



Republic of Rwanda  
Ministry of Agriculture  
& Animal Resources

# FIFTH STRATEGIC PLAN AGRICULTURE TRANSFORMATION PSTA 5

*Building Resilient and Sustainable Agri-Food Systems*

July 2024

# Table of Contents

<b>Executive Summary</b>	<b>3</b>
<b>1. Introduction</b>	<b>6</b>
<b>2. Sector performance</b>	<b>8</b>
2.1. Agriculture sector performance in the NST1/PSTA4 period	8
2.2. Performance toward Agri-food Security and Nutrition	10
<b>3. Theory of Change</b>	<b>12</b>
3.1 Vision, Mission, and Objective	12
3.2 Impact goals	12
3.3 Theory of Change	13
<b>4. Strategic Framework</b>	<b>14</b>
4.1 Key priority areas of the PSTA 5	14
4.2 Cross-cutting priority areas	17
4.3 Key innovations under PSTA 5	18
<b>5. Estimated Budget Requirement</b>	<b>19</b>
<b>Annex: Results Framework</b>	<b>20</b>

# Executive Summary

Rwanda's agriculture sector remains the bedrock of the economy and is pivotal for inclusive wealth creation, food security, and social transformation as the country strives to become a knowledge-based, high-income economy by 2050.

However, the sector faces significant challenges, including the impacts of climate change and global shocks that have disrupted food prices and availability in recent years. To address these challenges and capitalize on opportunities, the Strategic Plan for Agriculture Transformation (PSTA 5) for 2024/25–2028/29 aims to build resilient and sustainable Agri-food systems that support Rwanda's continued economic and social progress. It adopts a holistic agri-food systems approach, recognizing the interconnectedness of agriculture with health, environment, trade, infrastructure, and other sectors.

The theory of change for PSTA 5 emphasizes connecting farmers to profitable markets as key to unlocking the agri-food system's potential. By linking farmers to lucrative markets, their income and food security improve, enabling them to invest in improved inputs, technologies, and practices that boost production, reduce risks, and create more jobs across value chains. This transforms agriculture into stronger economic activity that fuels the entire agri-food system, improving food availability, access, and stability for consumers, leading to better national food security and nutrition outcomes.

The PSTA 5 provides a comprehensive framework to guide this collaborative effort to transform Rwanda's agri-food systems for a more prosperous, food secure, and resilient future. Investment needed for PSTA 5 is 6,406.5 billion Rwandan Francs, with 43.7% expected from the private sector. The strategy's budget is allocated across three priority areas:

- Modernization of Agriculture and Animal Resources Production for Climate Resilient Agri-Food Systems (58.6% of the budget)
- Inclusive Markets and Post-harvest Management for Sustainable Agri-Food Systems (17.5%)
- Strengthening Agri-food Systems Enablers for Effective and Efficient delivery (23.9%)

At the core of the strategy are innovative approaches like Food Basket Sites (FOBASI) and AgriHubs, which will focus resources in key production areas and foster collaboration among agri-food system actors, driving Rwanda's agricultural transformation with private sector involvement.

The PSTA 5 is projected to have a transformative impact with the agricultural GDP to grow by over 6% annually, agriculture exports expected to exceed \$ 1.5 billion, stunting reduced from 32.4% to below 15%, and the number of food-secure households increased from 79.4 % to 88%, while food self-sufficiency ratio will reach 100%.

# EXPECTED IMPACT

Legend: ■ Baseline ■ Target

## Inclusive Economic Transformation

 <b>2%</b>	Agriculture growth	<b>&gt;6%</b>
 <b>857</b> Million USD	Agriculture exports revenue	<b>1,540</b> Million USD
 <b>72%</b>	Women in agriculture with adequate empowerment	<b>100%</b>
 <b>400,000</b>	Off-farm jobs in agri-food systems	<b>644,204</b>

## Improved Food Security and Resilience

 <b>79.6%</b>	Percentage of food secure HH (CARI indicator)	<b>88%</b>
 <b>32.4%</b>	Stunting rate	<b>15%</b>
 <b>5.5</b>	Dietary diversity score	<b>8.0</b>
 <b>79.6%</b>	Food self-sufficiency ratio	<b>100%</b>



Investment needed  
**6,406.5 Billion**  
Rwandan Francs

# OVERVIEW OF THE CURRENT AGRI-FOOD SYSTEMS

- Environment**
- Climate change
  - Land
  - Ecosystem services

- Infrastructure & technology**
- Roads
  - Aggregation and markets
  - Electricity & water

- Rules & regulations**
- Laws and regulations
  - Food quality & safety
  - Subsidies

- Society**
- Skilled labor
  - Cultural norms

**% of landsize - 2023**



- Input supply**
- Inputs supply has **10k workers** and contributes **50M USD** to the economy
  - Inputs such as fertilizers and pesticides are mainly imported and distributed by agro-dealers.
  - Subsidies such as SMART Nkunganire enable access to these inputs.

**Farm production**



- Predominantly smallholding with average farm size of **0.4 ha**.
- Food crops such as beans, maize, and cassava are the most cultivated crops.
- Cows and goats are the most reared livestock.
- Agricultural production accounts for **25%** of Rwanda's economy.

**1,660,185** Market oriented farmers  
**1,759,278** Subsistence farmers

**Processing & packaging**

- Agro-processing contributes **583 million USD** to Rwanda's economy
- Agro-processing has **170K workers**
- Small processors dominate food producers.
- Bakery, cereals and alcoholic beverages are the main products.
- RICA, FDA and RSB – bodies in charge of standards and policies

**Transport and trade**

- Trade and transport tailored to agri-food systems employs about **140,000 workers**
- It contributes **210 million USD** to the economy.

**Hotels and restaurants**

- The subsector employs **30,000 workers**.
- It contributes **261 million USD** to the economy.

**Exports**

- Rwanda mainly exports tea, coffee, horticulture, animals and animal products.
- In 2023, agriculture exports revenue amounted to **857 million USD**, a **38%** increase from 2018.

**Home consumption**

- On average only **32% -38%** of food crop produce is sold to a market
- About **73%** of households have acceptable food consumption.

**Environment**

- Biodiversity
- Low emissions

**Livelihoods improvement**

- Private sector development
- Youth & women employment
- Incomes

**Food security & nutrition**

- Food diversity
- Food availability
- Food sovereignty

Source: NISR, LFS, 2023; IFPRI, Rwanda's Agrifood System, 2022; NISR, National Accounts, 2023

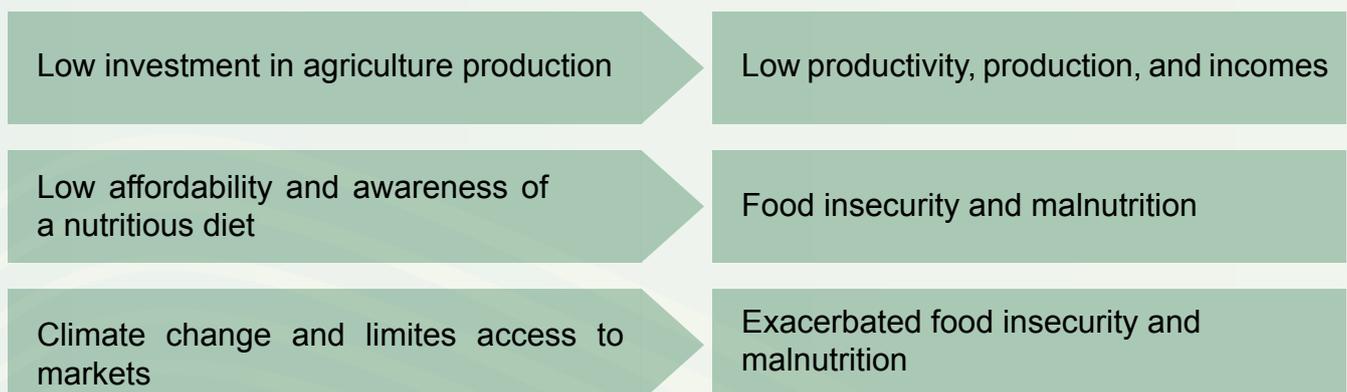
# 1. Introduction

The agriculture sector remains the backbone of the Rwandan economy and a key driver of socio-economic transformation as the country transitions toward an upper-middle income economy by 2035 and a high-income economy by 2050. In 2023, agriculture accounted for 27% of GDP and about 34% of exports, while playing a critical role in social transformation, women’s economic empowerment, and youth employment.

