensitive agriculture and technology adoption with global policies.

Innovation	- Engage private sector to buy from smallholder farmers & increase awareness on trade standards. - Link universities to villages to partner for knowledge sharing - Ensure food safety standards and techniques are well known - Create easily accessible portals for downloading documentation relevant for food safety & regulations - Use media channels to broadcast regulations and increase awareness.	- Develop seasonal farmer feedback mechanism to ensure that each season is guided by lessons learned from the last and that the product reflects the farmer's concerns. - It would also be a tool for monitoring and evaluation e.g., to see if farmers are taking greater risks. - Adoption of latest technologies including satellite imagery and drones to improve data collection and analytics for M&E and developing a credible insurance index.	- Link EWS to empower communities for preparedness. - Use technology to disseminate EWS information. Ex: FAO smartphone application on weather, hazards, nutrition, and animal resources - Farmer field school members could be provided with phones.	- Develop a legal and policy framework to facilitate promotion of digital solutions [apps] for NSA to measure nutritional value of crops. - Strengthen surveillance systems for effective implementation of CSA.
Finance	- Increase financial literacy in agriculture	- Link NAIS with social protection programs to increase efficiency and reduce costs. - Government subsidy to be increased from 40%. - Increase the scale of NAIS to reduce entry costs for insurance providers and attract the private sector.	- Hitch financial services toward developing EWS. - Build national financing systems for disaster risk management and for preparedness of food systems actors'	
Inclusivity	- Trainings on compliance standards to include vulnerable producers working at the beginning of food chain and enable them to enter formal markets more easily. - Policy to protect those with disability and ensure their inclusion in trainings.	- Launch a media campaign to promote NAIS. - Build better awareness through community sensitization, to expand the number of farmers signing up.	- Ensure smallholder farmers with limited access to technology in remote areas have access to EW information. - Develop user-friendly ways to access / share EW information with farmers	



3.4 STAGE 2: Extensive Explorations Everywhere

3.4.1 Independent Dialogue for Kigali and Rulindo

This independent dialogue was organized under the title: Transforming Kigali and Rulindo's Food Systems through Robust Inter-regional Linkages and Natural Resources Management. The increasing rates of urbanization in Rwandan cities has resulted in a growing need to meet urban residents' food needs. Rwanda has the second-highest population density in Africa, hence decisions around sustainable land use and natural resources management to ensure food system sustainability are increasingly becoming critical.

The potential for food system sustainability and resilience in Kigali and Rulindo are constrained by several factors. Urban growth and expansion are resulting in the loss of both fertile production areas and biodiversity. Climate stresses and shocks are impacting livelihoods and the food system, with seasonal food shortages being recorded partly due to drought and torrential rains. Food transport between and across regions is being constrained due to heavy rain resulting in floods, landslides, and destruction of food system-related infrastructure such as markets and roads.

As a first step, there is huge potential in mapping the food flows between Kigali and the neighboring districts, including Rulindo, as well as understanding the food system activities. This dialogue explored the possibilities and opportunities for improving the resilience and sustainability of the food systems of Kigali and Rulindo district. Discussions moved beyond the short-term responses to the impacts of the COVID-19 pandemic on Kigali and Rulindo's food systems, to more long-term approaches for ensuring

continued access to nutritious and safe food in the face of climatic shocks and stresses and other disruptions. This dialogue looked at policy interventions that are necessary for promoting healthy diets, food, and nutrition security in Kigali city and Rulindo district. It unpacked ways of improved approaches to link urban, peri-urban and rural food systems to ensure sustainability of these systems.

Ensure Access to Safe and Nutritious Food

Availability and implementation of policies and incentive mechanisms to spur food system sustainability, resilience, and symbiotic food system relations in Kigali city and Rulindo district was discussed. The Food Safety and nutrition policy which is under development was important to consider while enhancing production in Rulindo and transporting to Kigali.

Challenges to mitigate: The district is hilly but the master plan can be used to utilize marshland to make sure that the managed marshland contribute to production and food security. Heavy and torrential rains can be harvested and utilized for agriculture. Irrigation is key in the district so that food can be produced in these marshlands. Postharvest handling is being developed in these centers with appropriate storage equipment. Handling strategies must be put in place to enable safe and speedy transport. The Africa center of excellence for sustainable cold chain that is currently being established can be used for food produced coming from Rulindo to have a more sustainable food system. Research is key before developing policies so that the policies are based on facts obtained from the farmers; yet agriculture policy should emphasize on soil fertility and IPM. National post-harvest strategies should be focused on postharvest of non-staple crops and staple crops. There is a need to increase food production in Rulindo district, conserved and transported to Kigali city.

Research must guide policy development on the needs of the farmers. Policies to address barriers that have affected production levels viz., irrigation, soil fertility, usage of organic fertilizers, integrated pest management, increase storage in the district, access to market, integration of different stakeholders to match production needs and the like. Policies need to be translated into simple language that can be used by local leaders to inform farmers and enable them to understand involvement of farmers for their advantage and the profit of the nation at large. The need to increase investment in water management in Rulindo to manage drought and floods cycles is fundamental. Losses due to lack of linkage to market is high and hence policy needs to address access to market.

Sina Gerard Urwibutso Enterprise Ltd-Nyirangarama is the only private enterprise involved in diverse ways of processing of foods in Rulindo. Additional private partners in food processing should be brought on board to the produce and tackle food and nutrition security issues. In June, there's a surplus of staple foods, resulting in the sales of inexpensive price on food crops, while in September shortage of food occurs. Inclusion of processors, transporters and consumers in food system development will enable them to process food at their peak of quality and make them available even during the lean season. Such approaches will provide them with informed choices that will enable the reduction in the tendency towards less healthy and waste diets. Harmonization of language and standards will benefit to build shared understanding of what's safe and what's nutritious so that stakeholders / actors can work in a coordinated way. Policies need to be understood and interpreted in the context of Rulindo district in a way that responds to the challenges. Policy Actions from specific policies need to respond to challenges specific to Rulindo. Incentives e.g., collection centers for perishable foods, can be an incentive to produce more nutritious foods. Postharvest handling of foods should be developed with centers with cool chain equipment to retain quality and quantity. Handling strategies should be put in place to transport them.

Feasible solutions in responding to the challenge of environmental change, degradation, and food waste in Kigali and Rulindo's food system: Population growth creates pressure in the ecosystem leading to its degradation if not handled from the start. The growth of horticulture using hydroponic system in Kigali reveals that ecosystem degradation can be prevented. It is crucial to immediately embark on investing in food waste recycling to protect the environment and the ecosystem. Activation of dormant policies by ensuring people who are affected are aware, have the right capacity. Existing environment protection policies and tools need to be mainstreamed at all levels. Awareness and training are needed so that all stakeholders have the same language.

Shift to sustainable consumption patterns:

Availability and implementation of policies and incentive mechanisms to spur food system sustainability, resilience, and symbiotic food system relations in Kigali city and Rulindo district was discussed in the light of sustainable consumption patterns. Reviewing indigenous knowledge when 'designing' consumption pattern indicating the combination of the diets was addressed. This was to be considered in policy, education and planning. Farmers need to be supported on income generation and encouraged to practice organic farming to preserve the ecosystems. Local government should create bylaws and enforce and enable the data collection system on production and productivity for monitoring and decision making. This information obtained through researchers should be shared to private sector to support logistics, and for providing skills to the farmers. Ideas of good practice-based evidence, sharing of good practices from Rwanda and other countries could enhance the skill level of famers and value chain actors. University and research centers to learn from field experiences-working with local actors and local government. University should get Master's students to work in the field to get better understanding of the problems and link them to learning. Theoretical knowledge obtained at university is not the same as obtaining knowledge of working in the field/experiences. Examples: use of pesticides - no education at the local farmer level, need to share knowledge to groups or systems & utilization of the FAO Agro-ecology Knowledge Hub.

Another social dynamic is understanding of household demand where Grandparents don't eat to save for the children and men only eat breakfast because they must work and bring home income. Such food systems should be identified and supported. Learning from local farmers

Solutions that are feasible in responding to the challenge of environmental change, degradation and food waste in Kigali and Rulindo's food system: Practicing organic agriculture and production of local foods during season, prevention of food waste due to lack of knowledge about storage, perform risk analysis to predict environmental change craft ways to adapt, frequently updating platform, like a weather forecast or food waste report, food production statistics etc., are some of the solutions that were identified. Management of food surplus, fruitful and trusted redistribution system should be envisaged. From the environment perspective, emphasis should be on irrigation system when there is lack of enough rain and soil drainage (in case of erosion). Food system needs to pay attention to small scale farmers and small-scale retailers. Local farmers and other partners don't have full of information (GAPs, use of fertilizers, way of avoiding food loss and waste) about foods systems. For instance, farmers ignorantly use large quantity

of fertilizers in small land for getting high production that will affect human body. This calls for training and information at all levels.

Boost Nature Positive Production

Mechanisms that are available or can be implemented to spur food system sustainability, resilience, and symbiotic food system relations in Kigali city and Rulindo district: Food production is a key element of the food system that indicates the relationship between rural and urban areas. It establishes mechanisms in place for mass transportation of food. To encourage food production and not destroy natural resources small scale irrigation in Rulindo for vegetable production and water saving strategies during torrential rains can be practiced. There is need for safe food that is produced with the approved pesticides and fertilizers that should also be safely harvested and transported to the markets.

The following are Rwanda's - key policies on biodiversity for food and agriculture namely that indicates symbiotic food system relations:

- Rwanda vision 2050: Green Growth and Climate Resilience economy
- Targets transforming Rwanda from a middle-income into a high-income status country
- National Strategy for Transformation (NST1) (2017-2024);
- Social, economic and good governance transformation
- The Updated National Agricultural policy (2018)
- sustainable agricultural (productive, green and market led)
- Rwanda Biodiversity Policy (2011) & The National Biodiversity Strategy and Action plan (NBSAP II) 2016;
- conserve Rwanda's biodiversity and ecosystem services
- FOOD safety policy
- Agroforestry policy and forestry policy (2018)



Gaps between the rural-urban linkages were identified. Post-harvest facilities that respond to the specific need of the districts are essential. Lack of these facilities increase post-harvest waste and the associated negative impacts. Lack of these linkages leads to importation of food yet it could be acquired locally from neighboring districts. It should be well noted that policy is clear but the problem is the implementation plans were advocacy for the implementers and policy makers to come back to evaluate the implementation process is required.

While it is well noted that Food is important in our every daily life, but the way it is packed and handled along the value chain is also vital. Hence farmers from Rulindo should be encouraged to package food in proper and recycled packages to prevent contamination. This would also lead to the prevention of postharvest losses of food and prevent the soil contamination and moisture absorption. Kigali is using portable water from Rulindo: there is need to organize farmers on how to practically till the land and manage the resources such as water. There is strong need for capacity building for farmers. Mobilizing of additional resources from the central government for policy implementation and responding to the urbanization trends needs to be addressed urgently. It was reiterated that resources should be pushed towards the implementation process: putting together integrated teams. There is a food waste policy but lack of a food management policy. Farmers should be trained on how to use the pesticide and fertilizers without compromising the biodiversity; even bees play a big role in pollinations 75% crops pollinated by bees that cautiously looking out on issues of biodiversity. Agro-forestry should be promoted as a way of farming on hillsides to manage soil erosion. There is an initiative to do this using avocado trees instead of using nonfood trees like *Eucalyptus*. There is a need to strengthen the farmers through Farmers field schools and simultaneously enhance partnerships between different farmers: for example, between piggery farmers and maize producers. Capacity building, skills development, knowledge sharing among farmers (in the local language on how to do agri-business, preservation of agro ecology, sustainable ways of using the fertilisers, pesticides (user manuals in local languages, demonstrations in local languages) etc.,

The problem of aflatoxins and problem of agriculture inputs where the agro-dealers don't have skills in agriculture - some do not know the appropriate pesticide and adequate pest and disease - while banks fear to invest in agriculture due to climate calamities in production and price fluctuations.

Access to finance is key to promote farms productivity. Farmers should have better access finance, constant follow up and guidance to farmers on using finance effectively can enhance productivity. Exploring small

saving and credit societies that can boost finance to small scale farmers. The other drawback is poor packaging and lack of packing houses. Packing house may contribute to decreasing post-harvest losses by using proper treatments. For example, if you go the market, you will find that some vegetables such as tomatoes are being sold with pesticides on them; they need to be harvested at breaker stage as they are climacteric fruits. This will prevent the use of pesticides and the loss of tomatoes. Here, the influence of the consumer in the purchasing decision influence the farmers to sell ripe tomatoes that have low postharvest shelf life and high loss. There is a need for an updated national plan for registration and regulations of biopesticides / bio-agents (national regulations updated).

Advance Equitable Livelihoods

Availability and implementation of policies and incentive mechanisms to spur food system sustainability, resilience, and symbiotic food system relations in Kigali city and Rulindo district was discussed to advance equitable livelihood.

Policies that promote food system, climate resilience, water and energy efficiency, as well as biodiversity conservation were identified to be urgently required. Collaborative food governance approach that catalyzes action between different stakeholders to promote correct policies on the sectors are required. Policies for incentive for farmers to get inputs such as seeds and fertilizers are available but this need to be strengthened. Linkages to markets and at both cities' food system should be strengthened. Awareness campaign to beneficiaries on policies and to take advantage of incentives should be made known. Workshops on how to go ways to raise awareness should also be encouraged. Since Rwanda uses more of agrochemical and pesticides, capacity building of stakeholders to improve the use of the chemicals in a sustainable way and capacity building of food system actors e.g farmers agroecology needs to be promoted to improve sustainability of land resources. We also need a policy that supports good food purchasing practices, access to farmland for farmers and producers, and quality jobs in the food industry.

Feasible solutions in responding to the challenge of environmental change, degradation and food waste in Kigali and Rulindo's food system: It is important that a policy that preserves agricultural land to reduce environmental impact so that our farmers have the land necessary for expansion and to continue food production. Due to climate change, there are a lot of post-harvest losses. Establishing mechanisms to inform them and preparing them for climate change adaptation. Identify appropriate sustainable land management interventions in the current continuing soil degradation threat. A continued land degradation was experienced so that there is a need to find solutions

on how to prevent land degradation and educating the farmers which is key to this activity. There is low investment in food waste management. Public-private partnerships in food waste management should be sought. Strong partnerships and coordination among key actors in urban agriculture, construction and urban food systems is envisaged. Support for businesses (incentives) which already has incorporated some food waste practices can encourage them to be productive and sustain the business activity. Encourage the use of renewable and sustainable materials and products is a key. There is a need to develop a comprehensive approach to assess the impact of soil degradation based on production and to identify natural and human-induced causes of degradation.

Build Resilience to Vulnerabilities, shocks, and stresses

Policies and incentive mechanisms: Emphasize the quality of inputs (seeds used e.g. tubers, cassava and sweet potatoes) not as productive as they should be. One incentive would be provision of improved seeds. Fertilizer subsidies should be provided for priority crops: Maize, wheat, rice, Irish potatoes, cassava, climbing beans. Small scale irrigation technology should be promoted due to climate change vulnerability and dry spells. Inclusive markets and off-farm opportunities can improve.