**Beyond its economic weight, agriculture lies at the heart of delivering food and nutrition security for a growing population, thereby sustaining national transformation in the decades to come.** Against this backdrop, Rwanda adopts an Agri-food systems approach that recognizes agriculture as more than on-farm production: it is a network of interlinked actors and activities from inputs and production to processing, distribution, and consumption that collectively determine the availability, affordability, safety, and nutritional quality of food. As Rwanda advances toward Vision 2050, agriculture’s ability to deliver safe and nutritious food is not only a social necessity but a cornerstone of economic growth and poverty reduction, underpinning human capital development, productivity gains, and sustainable long-term development.

**Considering the current context, food security is increasingly under threat from the escalating effects of climate change, global shocks, and structural pressures** such as rapid population growth (2.5% per year), severe land scarcity (less than 0.4 ha per household), and ecosystem degradation. These effects, combined with internal structural challenges within Rwanda’s agriculture sector such as low labour productivity and persistent post-harvest losses, have underscored vulnerabilities across the entire food system, clearly demonstrating that production-focused responses alone are insufficient.

**Additionally, the review of the previous PSTA, together with evidence from multiple studies, revealed a reinforcing cycle of constraints within the agri-food system.** Low investment in agricultural production has limited the adoption of modern technologies and climate-smart practices, resulting in low productivity, production, and farm incomes. In turn, low incomes combined with insufficient nutrition awareness have reduced households’ ability to afford diverse and nutritious diets, contributing to persistent food insecurity and malnutrition. These challenges are further intensified by climate change impacts and limited access to markets, which disrupt production, increase price volatility, and weaken food availability and access. Collectively, these interlinked factors have exacerbated food insecurity and malnutrition, underscoring the need for a comprehensive agri-food systems transformation rather than isolated, production-focused interventions.



**Addressing these challenges calls for intensified agri-food systems transformation through modern, climate-resilient agricultural technologies and practices, more efficient land use, and ecosystem restoration.** This also requires strengthening linkages among agri-food systems actors and markets, increasing investment in nutrition-sensitive value chains, and significantly raising labour productivity, while managing a gradual transition toward a less labour-intensive sector with careful attention to youth and gender impacts. PSTA 5 responds by prioritizing resilient and sustainable agri-food systems as the foundation for future growth and food security.

**The PSTA 5 being the overarching agriculture sector plan, will implement the second edition of the National Strategy for Transformation (NST 2) spanning the 2024-2029 period.** The strategy was formulated in alignment with Rwanda's Vision 2050, National Agriculture Policy and other preceding documents. It also took into consideration international commitments, such as the CAADP agreements and the Sustainable Development Goals (SDGs).

**The PSTA 5 formulation process followed the Cabinet Paper's guidelines on consultative process at all levels and adopted evidence-based approach.** The primary data was collected following different approaches and secondary data from existing sources. Consultations were organized both horizontally with ministries, departments and agencies and vertically at district, provincial and national level. Broad range of stakeholders were involved in the consultation process including farmer and other value chain actors, civil society organizations, development partners, policy think tanks, academia, private and public sector and others.

**This document is an abridged version of the strategy, providing key highlights for users who need a concise reference,** while the full version offers detailed guidance for technicians and other specialized users. The following sections are structured as follows: a brief overview of Sector performance; the Vision, which informs the Theory of Change; and the Strategic Framework divided into three priority areas. Priority Area 1 focuses on the supply side, aiming to increase agricultural production through climate-resilient practices and technologies. Priority Area 2 addresses markets, value chains, and consumption to support sustainable food systems. Priority Area 3 covers systemic enablers that strengthen the Agri-food systems overall. Each area includes outcomes and outputs outlining the planned activities under PSTA 5.

## 2. Sector performance

**Farming plays a significant role in agri-food systems giving employment to 3.5 million farmers.** Out of these, 1.78 million derive their main livelihood from subsistence farming, and 1.72 million are market oriented. Men have a significantly higher propensity to be engaged in market-oriented agriculture than women (55% vs 44%). Additionally, the wider food-systems beyond primary production employ about 400,000 people and contribute approx. USD 1.1bn to GDP according to estimates. About 58% of farmers are women, and 95% of farmers reside in rural areas. Youth (age 16-30) constitute 32% of farmers and two thirds of farmers are younger than 46 years of age. In Rwanda, the average landholding is 0.45 ha and half of the agricultural HHs own less than 0.2 ha. per agricultural household.

### 2.1. Agriculture sector performance in the NST1/PSTA4 period

The sector performance, shown in the infographic on the next page, indicates that during PSTA 4, agricultural gross value added grew by 3.1% per year, below overall GDP growth of 6.5%. Food crops remained the largest sub-sector at 62% of production, while animal production expanded strongly at 9% per year.

**On the use of key production inputs and practices, PSTA 4 saw increased adoption of good agricultural practices** where inorganic fertiliser use rose from 22% to 56% (32 to 70 kg/ha), organic fertilizer from 44% to 86%, improved seeds from 9% to 29%, and pesticide use from 17% to 33%. Rising input costs from 2022 challenged access, prompting the government to adjust prices and subsidies. Soil and water management measures also expanded, with anti-erosion practices reaching 92% of farmers, terrace area increasing from 110,905 ha to 138,579 ha, and irrigated land doubling to 71,585 ha.

**Food crop production grew by about 10% mainly due to expanded area,** though yields varied by crop, with some improving (cassava, wheat, rice, sweet potato, maize) and others declining due to disease and climate impacts. These are for instance, bean yields that declined by 18% (mainly due to droughts, disease and lower use of quality seeds) and cooking banana yields declined by 16% in the period due to widespread Banana Xanthomonas Wilt disease.

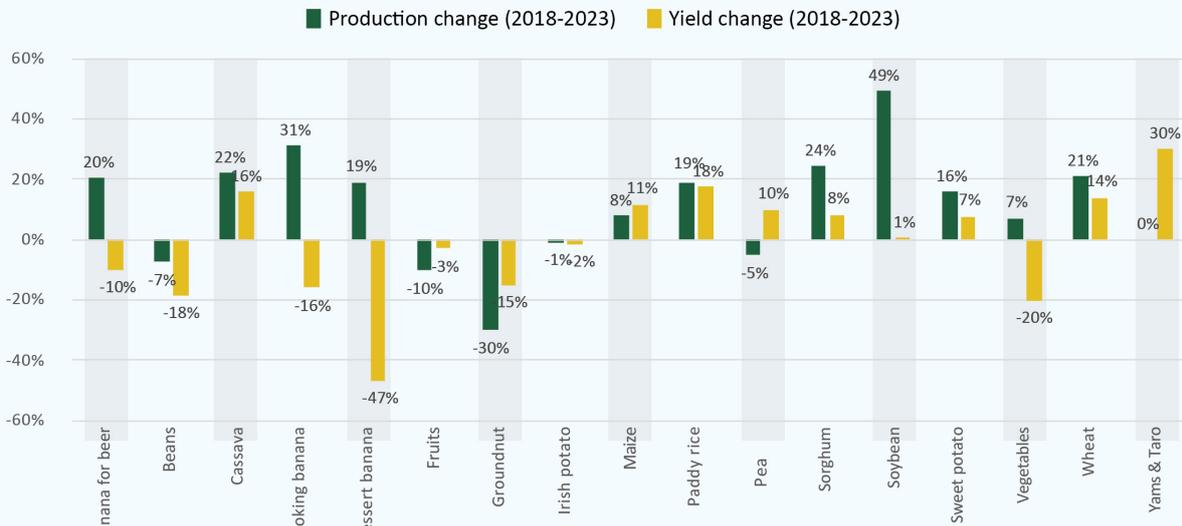
**Animal resources production volumes has increased significantly** and the growth is attributed to different programs supporting the development of the animal resources sub-sector. For example, milk production rose by 37%, meat by 105% mainly from beef and poultry, eggs by 132%, fish by 48%, and honey by 39%.