Solutions that are feasible in responding to the challenge of environmental change, degradation and food waste in Kigali and Rulindo's food system: Appropriate Transportation means for crops to reach their market while still fresh is essential because some are perishable and susceptible to spoilage. Putting in place small processing units to utilize fresh produce. Thus, preserving the nutritional quality of the processed produce. Traditional sun, Solar or Mechanical Driers may be put in place to decrease moisture in cereal crops like maize and reduce humidity that challenge aflatoxins. Government should also promote diversity of agricultural products which is crucial to have diversity so that farmers are not dependent one crop, but a diverse crop. If some crops are vulnerable to climate changes others which are resilient can survive. Marshland reclamation for increased agricultural production should be sought. Research to support policy formulations and decision making should be invigorated. Storage of crops, for example from Season C and storage without using pesticides should be addressed to prevent food loss. Purdue sacks and multiple sacks for packaging to encourage hermetic storage without using pesticide, minimizes use of chemicals use. Insects cannot survive in such environment. New innovations in preservation and utilization of fruits and vegetables while fresh should be researched. This does not require energy nor storage facilities of crops. Organic farming contributes to reduce degradation of soils and environment. Farmer capacity building oriented towards achievement of all

the above suggested solutions will prevent food loss and waste.

3.4.2 In Country Dialogue with Women

Innovative solutions for women to combine family life and practice agriculture and access to market

ECD to provide services and strategies with childcare practice while practicing agriculture. Creche services to be provided by tea processing firms so that women can leave their children while they pluck tea leaves. Time saving household devices to be encouraged like using gas as fuel, pressure cookers and use of electrical appliances like blenders / grinders etc., where electricity is available. Information and access about financial products/services. Agri-women development trust to equip women with skills, competencies to access markets with high quality products and command high prices. Increase women skills in adding value to agriculture produce (e.g. drying, juice processing, fermentation etc.,). Increase knowledge and skills to balance family and agriculture through peer learning sessions. Give access to quality assurance / cooling solutions using ZECC [Zero Energy Cool Chamber] or pot in pot to preserve horticulture crops to extend shelf life and maintain quality. Thus, sales of products or household consumption may enhance household income / nutrition when consumed. Give access to selling platforms (link to buyers). Access to information through ICT. Policy advocacy. Monitoring tools to check progress. Access to markets while considering consumer preferences. Role of men in advising and supporting women to access women (moral, financial,...). Contract farming to secure market. Changing the mindsets (the woman can be free to participate freely in markets regionally and internationally).

Role and contribution of men in fighting malnutrition at household level

Household dynamics to be aware of:

- Power relations vary at household level, with men being the more powerful, taking decisions on types of crops to be grown at household level
- Mindset change needed among men can be achieved by adjusting education models so men also realize that they're also disadvantaged by gender inequity
- Role of men affected by culture and confidence. If a man is confident, he is seen as more 'intellectual'
- Women with limited education feel 'disempowered' to take decision, defer to men who are more outspoken to make decision (even if they have the same education level)

Role of men and boys in contributing to the fight of malnutrition of children:

- Learning as a household (both men and women) together on how to prepare nutritious meal. Men have a role in education around nutrition for the whole household
- Men are breadwinners, especially contribution for consumptions that is beyond household production. If men take concern in nutrition, it's easier for them to give money for food to supplement household production.
- Men need awareness of dietary needs of older people and infants so they can provide in accordance with dietary needs.
- Need to have joint discussions and decisions on nutrition for the family, what's needed and how each member may contribute to ensure better diet.

Mainstreaming gender across agriculture value chains

- Collect data at each stage in specific value chains. Women more represented at bottom of value chain, but as you move along, women are increasingly left out in areas including marketing, transport, agribusiness.
- Role modeling in each value chain: Minority of women in value chain need to speak out and be visible so that even those other women who fear can rise because they see other people do it.
- Affirmative action for some value chains: Building capacity while lowering barriers to enter. Some value chain policies at lower level need to be adjusted e.g., requirements too harsh for women to enter
- Affirmative action needs to give access to finance and advisory services to sustain finance
- Transport is male dominated- how can women participate without access to finance

Mechanisms that can be put in place to increase participation of men and boys in nutrition behavior change

- Women to take a serious role in deciding what crops to be grown in the different value chains (across the entire sector), that way, value chains can drive more nutritious foods into communities
- Fostering and promotion of male role models at *umudugudu* levels who participate in food

selection, preparation and feeding of children under 2 years. They become exemplary at village level.

- Encouraging peer-support at household/ village level where men have been selected to participate in food selection, preparation and feeding of children under 2 years.
- Campaigns targeted towards men & boys engagement in nutrition behavior change is critical
- Men to be encouraged to take lead by buying nutritious foods, supporting preparation, participating in food discussions and being involved in decisions on nutrition.

Supporting Women in Climate Smart agriculture focusing on small female farmers to increase production and value while addressing food loss and waste

A. Key challenges faced and the adverse impact of climate change on women

- Lack of access to information, especially weather and Climate service information
- There are still a small number of women involved in decision-making either about the response to climate change or other extension services. Even where there are women involved, they do not have a platform where they can share this information as men do.
- Lack of gender-responsive approach in Climate Smart Agriculture projects: Some projects fail to consider gender-specific differences in the capacity to adapt to and mitigate climate change, which do projects to be less of benefits to women.
- Lack of adaptive capacity: Generally, women in agriculture farm for family subsistence, not for business. Few women are agriculture entrepreneurs or involved in farm investments, limiting their financial accessibility and impedes their adaptive capacity

B. Support to women can be supported to be more productive in Agriculture Sector

- Training targeting female smallholder farmers: Having said that lack of information is one of the key challenges facing women in relation to climate change, it would be ideal to have the training to adapt to and mitigate climate change that recognizes gender-specific differences.
- Improve campaign on Complementarity between men and women: In a family house, core activities should be for women, even men can help, and in that case, husband and wife can be alternating

in attending farmers meetings that occur in the evening.

- Women capacity building in terms of pieces of training that can help them to have or improve their agribusiness skills

C. Beyond subsistence agriculture: What are the measures/ Strategies that can be applied to ensure women access to markets/ strengthening the market linkage

- Put in place women information platforms that can enable women to have access to markets information and discuss market-related information
- Increase entrepreneurial skills among women: Women should get training that would help them to overcome fears due to culture or society norms and make them confident in the agriculture business
- Gender-specific differences should be considered in all components related to market accessibility since, in case of any impediments, women are more disadvantaged than men
- Women should be involved in the whole food market value chain as to have women empowering women.

D. Role of Private Sector/financial Institutions to support the start-up or business that benefit women in the agriculture sector

- More Schemes targeting women are encouraged: Private sectors or financial institutions design schemes or services aiming to support farmers in general, which sometimes undermine gender differences. Thus, strategy and services acknowledging gender are encouraged to enable women to benefits as well as men;
- The private sector should increase awareness of different programs aiming to support women. Sometimes, private sector or financial institutions have programs to empower women, but the end-users (women) are not even aware that such scheme exists (as we have seen on point A, access to information is a challenge to women);
- When it comes to developing and implementing projects aiming to support women in agriculture or Climate Smart Agriculture practices, the private sector should consider that men and women are not starting at the same point. There should be a consensus that the design and implementation must consider gender-specific differences in the capacity to uptake certain services.

3.4.3. In Country Dialogue with Youth

The following were the recommendations from Youth and Healthy Food Systems Dialogue

- To achieve the PSTA4 and SDGs goal in sustainable agriculture and food systems, institutions that work closely with the food system should increase the participation of youth in their activities. This implies strengthening the collaboration with youth organizations and enterprises to implement some activities through the Private Public Partnership model.
- Youth recommended that the ministry of agriculture and animal resources should focus on building the capacity of youth already doing agriculture; design special programs for capacity building in modern agriculture and agribusiness for them to be role models to aspiring young farmers and the community.
- The country is putting in place institutions for food safety regulations like FDA, RICA and RBS. There is a lack of information on food safety and standards among food system and value chain actors. It is recommended that there should be more campaigns on standards and food safety before putting much effort in requesting value chain actors to implement regulations they are not much informed about.
- Youth should play a great role in offering professional agribusiness training and advisory services to value chain actors. It was observed that youth are skilled and can be an effective tool to share accurate information and provide effective trainings to food system operators.
- Market availability and accessibility for agriculture produce remains a big challenge to young farmers extended to all farmers; it was recommended that given that this issue keep discouraging youth to join agriculture, there is a need to advocate for the enhancement of processing industries and the capacity building on post harvesting handling of agriculture produce in each value chain.
- Access to finance was reiterated as one of the challenges of youth engaged in agriculture.
- Access to certified infrastructure requires investment that some young entrepreneurs cannot afford, examples: models like NAEB pack house, but existing youth association's shops should be scaled to enable young people produce healthy and safe foods for the markets.

3.5. STAGE 3: Consolidation, intention and commitments- High Level Food Systems National Dialogue

During the High-level Food System National Dialogue, the United Nations Resident Coordinator (UNRC), Mr. Fodé Ndiaye, remarked that this was a “people’s summit” because everyone has a stake in food systems as well as a “solutions summit” so that food systems can be part of the solution, not the problem. Getting back to the right direction of achieving the SDGs and building back better from COVID-19, requires a global accountability to monitor countries’ commitments. In the transformation of Rwanda’s food system, there is a need to: Strengthen cross-functional coordination and accountability; Work towards sustainable City Region Food Systems; Build the capacities of organizations and institutions; Adopt an inclusive, greener, and resilient approach; Leverage the African Continental Free Trade Area (AfCFTA); Design pro-nutrition legislation; and Ensure that the desired systems transformations are more diverse and inclusive by putting women, youth, persons with disability and small holders’ farmers at the center.

The convenor remarked that despite continued challenges, Rwanda boasts several success stories such as the crop and livestock intensification programs; pro-nutrition programs including school feeding, one cow per poor family, home gardens with fruits and vegetables; the construction of Early Child Development Centers; and women and youth empowerment policies such as equal access to land and the expansion of Technical and Vocational Education and Training (TVET).

Panel 1: Ensuring food security and nutrition for all, decent livelihoods and to promote rural development, and environmental safeguard while building resilient food systems to vulnerabilities, shocks, and stresses

This panel highlighted the importance of sustainable farming and acknowledged the existence of gaps in the Rwanda context. Panelists identified key areas of action while noting Rwanda’s existing efforts to overcome these gaps which are showing promise of having a transformative impact with time. Panelists agreed that to achieve decent livelihoods and to promote rural development, productive employment and decent jobs must be provided, especially for persons with disabilities, in off-farm industries such as in the processing, marketing and transportation of foods (fresh/processed). To this end, stakeholders must work toward strategies for the promotion of rural agro-processing firms (private sector initiated); access to affordable finances; the development of infrastructure, especially of feeder roads to facilitate and reduce the cost of transportation of produce from

farm/processing facilities; and making data for high value foods available.

Increasing productivity is essential for nutrition and food security. Panelists therefore highlighted the need for investment in high yielding high yielding crops. Though postharvest facilities exists, it was agreed that they need to be enhanced, especially in processing and marketing. Panelists advocated for the efficient use of irrigation to further increase productivity. Market governance must be improved to remove hidden costs, establish stakeholder networks and promote public private partnerships for innovation. Further, practical interventions are needed to ensure in the effective and efficient collection and usage of data.

Panelists also agreed on the centrality of environmental sustainability while building resilient food systems to vulnerabilities, shocks, and stresses. The National Land Use and Development Master Plan 2020-2050 was highlighted as it outlines Rwanda’s strategy to reduce greenhouse gas emissions (GHGs) by maximizing soil carbon sequestration through better land management practices while maintaining productivity. This involves soil storage capacity, enhanced nutrition, restoring ecological health, and terracing for the prevention of soil degradation. Social protection programs should be expanded with a focus on graduation from poverty and increasing resilience. Home grown solutions such as the Girinka Program/one cow per poor family, and the Ubudehe program where people are given off farm employment in agro-processing firms, food transportation and access to market information.

Panel 2: Crosscutting pillars toward Rwanda’s sustainable food systems: Empowering youth and women and access to financing.

Youth:

Agriculture has all the potential to engage youth, the future citizens of the world. Youths are the next generation of farmers, producers, sellers and agribusiness men and women. Although Rwanda has a young population, with a median age of 19 years and almost 70% are below the age of 30 while the average age of farmers is 55 years. Hence, policymakers realized the importance of involving young people in agriculture not only to combat unemployment but also to utilize their potential in the national economy by redressing this demographic imbalance.

Panelists highlighted that it is imperative that an investment is done in youth and that young people invest in agriculture. This involves foster a shift in mindset of young people towards agriculture as a career choice which can be highly profitable. More incentives are therefore required to attract youth including customized access to finance, providing access to land, skills development/capacity building and supporting innovative solutions. This change

in mindset should begin with education, where the country is already increasingly teaching young people about agriculture and nutrition at schools. Leveraging existing youth platforms such as the youth agri-business forum and network of university graduates are additional efforts taken by the country which can be expanded on.

Three success stories highlighted by the panel are elaborated here. Since 2012, the YouthConnekt program has successfully supported young entrepreneurs including agri-business startups. So far, 284 competitive and innovative businesses – 70% of which are in the agriculture sector – have been awarded financial support benefitting more than 8,022 young people. The program was developed by the Ministry of Youth and Culture in partnership with the United Nations Development Programme (UNDP). Another livelihood support program is the Support

Vulnerable Youth program. In partnership with local government, the program mainly targets teen mothers and youth with disabilities with skills development and employment. So far 1,514 young people, of which over 86% are female, have been supported.

The innovative “Youth Ecobrigade” engages youth cooperatives to work for environmental protection, thereby creating green job opportunities. The work includes the construction of radical and progressive terraces, forestation, and training for financial literacy. Between September 2019 and June 2021; 9,428 young people have been employed by the program. The program was initiated by the Ministry of Youth and Culture in collaboration with the Ministry of Environment, the Local Administrative Entities Development Agency (LODA), UNDP and the Korea International Cooperation Agency (KOICA).



Women:

While the panel acknowledged Rwanda's commitment to gender equality and women's empowerment in the agriculture sector, it remarked that gender disparities persist in the food system. Even though women constitute most farmers (65.7%), women have significantly lower access to extension services, employment opportunities, finance and markets. Women remain overrepresented in subsistence agriculture, receive low prices for their products due to lack of market information and capacity to participate in agri-business and are employed in low paid positions in secondary agriculture (Revised National Gender Policy 2021). Further, women's representation

in extension services is still very low, with only 28% in farmers' field schools, 20% of Farmer Promoters and just 18% of Sector level Agronomists (Revised National Gender Policy 2021).