**Agriculture exports grew from USD 462.4 million in 2018/19 to USD 857 million in 2022/23.** Coffee and tea account for over a quarter of exports, alongside informal cross-border trade in animal products, live animals, and cereals. Horticulture exports rose 136%, increasing their share from 4% to 7%, while grains and other commodities, over half of exports, grew 38.5%. These developments were supported by improved logistics, business linkages and emerging exports value chains that will continue to be developed.

# AGRI-FOOD SYSTEMS PERFORMANCE

## PRODUCTION AND YIELD CHANGE

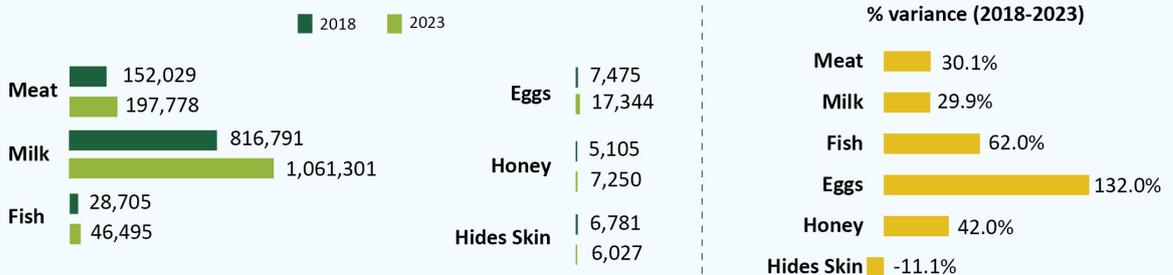
In the past five years, crop production has generally risen except for crops like groundnuts. Soybeans, cooking bananas, sorghum, and cassava had the most significant growth. Additionally, there has been notable variations in yields across different crops. Dessert bananas experienced the largest decrease in yield, while yams and taro saw the most substantial increases.



Source: NISR, Seasonal Agriculture Survey, 2023

## ANIMAL PRODUCTION (MT)

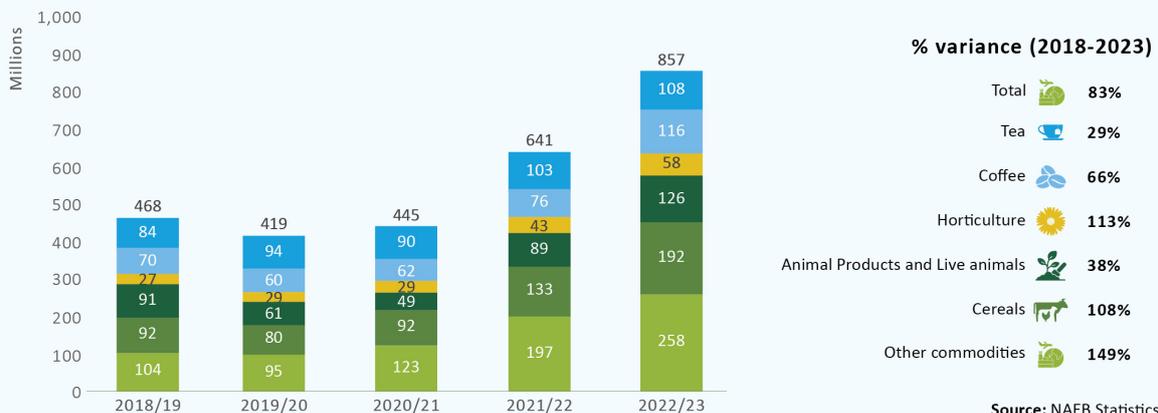
There was substantial growth in animal resources production in the 2018-2023 period especially in eggs. This growth is attributed to different programs such as the livestock intensification program, Girinka program, small stock development, and genetics improvement.



Source: MINAGRI, Annual Report 2022/23

## EXPORTS PERFORMANCE

Agriculture exports increased by 83% between 2018 and 2023. Coffee and tea remain the largest export value chains.



Source: NAEB Statistics, 2023

## 2.2. Performance toward Agri-food Security and Nutrition

Over the past few years, the country faced increased exposure to food related risk factors impacting food availability, access, and stability. The food inflation peaked at 65% in November 2022, due to a combination of reduced global supply of grains and fertilizers, food export restrictions, and climate change impact affecting the domestic production. Prior to that, the Covid-19 pandemic had severely affected household incomes.

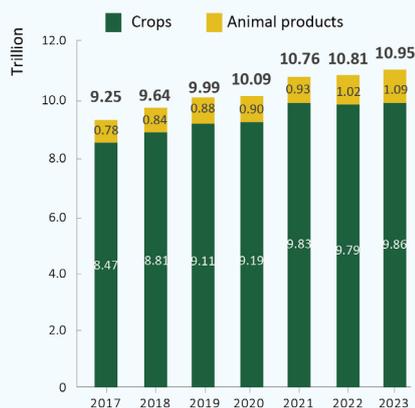
Rwanda relies on imports for 20% of the dietary energy needs rendering the country vulnerable to international food crises. Food production has increased from 2,176 kcal/person/day in 2018 to estimated 2,233 kcal/capita/day in 2023. Though National protein production increased by 10% between 2018 and 2023, still the production is 19% short of the domestic need.

### DOMESTIC FOOD PRODUCTION VERSUS DIETARY NEEDS

#### KILOCALORIES PRODUCTION

##### Total kcal production 2018-2023

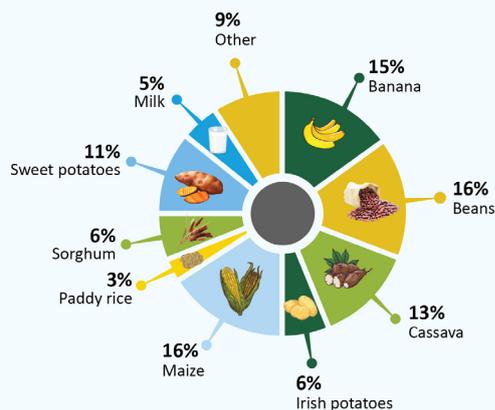
In 2023, the total kcal production reached 11 trillion, a 14% rise from 2018. This translates to an average of 2,233 kcal per person per day, which meets the population's required kcal intake. Crops, primarily staple crops, contribute over 90% of the production.



Source: NISR, Rwanda Food Balance Sheets Dashboard, 2023

##### Crops and Animal Resources contribution to kcal production 2023

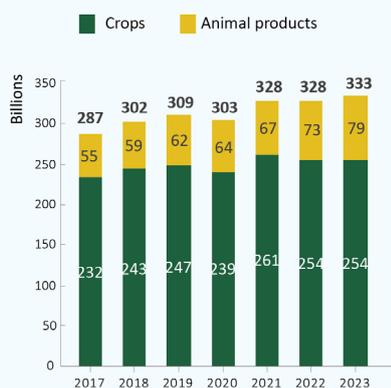
The most important crops for kcal production are maize (16%), Beans (15.6%), Banana (14.9%), Cassava (13.4%), and sweet potato (14.6%), whereas milk is the most important animal product.