Panelists highlighted the need for gender sensitive support women and girls aiming to build their capacities in terms of agriculture practices and business skills to ensure their participation in more productive agricultural value chains (agro-processing, post-harvest process, irrigation among others) through cooperatives and agri-businesses will change considerably their production. For example, policies must account for the fact that access and use of improved seeds and inorganic fertilizers is generally limited for both men

and women, but the situation is more pronounced for female farmers. Only 8% of women use improved seeds and inorganic fertilizers compared to 18% of men (Gender and Youth Mainstreaming Strategy for Agriculture/MINAGRI, 2019). Further, women make up only 25% of farmers involved in coffee and tea production meaning that they are left out of the cash crop market resulting in lower earnings. It is imperative that women and girls receive targeted support for skills development (TVET, STEM programs), have access to decent and productive jobs and receive support to create businesses to achieve inclusive growth.

Panelists noted that improved access to land has not resulted in the expected improvement in access to finance for women and that more should be done. Although 92% of women were financially included, up from 87% in 2016, compared with 93% of men, men are more financially included than women in formal banking compared to the informal sector (FinScope Rwanda 2020). The limited access to finance hinders women's ability to be economically empowered and their advancement in modern agriculture and agriculture value chains. In response, financial services tailored to the needs of women and young girls will remove barriers to accessing finance and strengthen women's position in agriculture. In addition, expanding seed capital facilities and entrepreneurship coaching will ensure sustainable growth of new SMEs, especially those owned by women and girls in the agriculture sector (e.g., agricultural guarantee fund, rural investment facility, post-harvest grant and PRICE).

The Woman's Guarantee Fund (WGF) managed by the Business Development Fund (BDF), facilitates women entrepreneurs and SMEs without collateral to obtain loans in commercial banks and micro-finance institutions at affordable terms and conditions. WGF provides up to 75% of credit guarantee and a grant of 15 % of the total loan disbursed. As of December 2020, a total of 14,021 of women's projects have been supported by BDF with total value of RWF 12,565,836,344 (BDF Administrative data, 2020). This is in addition to the widespread success of Savings and Credit Cooperatives (SACCOs) introduced by the Government in 2011. These have contributed to financial inclusion for people in rural areas, women included.

Panelists noted that women's access to markets can be expanded with the support of accessible modern technology as well as increased representation throughout the agriculture value chain. Programs such as Fifty Million African Women Speak Project launched as a women platform to strengthen and support women and girls to explore and exchange on existing economic opportunities available especially from cross borders to ensure the exchange of information and opportunities across borders should be supported and disseminated widely for the purpose of many. In the same context, there is a need to establish specific mechanisms aiming to empower women to benefit from regional and continental trade agreements such as the EAC, COMESA and the African Continental Free Trade Area Agreement.

The panel observed that women are particularly at risk of the effects of climate change as well as pandemic such as COVID-19. Although there is an increasing number of female headed smallholder farmer households, they are more vulnerable to shocks because women generally have less assets or savings to call upon in time of need. In part for this same reason, the panelists emphasized that there is a need to recognize the impact of COVID-19 on women and our response must target women. There is therefore a need for target programs addressing women's vulnerability to shocks. A good example is the Gender Climate Change and Agriculture Support Programme which is currently being implemented in two Ngoma and Nyaruguru districts. It targets rural women and in particular smallholder women farmers to enhance their resilience to better cope with the potential adverse impacts of climate change.

The panel also calls for the active involvement of men to support women in the value chain as well as in the household. Negative cultural norms and patriarchal attitudes which still exist and hamper women's full involvement in agriculture sector should be dealt with change of attitudes and mindset. This can be done through behavior change communication among community members, decision makers and service providers on gender equality. Campaigns to engage men to be supportive to women in agriculture value chains but also in domestic work to alleviate a bid burden of unpaid care works to women in the households and which hamper them to do other income generating activities should be continued. It is equally important to instilling gender equality principles into young children and youth, starting from ECD's.



CHAPTER 4

RWANDA'S SUCCESS STORIES IN FOOD SYSTEMS

4.1 Success Stories in Rwanda

Rwanda has several success stories to its credit and each one is unique. These success stories orbit around the use of agricultural innovation to address four key challenges: climate change; sustainable natural resource management; food insecurity, hunger, and malnutrition; and job creation, with a focus on youth and women engagement. These success stories have brought in either new innovative approaches / processes and or existing ideas into specific context to counter act the challenge of shocks, climate change, natural resource management, food insecurity, malnutrition, and the like. The following paragraphs are records of the success stories that have been jointly handled in conjunction with various Ministries leading to food security, enhanced nutrition and livelihood of the Rwandans that has transformed the nation harmoniously.

4.2 Ensuring Access to Safe and Nutritious Food For All And Shifting To Sustainable Consumption Patterns (Availability, Accessibility, Affordability & Food Safety) and Creating Demand For Healthy Diets:

Girinka program: One of home-grown solutions in Rwanda was initiated by His Excellency Paul KAGAME, President of the Republic of Rwanda, in 2006, has been a key component of poverty reduction strategy through dairy cattle farming for poor rural households. The main objectives of Girinka Program was to reduce poverty through dairy cattle farming; improving livelihoods through increased milk consumption and income generation; improving agricultural productivity using manure to improve soil quality and efficiency of other fertilizers and reducing erosion through the planting of grasses.

Land use consolidation under CIP: It consists of a bundle of services from government including proximate extension service and input subsidies. Tools include decentralization policy, land registration, infrastructure development. Food security improved from 46% in 2007 to 81% in 2018.

Job creation: According to Annual Labour Force Survey of 2020, there are 39.1% Rwandans employed in paid agriculture jobs (non-subsistence) (NISR, 2021). Labour Force Survey Annual Report 2019 indicates that the National Strategy for Transformation (NST1) included job creation as one of the key components of the economic pillar in which it stipulates creation of decent 1.500.000 off farm jobs by 2024 that is hinged on SDG 8 (NISR, 2020). It further indicates that off farm job creation would be 214,000 jobs annually and it increased by 6.4% between 2018 – 2019.

Nutrition Sensitive Agriculture: To ensure agriculture contributes to enhanced dietary diversity and quality at national and household levels. Key focus includes upscaling kitchen gardens, increasing vegetable, three fruit trees per household programme, small livestock promotion and boosts and supplements household-based nutrition.

Government of Rwanda/WFP home-grown school feeding: In July 2020, the government committed to scaling up school feeding from 600,000 to more than 3.3 million pre-, primary and secondary students across Rwanda. WFP, which supports school feeding in some of the most vulnerable areas, is working to gradually hand over school feeding responsibility to the Government after 2023. According to a 2017 study, every \$1 invested brings an economic return of \$4.80 from improved health, education and productivity. Scale up will inject US\$ 37 million into the economy.

The above efforts contributed to malnutrition eradication and has declined significantly from 51.1% in 2005 to 33% in 2019/20.



4.3 Equitable livelihoods, reduce vulnerabilities and shocks

Social Protection programs: Social protection is commonly understood as “all public and private initiatives that provide income or consumption transfers to the poor, protect the vulnerable against livelihood risks and enhance the social status and rights of the marginalized; with the overall objective of reducing the economic and social vulnerability of poor, vulnerable groups. All public and private income transfers schemes, Social Care Services, livelihood support and insurance schemes that, together, ensure that all extremely poor and vulnerable people have income security, a dignified standard of living and are protected against life cycle and livelihood risks with a view to achieving sustainable graduation and self-reliance. The 2016/17 Integrated Household Living Conditions Survey (EICV5) showed that poverty

reduced from 39.1% in 2013/14 to 38.2% in 2016/17 whereas extreme poverty dropped from 16.3% in 2013/14 to 16.1% in 2016/17. The Gini-coefficient declined from 0.448 in 2013/14 to 0.429 in 2016/17, confirming a significant reduction in inequality.

- **VUP Direct support:** Introduced in 2008 and operating in 416 sectors across the country. Monthly cash support to vulnerable households. From 6850 Households in 2008 to 119,796 HHs in 2019 supported represented by 86,632 and 33,164 women and men headed households respectively. Average payment stand at 132,867 Frw per Household (HH).
- **VUP Public works:** The CPW scheme is primarily intended to provide consumption smoothing employment and promote graduation from extreme poverty among labour-endowed households. 328 sectors are implementing classic

public works across the country. The Expanded PW (ePW) scheme is primarily intended to provide support to extremely poor households with caring responsibilities. 300 sectors are so far implementing expanded public works. Types of projects implemented in this scheme are: flexible road maintenance, greening and beautification and Home Base-ECD; ePWpw Introduced in 2008 with 18,304 beneficiaries and 38 projects. Currently, 158,046 HHs have benefited from ePW projects (74,033 female headed HHs and 84,013 male headed HHs). Epw introduced in 2016 with 2756 beneficiaries working in 300 projects. As of now, 58,533 households have benefited from ePW (43,669 female headed HHs and 14,864 male headed HHs).

- **Nutrition Sensitive Direct Support (NSDS):** Currently, 124,906 NSDS beneficiaries (Category 1 ubudehe: 33,774 representing 27% and Category 2 Ubudehe: 91,132 representing 73% were reached as of quarter three 2020-2021 including 120,940 from 17 Districts (under World Bank fund) and 3,966 in Kirehe District (under FCDO fund). Based on the targeted group, 88,674 (71%) are children under two years of age, whereas 36,232 (29%) are pregnant women so far supported through NSDS in 18 covered Districts.

National Agriculture Insurance Scheme (NAIS): NAIS is a partnership between the government of Rwanda and some of the country's private insurance providers which promotes the adoption of crop insurance by smallholder farmers to mitigate against the effects of climate change. The government pays 40 percent of the insurance costs and the cooperatives cover the remainder. Up to 85% of costs accrued to inputs and labor are reimbursed, making the farmers more confident to expand productivity. So far, over 160,000 farmers growing rice, maize, pepper, French beans, Irish Potatoes and others on 29,300 hectares have benefitted from subsidized insurance. The amount of insured land increased from 357 hectares to 3,333 hectares between 2019 and 2020.

Joint Programme for Rural Women's Economic Empowerment (JP RWEE) (FAO/IFAD/WFP/UN WOMEN): The JP RWEE capitalizes on each participating UN Agency's comparative advantage with the overarching goal to secure rural women's livelihoods and rights through four interrelated outcomes: i) Improved food and nutrition security; ii) Increased incomes to sustain livelihoods; iii) Enhanced leadership; and iv) a more gender-responsive policy environment. Targeted women beneficiaries receive a package of sequenced interventions which includes the Gender Action Learning System (GALS), a methodology aimed at balancing intra-household gender dynamics and empower both women and men. In Rwanda 18,275 direct beneficiaries (including

vulnerable rural women from groups 1 and 2) have been targeted since 2013.

Just in 2020, and despite the COVID-19 pandemic, 12 cooperatives with 1,181 members (927 are women and 254 men) generated a total income of US\$ 62,191.

4.4 Environmental resilience

Landscape Restoration Program (Gishwati project (LAFREC); Amayaga Project, LDCF II Projects): Forest landscape restoration (FLR) is the long-term process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest landscapes. It is about "forests" because it involves increasing the number and/or health of trees in an area. It is about "landscapes" because it involves entire watersheds, jurisdictions, or even countries in which many land uses interact. It is about "restoration" because it involves bringing back the biological productivity of an area to achieve any number of benefits for people and the planet. It is long-term because it requires a multiyear vision of the ecological functions and benefits to human wellbeing that restoration will produce although tangible deliverables such as jobs, income and carbon sequestration begin to flow right away.

LAFREC The Landscape Approach to Forest Restoration and Conservation (LAFREC) project: This is a five-year project under implementation by Rwanda Environment Management Authority (REMA), with the support of the Global Environment Facility (GEF) through the World Bank. The project has the mandate to rehabilitate the Gishwati- Mukura landscape by using a landscape approach to bring the forest ecosystems into better management and develop multiple benefits. LAFREC project goals will be achieved through the conservation and sustainable use of biodiversity, increased forest cover, climate change adaptation efforts together with combating land degradation and provision of livelihood alternatives to the impacted communities. Restoring the previously degraded Gishwati- Mukura landscape aims to enhance its both productive and environmental values. It is also part of Rwanda's efforts to fully transform and operationalize Gishwati Mukura as a National Park officially established in February, 2016. LAFREC project works concurrently in the three major elements of the landscape that are: Rehabilitating forests and biodiversity within the Gishwati and Mukura Forest Reserves; Enhancing sustainable land management in the agricultural lands between them and introducing silvo-pastoral approaches in the rangelands of the central former Gishwati Reserve. The NDF project, which was integrated as part of the LAFREC Project has three components namely: improving woodlot management, improving tree seed quality, and providing technical assistance for more efficient charcoal production and biomass processing.

LAFREC project has been running from January 2015 and is implemented in four districts of the Western Province namely Rutsiro, Ngororero, Nyabihu and Rubavu.

Commitment to Bonn Challenge: In 2011, the Government of Rwanda pledged to bring 2 million hectares of deforested and degraded land into restoration by 2030. Compared to Rwanda's total geographic area. This goal represents the highest proportion committed to the Bonn Challenge to date. Rwanda lost over 65% of its forests between 1956 and 1996, due to a long period of civil war. By 2004, forest cover was 19.6%; as Rwanda now has about 28.8% forest cover, forests have grown by about 1% per year for more than a decade. Currently, about 37% of Rwanda's forests consist of humid natural forests and savannahs. In total, Rwanda has 1,526,379 hectares of restoration opportunities. Due to population density agroforestry comparatively offers the greatest opportunity, with approximately 30% suitability nationwide, on both flat and sloping lands.

SEBEYA Project : In 2020, the Government of Rwanda through the Rwanda Water Resources Board in collaboration with International Union for Conservation of Nature (IUCN) and Netherlands Development Organization (SNV) are implementing the Embedding Integrated Water Resources Management project which is restoring the landscape and promoting scale able sustainable resource management through participatory community-based (village and farmer level) approaches in the Sebeya catchment. The project is among other activities, focusing on developing innovative financing mechanisms and value chains for improved livelihoods through ecological and economic

benefits and implement knowledge management systems for landscape restoration and integrated water resources management.

Amayaga Project: Rwanda in October 2020 launched a six-year landscape restoration project that will restore the natural forests and increase the erosion control and protection of marshlands and buffer zones to foster agriculture productivity in the Amayaga region in Southern Province. The Green Amayaga Project, whose total investment stands at 32.7 million U.S. dollars, is being implemented by the Rwanda Environment Management Authority in partnership with the Rwanda Forestry Authority and the districts of Kamonyi, Ruhango, Nyanza and Gisagara. The project, supported by the Global Environment Facility and the United Nations Development Programme, will advance the restoration of the degraded forests in the area, the landscape of which covers more than 550 hectares, or 0.14 percent of Rwanda's total national natural forests, 10 percent of the planted forest and many patches of remnant forest.

Wetland reclamation Program: The Government has started an ambitious plan of removing illegal activities and illegal settlers in wetlands at the same time mobilizing resources for Wetland restoration. The Government of Rwanda initiated a Wetland Master Plan for the City of Kigali as well to govern the sustainable management and use of wetlands. Rwanda Urban Development Project (RUDP II) there is a component of Wetland rehabilitation in the City of Kigali.