#### PROTEIN PRODUCTION

##### National protein production 2018-2023

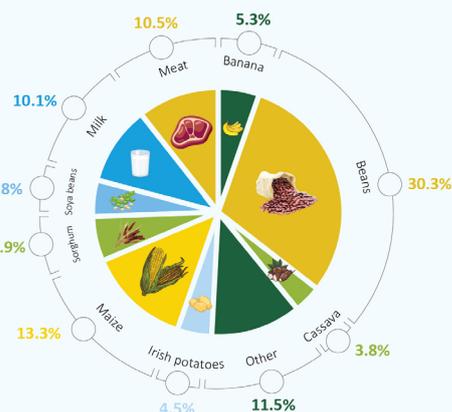
Protein production amounted to 333 billion, marking a 10% increase from 2018. However, estimates indicate that production falls short by 19% compared to domestic demand. Crops account for over 75% of the production.



Source: NISR, Rwanda Food Balance Sheets Dashboard, 2023

##### Crops and Animal Resources contribution to protein production 2023

Beans remain the largest contributor to protein production at a rate of 30.3% followed by maize (13.3%), meat (10.5%), and milk (10.1%).



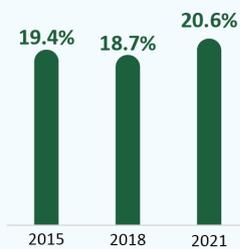
In terms of household food and nutrition security, Rwanda has made progress, with improvements in dietary energy and protein production and a decline in stunting rates, resulting in around 79% of households being food secure. Nevertheless, climate shocks and market volatility continue to restrict access, leaving about 20% of households, food insecure. The infographic below highlights these trends across districts and households, underscoring the holistic, system-wide approach that PSTA 5 aims to achieve.

## STATUS OF FOOD SECURITY IN RWANDA

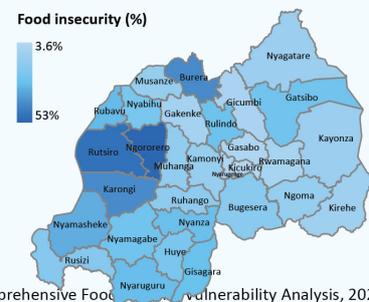
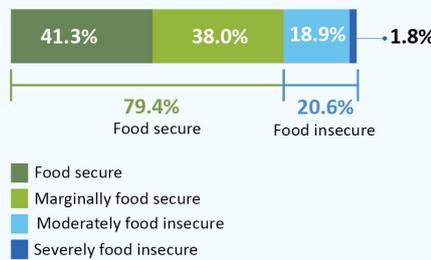
### FOOD SECURITY STATUS

In 2021, food insecurity affected 20.6% of households, with a higher incidence noted in certain districts located in Western and Northern provinces. This rate has risen from 18.7% in 2018 due to the effects of COVID-19, heightened inflation, and other global shocks, which have impacted food affordability.

#### Trends in food insecurity

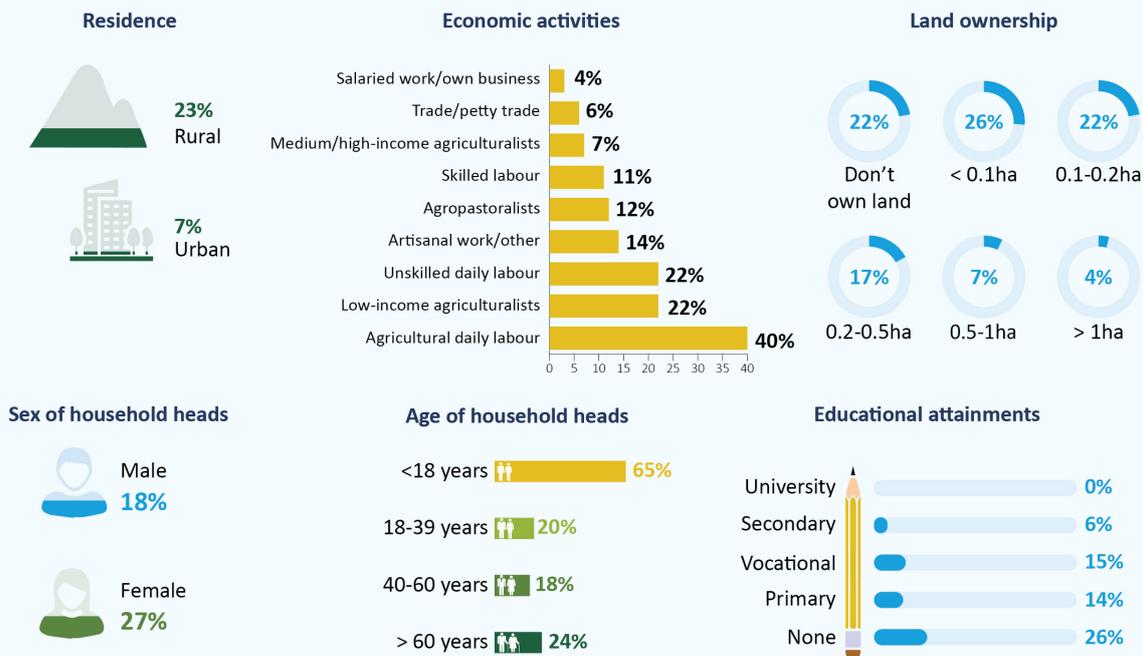


#### Food insecurity as of 2021



### FOOD INSECURITY ACROSS HOUSEHOLDS DEMOGRAPHICS

Food insecurity is higher among rural households, those reliant on the agriculture sector and those with smaller land holdings. Additionally, households headed by females, individuals outside the working age bracket (below 18 or above 60 years old), and those led by less educated individuals are more prone to experiencing food insecurity.



Source: NISR, Comprehensive Food Security Vulnerability Analysis, 2021

# 3. Theory of Change

## 3.1 Vision, Mission, and Objective

PSTA 5 serves as a framework for implementing the National Strategy for Transformation (NST 2), ensuring direct alignment with the National Agriculture Policy and Rwanda’s Vision 2050. The strategy is guided by the following vision and mission:

### VISION

A nation that achieves food security, nutritional health, and sustainable agricultural growth driven by a productive, resilient, and market-led agricultural sector.

### MISSION

To ensure food and nutrition security in Rwanda by leveraging modern production and agribusiness, while professionalizing farmers to enhance production, post-harvest management, commercialisation, and competitiveness.

## 3.2 Impact goals

The impact goals are by the Vision 2050 and NST 2 calling for a bold agenda for PSTA 5 aimed at transforming not only the agriculture sector but underpinning transformation of all Agri-food systems to achieve sustainable food and nutrition security and increasing resilience.

**Increased economic growth and opportunities.** Increasing rural household incomes will be the bedrock of broad-based transformation in the long-term underpinning progress on social and economic indicators. Vision 2050 sets a bold target for labour productivity which is a function of growth in agriculture GDP and creating non-farm opportunities to reduce the dependency of agriculture for incomes. This requires a substantial increase in land productivity paired with labour saving technologies. Moreover, it requires a shift to higher value products through increased exports and value addition. Increasing incomes for agricultural households will underpin the economic transformation in the decades to come.

**Improved food security and nutrition.** Agriculture is the cornerstone of both economic stability and societal health and well-being. PSTA 5 targets a substantial elevation in the percentage of our populace who are food secure. Concurrently, in a bid to nurture a healthier future generation, the plan is committed to reducing stunting rates. National food sovereignty is another aspect of food security to be addressed by the strategy. The strategy will target increased national production and food reserve capacity.

**Improved resilience.** Rwanda, like other countries, has been affected by global shocks such as COVID-19, supply disruptions, and climate change, with more likely in the future. Building resilient agri-food systems is therefore essential, through climate-smart agriculture, sector de-risking, inclusive practices, farmer capacity building, and strengthening the strategic grain reserve.

### 3.3 Theory of Change

The PSTA 5 Theory of Change illustrated in the infographic below, is based on the premise that Rwanda’s Agri-food systems are constrained by low investment and climate shocks, which limit the systems’ actors, particularly farmers’ capacity to adopt technologies, increase production, and manage risks effectively.

Connecting farmers to remunerative markets raises incomes, enabling investment in inputs, technologies, infrastructure, and resilience measures, while creating jobs and stimulating input and service markets. This increases food availability, access, and nutrition outcomes, and unlocks opportunities for youth and women.

For sustainable, resilient and inclusive agri-food systems in Rwanda, PSTA5 implementation will focus on three strategic investments namely modernizing production, developing inclusive markets and post-harvest management, and strengthening systemic enablers.



# 4. Strategic Framework

The PSTA 5 provides a comprehensive framework to guide this collaborative effort to transform Rwanda’s agri-food systems for a more prosperous, food secure, and resilient future, with connecting farmers to markets as the catalyst for systemic change. To achieve its goals, the PSTA 5 focus on three priority areas: **Priority Area I: Modernization of Agriculture and Animal Resources Production** for climate-resilient agri-food systems; **Priority area II: Priority Area II: Inclusive markets and post-harvest management** for sustainable agri-food systems; and **Priority Area III: Strengthening agri-food systems enablers** for effective and efficient delivery.

## 4.1 Key priority areas of the PSTA 5

### Priority Area I: Modernization of Agriculture and Animal Resources Production

**To achieve a 50% increase in productivity and more than 6% annual growth in agricultural GDP, as outlined in the NST2 goal**, a new approach is required to address land fragmentation particularly through AgriHubs and Food Basket Sites (FOBASI) while promoting sustainable land, land health, climate change adaptation, inputs, crop pest and disease control, agricultural water resource management, and mechanization.

**Simultaneously, efforts will focus on enhancing and diversifying incomes and diets by improving animal resource production systems to ensure sufficient animal resources** and related products. This endeavor involves bolstering infrastructure for livestock production, optimizing animal feeding, refining breeding techniques, and improving animal health systems. By elevating productivity levels at the farm level and considering climate change, the groundwork is laid for heightened incomes, food security, and increased resilience across the agricultural landscape.

### Outcome 1.1. Modernized crop production and productivity

This outcome supports the transition to a modern, market-oriented, and climate-resilient agriculture, scale up the use of modern inputs and technologies to maximize productivity, and enhance access to agricultural finance and risk-sharing facilities. Significant increase in land productivity, paired with labour-saving technologies will be a central focus of this outcome with shift towards higher-value products through increased exports and value addition.

#### 1.1. Climate Smart Crop Production & Productivity

#### Key outputs

- New agriculture land management and production model
- Promote urban farming
- Sustainable land and water management
- Plant health management
- Mechanization, modern inputs, and labour-saving technologies

## Outcome 1.2. Modernized animal resources production and productivity

This outcome will address key challenges and opportunities related to animal husbandry practices, breeding, animal health, feeds availability, finance, and relevant infrastructure for production and value addition. These factors are complementary and therefore the strategy will take a clustered approach concentrating efforts toward tangible results.

### 1.2. Modernized Animal Resources and Production and Productivity

#### Key outputs

- Improved animal husbandry & modern infrastructure in animal resources hubs
- Sustainable animal breeding & access to animal feeds
- Animal health systems
- Fisheries & aquaculture development
- Beekeeping development

## Priority Area II: Inclusive markets and post-harvest management for sustainable agri-food systems

Priority Area II considers the demand-side in the agri-food systems where developing the domestic market is essential for food security and nutrition, while export markets provide opportunities for increasing incomes and attracting investment. The aim is to transition agriculture from subsistence to commercial farming to achieve food security, improve nutrition and to ensure economic empowerment of farmers. This requires increased investment in post-harvest management, value addition, enhancing market access and infrastructure. The PSTA 5 will focus on export diversification by focusing on higher-value crops and animal products, such as beef and dairy.

### Outcome 2.1: Boosted agriculture exports

Agriculture exports carry the highest potential for agriculture transformation through attracting private sector investment and linking farmers to high-value markets. The main factors to drive growth will be to increase the branding, value of exports, production volumes and to promote new value chains.

### 2.1. Boosted agriculture exports

#### Key outputs

- Export value chains enhanced to accelerate growth and farmer prosperity
- De-commoditize Rwandan export in international markets

### Outcome 2.2: Strengthened market linkages and post-harvest infrastructure

The commercialization of farming is identified as a crucial catalyst for agricultural transformation. This necessitates the development of robust market linkages between farmers and their buyers. These linkages take the form of physical (hard) infrastructure, processes, and systems (soft infrastructure) as well as in the relationships established between market system actors. This outcome aims to strengthen these linkages by considering farmer organizations linking the 3.4 million farmers to markets, post-harvest infrastructure, quality standards, value addition, and trade infrastructure.

## 2.2. Strengthened market linkages and post-harvest infrastructure

### Key outputs

- Farmers organisation strengthened
- Post-harvest handling for reduces losses
- Food safety and quality
- Improved trade infrastructure

## Outcome 2.3: Improved Food Security and Nutrition

This component targets the promotion of stable availability, access, and utilization of a safe, nutritious, and varied diet.

## 2.3. Food Security and Nutrition improved

### Key outputs

- Improved access to nutritious food
- Food stability ensured

## Priority Area III: Strengthening agri-food systems enablers

The prioritized enablers in PSTA 5 covers innovation and technology transfers, agriculture financing and de-risking, digitalization, planning and coordination. Improving the capacity of these functions underpins transformation of the system through availing critical services to farmers, market actors, and consumers.

## Outcome 3.1: Strengthened research and technology transfer for agri-food systems transformation

This outcome entails numerous programmes to improve support functions. For example, research and innovation through linkages development and feedback mechanism to increase farmer uptake, Education, especially agriculture TVET and food sciences

## 3.1. Strengthened Research & Technology Transfer for Agri-Food Systems Transformation

### Key outputs

- Demand-driven research
- Customized and comprehensive extension services
- Education and skills development for sustained agri-food systems transformation

## Outcome 3.2: De-risking agriculture for increased resilience

Despite the Agriculture sector's high contribution to Rwanda's GDP still it remains the least-served sector when it comes to financing, with a share that stands at six percent and the total loan portfolio to agriculture stands at 3.7% of total formal credit. The PSTA 5 focuses to address the commitment made by Government of Rwanda under Malabo Deceleration of raising it to 10%.

## 3.2. Agri-Food Systems Digitilisation

### Key outputs

- Affordable digital technologies for agriculture
- Digital innovation in agriculture value chains
- Digital competence development
- Sustainable business models for digital systems & platforms

### Outcome 3.3: Digitized agri-food systems

Under PSTA 5, digitization aims to transform Agri-food systems by improving farm operations through precision farming, smart irrigation, and livestock monitoring. The strategy supports the private sector and civil society by expanding connectivity, bridging the digital divide, improving data, promoting financial inclusion, standardizing tools, building sustainable solutions, and raising awareness through education.

#### 3.3. Digitized agri-food systems

##### Key outputs

- Access to formal agriculture finance ( Establish credit guarantee facility, establish grant facility for infrastructure development, develop agri finance products...)
- National agriculture insurance scheme scaled up.

### Outcome 3.4: Strengthened agri-food systems planning and coordination

This outcome emphasizes strengthened institutional capacity and coordination to deliver results across Rwanda's agri-food systems. MINAGRI will focus on evidence-based policy and programme design, resource mobilization, regulation, and Monitoring, Evaluation, Learning, and knowledge management, while implementing agencies will support farmers, market actors, and consumers. Effective planning, coordination, policies, regulations, and institutional capacity are therefore central to this outcome.