CHAPTER 5

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

5.1 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

5.2 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.

5.3 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

5.4 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.

5.5. 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.

5.6 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 National coordination mechanism”** to harness pre-summit momentum and the evidence foundation that this process has produced and translate them in a concrete post-summit planning and action. 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.

REFERENCES

Jules Rutebuka (2021) Erosion Control Success Stories and Challenges in the Context of Sustainable Landscape Management, Rwanda Experience in Current Challenges and Future Perspectives in a Changing World Edited by: António Vieira and Silvio Carlos Rodrigues DOI: 10.5772/intechopen.91595 ISBN: 978-1-83962-300-4 Print ISBN: 978-1-83962-299-1 eBook (PDF) ISBN: 978-1-83962-304-2

Miklyae, M.; Jenkins, G.; Shobowale, D.(2021) Sustainability of Agricultural Crop Policies in Rwanda: An Integrated Cost-Benefit Analysis. Sustainability 2021, 13, 48. [https:// dx.doi.org/10.3390/su13010048](https://dx.doi.org/10.3390/su13010048)

National Institute of Statistics of Rwanda (NISR), (2020) Labour Force Survey, Annual report 2019, March

Nilsson, P. 2018. "The Role of Land Use Consolidation in Improving Crop Yields Among Farm Households in Rwanda." Journal of Development Studies 55 (8): 1726–40.

Rwanda Demographic and Health Survey 2014-15

Rwanda Demographic and Health Survey 2019-2020

ANNEXES

Annex 1. Ministerial statement at the un food systems pre-summit 2021

Rwanda, like other nations, prepared herself well to participate in the Pre-Summit of the UN Food Systems Summit to set the stage for the concluding global event to take place on 23rd September 2021 by bringing together diverse actors from around the world to leverage the power of food systems to deliver progress on all 17 Sustainable Development Goals (SDGs). The Pre-Summit took place in Rome from 26–28 July 2021 in which the Hon Minister of Agriculture Dr. Geraldine Mukeshimana participated to report of the activities conducted in Rwanda in preparation of the UN Food Summit. Rwanda reaffirmed its commitment to promote human rights for all and to ensure the most relegated groups can participate in, contribute to and benefit from the Summit process. Rwanda provided evidence-based and scientific approaches to food systems transformation and provided a set of new commitments through coalitions of action and mobilize new financing and partnerships. The following is the country statement that was submitted to the UN Food Summit Secretariate.

The preparation of the UN Food Systems Summit in Rwanda through National food system dialogues provided the opportunity to evaluate our current food systems. The nation examined existing gaps, strengths and opportunities in relation to the triple challenge of food and nutrition security, decent livelihoods and environmental sustainability.

The current food systems still face many challenges including gaps in crop and livestock productivity that are associated with low uptake of modern technologies, knowledge and skills gaps among small scale farmers who constitute the majority of our food producers; Weak logistics and processing infrastructures in rural areas lead to post-harvest food loss and limited job creation; Limited awareness and high cost of healthy and nutritious foods lead among others to high levels of stunting among children below five years of age; and susceptibility to shocks due to climate change and weather variability.

The dialogues also shaped up the country's renewed commitments to deliver on national, continental and the 2030 SDGs Agenda while building back better from COVID-19 pandemic. They served as wakeup call for even more need of stronger partnerships and synergies between all the stakeholders in food

systems.

Rwanda's food systems transformation will focus on actions that will:

1. 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.
2. Increase healthy and nutritious food awareness and education programs and upgrade the laboratory capacity for food safety and Surveillance.
3. Promote and de risk Agri-food investments in post-harvest management and agro-processing facilities to reduce food losses and create jobs
4. Promote Social & environmental resilience through increasing the coverage of agricultural insurance and social protection programs to enhance graduation from poverty and extreme poverty;
5. Enhance the contributions from women and youth for sustainable and equitable food futures

Current and past success stories that supported our progress such Crop and livestock intensification, One cow per poor family, small livestock promotion, Kitchen gardens, Early Childhood Development Centres at village level, National Strategic Food Reserves will be scaled up.

In keeping with continental coalitions effort such as *African Common Position in Food Systems Transformation*, Rwanda is strongly committed to join other leaders of the United Nations, civil society, academia and the private sector to scale up school meals programmes to combat child hunger and reach healthy and nutritious meal in schools by 2030.

In conclusion, Rwanda does recognize multifaceted nature of the Food Systems. Therefore, delivering on the promise of a well-functioning food system requires a concerted effort nationally, regionally, and internationally between stakeholders to show a united front in tackling the numerous food system challenges and to promote its wide adoption.

Annex 2: Members of Food Systems National Technical team

Food systems Summit Action track	Names	Institution
Ensuring Access to Safe and Nutritious Food for All	MUTWARE Joseph	LAND O' LAKES Orora Wihaze Project
	MUHINDA Otto	FAO
	Gaetan Henri	FAO
	MUKANTWALI Christine	FAO
	Chantal Gegout	WHO
	Vera Kwara	WFP
	Eric Nigaba	WFP
	PEGGY MATIVO	Boston consulting group
Shifting to Sustainable Consumption Patterns	BIRUNGI Annette	UNICEF
	Youssef Koita	UNICEF
	Chantal Gegout	WHO
	Amy Blauman	WFP
	Damien Nsengiyumva	WFP
	Patrice Nzeyimana	WFP
	UWONKUNDA NYATANYI Irene	NCDA
Boosting Nature-Positive Production at Sufficient Scales	BANAMWANA Marshall	MoE
	Immacule Uwimana	NDC
	Patrice Nzeyimana	WFP
	Marie Rose Umutoni	WFP
Advancing Equitable Livelihoods and Value Distribution	KAYIGANA Godfrey	MINALOC
	NTAGANDA Peter	MINAGRI
	HABIMANA Jean Pierre	MYCULTURE
	BIRASA NYAMULINDA	RDB
	Francisco Rispoli	IFAD
	Aimable Ntukanyagwe	IFAD
	Ludmila Azo	ITC
	Andrew Mold	Regional Integration and AfCFTA Cluster
	Rachel Nsubuga	UNECA
	Laurent Ulimubenshi	WFP
	Pascal Habumugisha	WFP
Building Resilience to Vulnerabilities, Shocks and Stresses	KIBSGAARD Daniel	WFP
	Ana Paula BEDOYA	WFP
	Amar Kawash	WFP
	Tiina Honkanen	WFP
Crosscutting issues	NTAGOZERA Emmanuel	MIGEPF

Coordination matters	MUSABYIMANA Jean Claude	MINAGRI
	NDABAMENYE Telesphore	MINAGRI
	Erika Debona Fofana	IOM
	Josephine Marealle Ulimwengu	UN RCO
	MUZIRANENGE Aimee	UN RCO
	Maureen twahirwa	UN RCO
	Cynthia Dushime	UN RCO
	Hilda Vasanthakaalam	UN Consultant
	NEZERWA Martine	MINAGRI

Annex 3. Linkage between Action tracks

Ensuring Access to Safe and Nutritious Food for All	Shifting to Sustainable Consumption Patterns	Boosting Nature-Positive Production at Sufficient Scales	Advancing Equitable Livelihoods and Value Distribution	Building Resilience to Vulnerabilities, Shocks and Stresses
Ensuring Access to Safe and Nutritious Food for All	- Utilization: increase consumption of nutritious foods - Food Safety: consumer awareness, regulatory framework, laboratory capacity and number of certified products - Empower women for decision-making on food consumption in households	- Availability: Increase production/yield in climate smart way (e.g., right soil-erosion measures, extension services on fertilizer use) – crop intensification and land consolidation - Reduce food loss and improve food handling methods - Promote climate friendly farming practices, research into climate resilient varieties - Increase private sector investments	- Empowering women and youth to participate in food systems (access to finance, extension services) - Empower women for decision-making on food consumption in households - Make nutritious/health foods more affordable (especially for vulnerable groups) - Increase output of small-holder farmers via better input, extension services, soil-erosion prevention measures	- Make nutritious/health foods more affordable (especially for vulnerable groups) - Improve infrastructure: distributions chains, post-harvest handling and processing, feeder roads - Increase access to finance and insurance - Increase innovation and research (bio-fortified seeds, animal breeds/genetics, production technologies etc.)