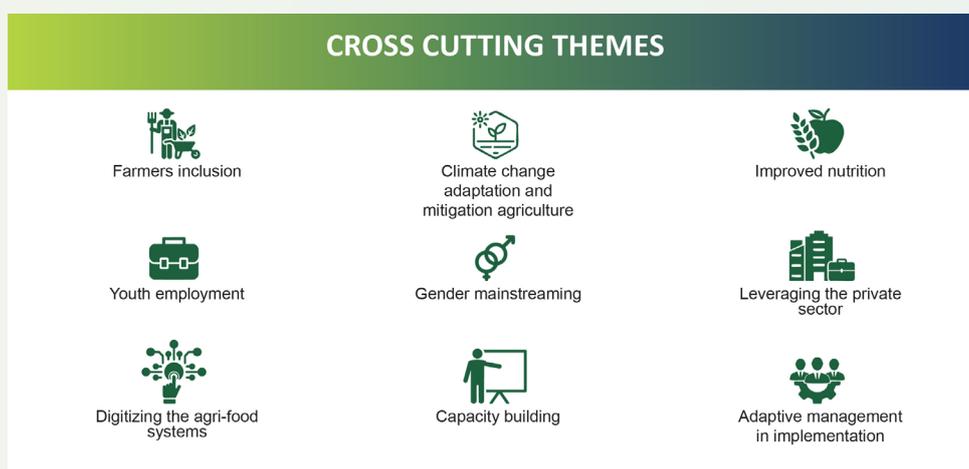
#### 3.4. Strengthened agri-food systems planning and coordination

##### Key outputs

- Capacity for planning and knowledge management
- Agri-food systems coordination and value chain development
- Institutional reforms for effective implementation

## 4.2. Cross-cutting priority areas

The strategy has several cross-cutting priorities. These are priorities which due to their importance and complex nature need to be considered across all strategic components both in planning and implementation. They are presented in the infographic below:



### 4.3. Key innovations under PSTA 5

In this section, the key innovations introduced under PSTA 5 are briefly outlined, highlighting a strategic shift toward a more resilient, inclusive, and market-oriented agri-food systems.

**Focus on Agri-food systems thinking.** PSTA 5 adopts an Agri-food systems thinking approach that recognizes agriculture as both a source of incomes and food security, shaped by interactions among producers, markets, consumers, and enabling sectors such as health, environment, trade, infrastructure, the digital economy, and finance. This requires MINAGRI, the Rwanda's Food Systems Convener, to strengthen its role as a coordinator, regulator, and facilitator, with greater emphasis on joint planning, knowledge management, and mobilizing private and civil society actors.

**Increased focus on climate resilience** is a central pillar of the strategy. PSTA 5 prioritizes climate-smart and regenerative and conservation agriculture through sustainable land and water management, improved soil health, and climate-resilient varieties and breeds, supported by research and an extension system focused on resilient technologies and practices.

**Improved management of agricultural land.** To raise productivity and commercialization, PSTA 5 introduces new management of agricultural land through agriHubs and Food Basket Sites (FOBASI). These sites will concentrate investments in irrigation, post-harvest infrastructure, cold chains, and feeder roads, supported by Farm Service Centres (FSCs) providing inputs, mechanization, extension, and market services. AgriHubs will be large, market-driven production zones targeting domestic and export markets, while Food Basket Sites will organize consolidated smallholder production to strengthen food security and market access. Flexible management models including cooperative-driven, out-grower, and land-leasing models will be applied based on local conditions. Additionally, the strategy emphasizes on the development of a masterplan for protection and better use of agricultural land.

**Emphasis on strategic commodity reserves.** To address market volatility and relieve pressure on the production sector, the strategy emphasizes on strengthening the commodity reserve which would stabilize food markets amid climate and price shocks while enabling the production sector to transition toward sustainable commercial models.

**Increased emphasis on research.** PSTA 5 considers research in modern, climate and nutrition smart technologies as critical elements for transformation. The strategy planned the establishment of centres of excellence promoting climate- and nutrition-smart technologies, strengthening links with education and the private sector, and accelerating adoption.

**Establishment of coordination and delivery unit for Agri-food systems transformation.** This marks a shift in the public sector's role from tactical implementation to strategic facilitation. As provided in the PSTA 5, this transition will be supported by stronger regulatory frameworks, incentives, and robust Monitoring, Evaluation, and Learning systems to align actors, guide investments, and maximize system-wide impact.

## 5. Estimated Budget Requirement

The total cost is estimated at 6,406.5 billion RWF of which 43.7% is expected to be invested by the private sector. The budget is distributed on three Priority Areas:

1. Modernization of Agriculture and Animal Resources Production for resilient food systems (58.6% of the budget)
2. Inclusive markets and post-harvest management for sustainable food systems (17.5%)
3. Strengthening Food Systems Enablers for Effective and Efficient delivery (23.9%)

Additionally, 10.2% of the total budget was estimated to cover contingencies, which will ensure flexibility in adapting to unforeseen circumstances and price fluctuations. The table below provide details on sub-components.

	Domestic Currency (Billion)	Share of total	Foreign currency (US \$ Million)
<b>Total strategy costs</b>	<b>6,406.5</b>	<b>100%</b>	<b>4,950.8</b>
<b>1. Modernization of Agriculture and Animal Resources Production for Climate Resilient Agri-food Systems</b>	<b>3,753.51</b>	<b>58.6%</b>	<b>2,900.7</b>
1.1. Modernized Crop Production and Productivity	2,430.82	37.9%	1,878.50
1.2. Modernized Animal Resources Production and Productivity	1,322.69	20.6%	1,022.20
<b>2. Inclusive markets and post-harvest management for sustainable Agri-food Systems</b>	<b>1,121.17</b>	<b>17.5%</b>	<b>866.4</b>
2.1. Boosted Agriculture Exports	144.45	2.3%	111.6
2.2. Strengthened market linkages and post- harvest infrastructures	234.84	3.6%	181.5
2.3. Improved Food Security and Nutrition	741.88	11.6%	573.3
<b>3. Strengthening Agri-food Systems enablers for effective and efficient delivery</b>	<b>1,531.78</b>	<b>23.9%</b>	<b>1,183.7</b>
3.1. Strengthened research and technology transfer for agri-food systems transformation	860.64	13.5%	665.1
3.2. Strengthened agriculture de-risking for resilience	405.59	6.3%	313.4
3.3. Digitized Agri-food Systems	217.14	3.4%	167.8
3.4. Strengthened Agri-food Systems planning and coordination	48.41	0.8%	37.4

# Annex: Results Framework

Indicator	Unit	Source	Baseline (2023)	2024/25	2025/26	2026/27	2027/28	2028/29
<b>IMPACT LEVEL</b>								
<b>INCLUSIVE ECONOMIC TRANSFORMATION</b>								
Agriculture GDP growth	%	GDP National Account	2.0	6.8	6.6	6.7	6.3	6.1
Agriculture exports revenue (USD Million)	USD Million	NAEB Annual Report	875	932	1,016	1,109	1,214	1,540
Off-farm jobs in the agri food system	Number off-farm jobs in Agri-food system	Labour force Survey and SAM	400,000	440,000	484,000	532,400	585,640	644,000
Women's Empowerment in Agriculture Index	Index value	IFPRI	72	-	85	-	100	-
<b>IMPROVED FOOD AND NUTRITION SECURITY</b>								
Percentage food secure HH (CARI indicator)	%	CFSVA	79.4 (2021)	83	-	-	88	-
Stunting rate	%	CFSVA	32.4 (2021)	30	26	22	18	15
Average Household Dietary Diversity Score	Score	CFSVA	5.5	5.94	-	-	8	-
Food self-sufficiency ratio	%	Food Balance Sheet	79.6 (2022)	81	85	90	95	100
<b>PRIORITY AREA ONE: MODERNIZATION OF AGRICULTURE AND ANIMAL RESOURCES PRODUCTION FOR CLIMATE RESILIENT AGRIFOOD SYSTEMS</b>								
<b>OUTCOME 1.1: MODERNIZED CROP PRODUCTION AND PRODUCTIVITY</b>								
Quantity of production								
Maize	MT	SAS	508,492	553,953	599,587	665,701	751,440	874,337
Paddy rice	MT	SAS	133,628	145,714	194,117	240,073	284,576	293,178
Wheat	MT	SAS	16,656	18,322	20,154	22,169	24,386	26,825
Irish Potatoes	MT	SAS	781,032	952,518	1,047,341	1,144,425	1,305,360	1,498,545
Cassava	MT	SAS	1,345,379	1,441,644	1,513,683	1,567,734	1,611,554	1,653,924
Beans (Bush and Climbing)	MT	SAS	441,406	482,480	522,408	565,009	609,472	662,115
Soybeans	MT	SAS	29,059	43,817	48,199	53,019	58,320	64,152
Sweet Potatoes	MT	SAS	1,321,080	1,350,383	1,551,398	1,622,870	1,654,891	1,669,632
Cooking Banana	MT	SAS	1,049,838	1,124,865	1,199,892	1,274,919	1,349,946	1,424,973
Peas	MT	SAS	12,117	13,329	30,412	31,193	31,992	32,807
<b>Vegetables</b>								
Onions	MT	SAS	14,050	15,174	16,388	17,699	19,115	20,644
Cabbage	MT	SAS	31,214	33,711	36,408	39,321	42,466	45,864
Carrot	MT	SAS	24,147	26,079	28,165	30,418	32,852	35,480
Egg plant	MT	SAS	49,745	53,725	58,023	62,664	67,678	73,092
Garlic	MT	SAS	2,798	3,022	3,264	3,525	3,807	4,111
French beans	MT	SAS	1,700	4,268	4,742	5,269	5,855	6,505

Pepper	MT	SAS	6,945	17,203	22,937	25,486	28,318	31,464
Fruits								
Tree tomato	MT	SAS	3,383	3,654	3,946	4,262	4,603	4,971
Pineapple	MT	SAS	12,399	13,391	14,462	15,619	16,869	18,218
Avocado	MT	SAS	1,293	6,151	7,485	9,264	11,673	14,975
Passion fruit	MT	SAS	2,523	3,923	4,322	4,762	5,247	5,783
Mango	MT	SAS	1,111	1,200	1,296	1,400	1,512	1,632
Productivity for the priority food crops								
Maize	MT/Ha	SAS	1.7	1.87	2.06	2.26	2.49	2.74
Irish Potato	MT/Ha	SAS	8.2	9.2	10.1	11.4	13.1	14.7
Rice	MT/Ha	SAS	4.0	4.3	4.5	4.8	5.1	5.4
Wheat	MT/Ha	SAS	1.2	1.29	1.3	1.32	1.34	1.35
Beans	MT/Ha	SAS	0.6	0.8	0.9	1	1.1	1.1
Soybean	MT/Ha	SAS	0.4	0.8	0.9	1	1.1	1.2
Cassava	MT/Ha	SAS	13.5	15	15.7	16.5	17.2	17.9
Cooking banana	MT/ha	SAS	14.2	16.3	17.1	17.9	18.8	19.7
<b>Output 1.1.1. Agricultural land management and production models improved</b>								
Agriculture land use master plan	Number (report)	MINAGRI Reports			1			
Area under Food Basket Sites	Ha	MINAGRI Reports	-	45,000	81,175	146,115	227,291	324,702
Area under Agri-Hubs	Ha (cumulative)	MINAGRI Reports	-	1,008	4,032	5,600	-	-
Farmers supported for household's resilience	Percent	MINAGRI Reports	31	51	56	60	64	69
<b>Output 1.1.3. Urban and peri-urban farming promoted</b>								
Technologies demonstrated in the horticulture of centre of excellences	Number	MINAGRI Reports	10	12	14	16	18	20
<b>Output 1.1.4. Climate-smart agriculture practices improved</b>								
Area under Agro-forestry	Ha	MINAGRI Reports	13,569	17,640	22,932	29,811	38,754	50,381
Area under Radical terraces (Cumulative)	Ha	MINAGRI Reports	142,318	146,518	150,768	155,768	161,268	167,268
Area under Progressive terraces (Cumulative)	Ha	MINAGRI Reports	1,032,282	1,044,282	1,057,282	1,071,282	1,086,282	1,102,282
Area under Shrubs/savannah restoration	Ha	MINAGRI Reports	20,656	27,418	34,180	40,943	47,705	54,467
Area under Conservation Agriculture	Ha	MINAGRI Reports		1,173	2,000	3,500	5,000	10,000
Area under Greenhouses	Ha	MINAGRI Reports	55	55	66	79	95	114
Area under banana/coffee multi-cropping	Ha	MINAGRI Reports		15,000	25,000	30,000	35,000	40,000
Farmers accessing weather information	Percent	MINAGRI Reports		20	30	45	55	65

<b>Output 1.1.5. Irrigation and water resource management improved</b>								
Total area under irrigation (Cumulative)	Ha	MINAGRI Reports	71,585	76,686	85,769	101,884	118,229	132,171
a) Marshland	Ha	MINAGRI Reports	37,273	37,573	37,873	39,311	40,311	42,473
b) Hillside irrigation	Ha	MINAGRI Reports	9,439	13,640	17,490	27,275	39,735	48,667
c) Small-Scale Irrigation Technology	Ha	MINAGRI Reports	24,873	25,473	30,406	35,298	38,183	41,031
Existing irrigated schemes maintained and rehabilitated	Ha	MINAGRI Reports	0	3,000	6,000	9,000	12,000	15,000
IWUOs operational	Number	MINAGRI Reports	118	25	30	40	50	55
<b>Output 1.1.6. Access to agricultural inputs for climate-resilient production improved</b>								
Farm services centres established	Number	MINAGRI Annual Report		6	8	10	15	20
Farmers using improved seeds (Large scale)	Percent	NIST, Seasonal Agriculture Survey	85.7	90.0	92.0	94.0	95.0	100
Farmers using improved seeds (Small scale)	Percent	NIST, Seasonal Agriculture Survey	35.9	40	45	47	48	50
Improved quality seeds used (per crop type)	MT	MINAGRI Reports	7,575.6	7,954	8,351	8,769	9,207	9,668
Farmers using climate resilient seed varieties	Percent	MINAGRI Reports	33	36	40	44	48	53
Inorganic fertilizers used	MT	MINAGRI Report	96,372.9	101,191	106,250	111,563	117,141	132,440
Inorganic fertilizers application per ha	Kg/ha	MINAGRI Report	70.3	72.2	75.8	79.6	83.6	94.6
Lime used	MT	NIST, Seasonal Agriculture Survey	14,226.5	15,649	17,213	18,935	20,828	22,911
Farmers using inorganic fertilizer (Large scale)	Percent	NIST, Seasonal Agriculture Survey	86	90	92.5	93	94.5	95
Farmers using inorganic fertilizer (Small scale)	Percent	NIST, Seasonal Agriculture Survey	54.9	57.5	60.3	62.8	64.5	66.5
Bio-fertilizers produced	MT	MINAGRI Reports	0	2,000	2500	3000	3500	4500
<b>Output 1.1.7: Plant Health Management enhanced</b>								
Pest/disease surveillance conducted	Numbers done each year	MINAGRI Report		2	2	2	2	2
Farmers using pest and disease surveillance tools	Percent	MINAGRI Report		10%	20%	30%	40%	50%
Farmers (male and female) using IPM practices	Percent	MINAGRI Report		10%	20%	30%	40%	50%