Shifting to Sustainable Consumption Patterns	Ensuring Access to Safe and Nutritious Food for All	Shifting to Sustainable Consumption Patterns	Boosting Nature-Positive Production at Sufficient Scales	Advancing Equitable Livelihoods and Value Distribution	Building Resilience to Vulnerabilities, Shocks and Stresses
Shifting to Sustainable Consumption Patterns	1) Legislative framework does not promote healthy diets: • Code to regulate the marketing of breastmilk substitutes in order to protect breastfeeding, • Laws regulating marketing of unhealthy foods including sugar sweetened beverages, which is directly linked to growing overweight and obesity in children and adolescents, • Labelling: front of pack nutrition and eco labelling helping consumers to make informed choices, thereby promoting healthy diets, • Policy framework promoting fortification of complementary foods and staple foods with micronutrients as an approach to cost-effective intervention. • Post-harvest strategies and policies to reduce food waste at all levels		• Post-harvest strategies and policies to reduce food waste at all levels	• Investing in the development of strong and innovative social and behaviour change interventions/ strategies to empower different categories of the population • Evidence supported interventions/ strategies to provide accurate and timely data for nutrition programming to create demand and promoting consumption of nutritious food • Strengthening accountability through Systems strengthening and Capacity development for nutrition programming	

	Ensuring Access to Safe and Nutritious Food for All	Shifting to Sustainable Consumption Patterns	Boosting Nature-Positive Production at Sufficient Scales	Advancing Equitable Livelihoods and Value Distribution	Building Resilience to Vulnerabilities, Shocks and Stresses
Boosting Nature-Positive Production at Sufficient Scales	- Fast-track the implementation of the Land Use Master plan and ensure its enforcement to protect and efficiently utilize agriculture land. - Promote agro-systems at local level that utilize ecosystem-based approaches and maximize production on small land (e.g. micro-agriculture, urban agriculture, and landless agriculture). - Enhance inter-ministerial coordination among different sector players to determine the trade-offs between agriculture and environment and strengthen policy coherence/implementation - Promote inclusive consultation processes and participatory assessments on land degradation for the design of effective ecosystem restoration strategies through soils, crops, livestock and wildlife management interventions.	- Explore opportunities to adopt circular economy into the food systems value chain - Fast-track the implementation of the Land Use Master plan and ensure its enforcement to protect and efficiently utilize agriculture land. - Enhance inter-ministerial coordination among different sector players to determine the trade-offs between agriculture and environment and strengthen policy coherence/implementation - Promote inclusive consultation processes and participatory assessments on land degradation for the design of effective ecosystem restoration strategies through soils, crops, livestock and wildlife management interventions.	-	- Fast-track the implementation of the Land Use Master plan and ensure its enforcement to protect and efficiently utilize agriculture land. - Enhance inter-ministerial coordination among different sector players to determine the trade-offs between agriculture and environment and strengthen policy coherence/implementation - Promote inclusive consultation processes and participatory assessments on land degradation for the design of effective ecosystem restoration strategies through soils, crops, livestock and wildlife management interventions.	- Promote the use of technology/innovations that improve yield while reducing GHGs and land degradation - Scale up initiatives to restore/rehabilitate degraded ecosystems and promote indigenous species in agroforestry and landscape restoration in high-risk areas. - Fast-track the implementation of the Land Use Master plan and ensure its enforcement to protect and efficiently utilize agriculture land. - Enhance inter-ministerial coordination among different sector players to determine the trade-offs between agriculture and environment and strengthen policy coherence/implementation - Promote inclusive consultation processes and participatory assessments on land degradation for the design of effective ecosystem restoration strategies through soils, crops, livestock and wildlife management interventions.

Advancing Equitable Livelihoods and Value Distribution	Ensuring Access to Safe and Nutritious Food for All	Shifting to Sustainable Consumption Patterns	Boosting Nature-Positive Production at Sufficient Scales	Advancing Equitable Livelihoods and Value Distribution	Building Resilience to Vulnerabilities, Shocks and Stresses
	- Setting up an appropriate credit funds to facilitate small holder farmers access to affordable financing (e.g. tailor making loan conditions to crop seasonality, farmer (borrower) category and at a reduced interest rate) - Facilitate creation of agro-processing industries in rural areas spearheaded by private sector (linkage with farmers' groups and cooperatives through contract farming frameworks) - Increase agriculture and livestock productivity through improved access to quality inputs, irrigation, mechanization, and sustainable water and soil management considering climate change and weather risk mitigation strategies	Facilitate creation of agro-processing industries in rural areas spearheaded by private sector (linkage with farmers' groups and cooperatives through contract farming frameworks, etc.)	Increase agriculture and livestock productivity through improved access to quality inputs, irrigation, mechanization, and sustainable water and soil management considering awareness on climate change and weather risk mitigation strategies		- Setting up an appropriate credit funds to facilitate small holder farmers access to affordable financing (e.g. tailor making loan conditions to crop seasonality, farmer (borrower) category and at a reduced interest rate) - Facilitate creation of agro-processing industries in rural areas spearheaded by private sector (linkage with farmers' groups and cooperatives through contract farming frameworks, etc.) - Establish social protection graduation programs and guidelines including clear/quantifiable indicators, promote geographical coverage, enforce social registry to improve beneficiary targeting, and enhance coordination among lead institutions - Increase agriculture and livestock productivity through improved access to quality inputs, irrigation, mechanization, and sustainable water and soil management considering awareness on climate change and weather risk mitigation strategies

Building Resilience to Vulnerabilities, Shocks and Stresses	Ensuring Access to Safe and Nutritious Food for All	Shifting to Sustainable Consumption Patterns	Boosting Nature-Positive Production at Sufficient Scales	Advancing Equitable Livelihoods and Value Distribution	Building Resilience to Vulnerabilities, Shocks and Stresses
	Increase coverage of livestock and crop insurance - Continue increasing awareness through national media campaigns - Leverage innovative technologies (including satellite/drone technology) to enhance the data systems linked to insurance, as well as customer feedback mechanisms to ensure use of lessons - Continue initiatives aimed at reducing premium costs through de-risking the sector		Increase area under climate smart agriculture (CSA) practices through enhanced coordination and smart incentives for green production - Ensure coordination among stakeholders through strengthened national systems, including public-private dialogues (PPD), value chain platforms (VCPs) among others - Incentivize Climate Smart Agriculture (CSA) practices (smart subsidies, tax breaks), as well as create stronger partnerships with institutes (e.g. RICA) promoting such practices	Increase the participation of smallholder farmers in regional food markets through a private sector friendly business environment - Harmonize border inspect procedures through regional blocs (namely EAC) - Target infrastructure investments based on market demand to reduce logistic costs and expand participation by smallholders - Capacity building for MSMEs on trade standards	