<b>Output 1.1.8. Mechanization and labour-saving technologies promoted</b>								
Operational Mech- anization Centre of excellence	Number	MINAGRI Report	0	0	1	1	1	1
Agriculture land un- der mechanisation	Ha	MINAGRI Report	81,711	84,000	90,000	92,000	95,000	100,000
<b>OUTCOME 1.2: MODERNIZED ANIMAL RESOURCES PRODUCTION AND PRODUCTIVITY</b>								
Milk	MT	MINAGRI Report	1,061,301	1,114,366	1,167,431	1,220,496	1,273,561	1,323,561
Meat	MT	MINAGRI Report	197,778	207,667	217,556	227,445	237,334	247,223
Beef	MT	MINAGRI Report	66,268	72,957	76,431	79,905	83,379	86,853
Goat meat	MT	MINAGRI Report	34,853	34,903	36,565	38,227	39,889	41,551
Sheep meat	MT	MINAGRI Report	8,818	9,708	10,170	10,633	11,095	11,557
Poultry meat	MT	MINAGRI Report	53,319	55,398	58,036	60,674	63,312	65,950
Pork meat	MT	MINAGRI Report	25,839	25,144	26,342	27,539	28,736	29,934
Rabbit meat	MT	MINAGRI Report	8,681	9,557	10,012	10,467	10,923	11,378
Honey	MT	MINAGRI Report	7,250	8,315	10,495	12,675	14,855	17,035
Eggs	MT	MINAGRI Report	20,211	29,855	34,484	44,945	49,812	51,680
Fish	MT	MINAGRI Report	46,495	54,000	59,000	64,500	71,000	77,700
of which from fisheries	MT	MINAGRI Report	39,000	41,000	41,000	41,500	42,000	42,700
of which from aquaculture	MT	MINAGRI Report	7,495	13,000	18,000	23,000	29,000	35,000
<b>Output 1.2.1. Animal husbandry and infrastructure in animal hubs improved</b>								
Animal resources production hubs (meat, dairy, eggs & fish)	Number (cumula- tive)	MINAGRI Report	30	35	40	43	45	50
Boreholes con- structed								
(including solar powered)	Number	MINAGRI Report	49	20	25	25	25	30
Valley dams reha- bilitated	Number	MINAGRI Report	25	5	5	5	5	5
Livestock sheds constructed	Number	MINAGRI Report		2,200	2,300	2,300	2,300	2,300
<b>Output 1.2.2. Sustainable animal breeding established</b>								
Functional centre of excellence for animal genetics	Number	MINAGRI report	0	0	1	1	1	1
Animal breeding centres operational	Number	MINAGRI report	15	18	21	23	24	24
Certified poultry hatcheries estab- lished	Number	MINAGRI report	5	5	5	6	6	7
Certified breeders (cattle, pig, rabbit)	Number	MINAGRI report	0	207	508	810	1,111	1,413
Liquid Nitrogen plants operational	Number	MINAGRI report	2	2	3	3	4	5
Queen-rearing centres for bees established	Number	MINAGRI report	0	0	1	2	3	4

Skilled Technicians in bovine artificial Insemination technique and embryo transfer trained (disaggregated by Gender/age)	Number	MINAGRI report	900	950	1,000	1,050	1,100	1,050
Cows inseminated	Number	MINAGRI report	109,209	115,277	130,313	147,311	166,525	188,245
Pigs artificially inseminated	Number	MINAGRI report	19,860	21,846	24,031	26,434	29,077	31,985
Skilled technicians in Pig Artificial Insemination trained (disaggregated by Gender/age)	Number	MINAGRI report	800	850	900	950	1,000	1,050
<b>Output 1.2.3. Access to animal feed improved</b>								
Area planted with improved forages (including climate resilient forage seeds)	Ha	MINAGRI report	11,718	12,000	12,500	13,000	14,000	15,300
Support forage seed multipliers (including climate smart seed varieties)	Number	MINAGRI report	96	126	156	186	216	246
Access to Machinery used in fodder harvesting and processing	Number	MINAGRI report	13	50	100	150	200	250
Local animal feeds production	MT	MINAGRI report	77,023	89,481	103,955	120,770	140,305	163,00
<b>Output 1.2.4. Animal health systems strengthened</b>								
National epidemic-surveillance report produced	Number	MINAGRI report	2	2	2	2	2	2
Veterinary clinics established	Number	MINAGRI report	16	96	176	256	336	416
Private Veterinary Officers (Doctors) involved in the implementation of Veterinary Sanitary Mandate	Number	MINAGRI report	522	677	696	716	736	755
Private Veterinary Officers (Technicians) involved in the implementation of Veterinary Sanitary Mandate	Number	MINAGRI report	3,804	13,539	13,927	14,318	14,712	15,109
Cattle vaccinated	Number	MINAGRI report	986,815	999,150	1,006,552	1,021,354	1,031,222	1,088,245
Goats vaccinated	Number	MINAGRI report	997,818	1,415,223	1,824,757	2,085,436	2,085,436	2,215,776
Sheep vaccinated	Number	MINAGRI report	220,107	337,926	442,224	505,398	505,398	536,986
Pigs vaccinated	Number	MINAGRI report	250,000	727,752	808,614	875,998	1,145,536	1,583,535
Rabbits vaccinated	Number	MINAGRI report	-	38,650	85,225	271,799	376,980	483,587
Poultry vaccinated	Number	MINAGRI report	6,000,000	3,174,788	3,999,632	4,899,549	5,881,059	6,565,307
Cattle registered	Percent	MINAGRI report		80	85	90	100	100
Pigs registered	Percent	MINAGRI report		50	60	70	80	90

Output 1.2.5. Fisheries and aquaculture developed								
National Aquaculture Research Centre operationalized	Number	MINAGRI report			1	1	1	1
Aquaparks operational	Number	MINAGRI report		10	20	30	40	50
Fingerlings produced for aquaculture	Number	MINAGRI report	16,000,000	20,000,000	26,000,000	36,000,000	46,000,000	58,000,000
Fish Hatchery constructed through private investment	Number	MINAGRI report	13	14	15	16	17	18
Output 1.2.6: Beekeeping developed								
Appropriate reserves for beekeeping established	Number	MINAGRI report	2	1	1	1	1	1
Commercial apiary (beekeeping) farms promoted	Number	MINAGRI report		2	2	2	2	2
PRIORITY AREA II: INCLUSIVE MARKETS AND POST-HARVEST MANAGEMENT FOR SUSTAINABLE AGRI-FOOD SYSTEMS								
OUTCOME 2.1: BOOSTED AGRICULTURE EXPORTS								
Export revenues increased								
1. Coffee	USD dollars	MINAGRI report	78,712,092	85,009,059	91,809,784	99,154,567	107,086,932	115,563,887
2. Tea	USD dollars	MINAGRI report	107,768,322	119,106,935	130,445,548	141,784,161	153,122,774	164,461,387
3. Pyrethrum and Essential Oil								
(a) Pyrethrum	USD dollars	MINAGRI report	8,063,749	8,547,574	9,060,428	9,604,054	10,1801,897	10,791,115
(b) Essential oils	USD dollars	MINAGRI report	3,007,087	3,037,158	3,340,873	3,674,961	4,042,457	4,446,703
4. Fruits								
(a) Avocado	USD dollars	MINAGRI report	6,342,472	7,666,879	8,991,286	10,315,693	11,640,099	12,964,506
(b) Passion Fruits	USD dollars	MINAGRI report	245,712	422,828	465,110	511,621	562,784	619,062
5. Vegetables								
(a) Chili	USD dollars	MINAGRI report	6,080,949	11,689,040	16,651,364	23,720,333	33,790,276	48,135,192
(b) French beans	USD dollars	MINAGRI report	2,850,684	3,935,725	4,624,477	5,433,760	6,384,668	7,501,985
Flowers	USD dollars	MINAGRI report	2,163,055	2,594,666	3,114,799	3,738,759	4,485,311	5,382,373
6. Animal and live-stock products								
(a) Eggs	USD dollars	MINAGRI report	2,205,544	13,648,990	25,092,436	36,535,882	47,979,329	59,422,775
(b) Fish	USD dollars	MINAGRI report	46,653,031	117,617,771	188,582,511	259,547,251	330,511,992	401,476,732
(c) Dairy products	USD dollars	MINAGRI report	12,921,346	28,265,621	43,609,895	58,954,170	74,298,445	89,642,719
Output 2.1.1: Export crops expanded								
Area under Export crops								
Coffee	Ha	MINAGRI report	42,229	42,729	43,229	43,729	44,229	44,729
Tea	Ha	MINAGRI report	31,498	33,165	34,832	36,499	38,166	39,833

Pyrethrum	Ha	MINAGRI report	3,070	3,225	3,380	3,525	3,680	3,845
Essential oils	Ha	MINAGRI report	66	388	711	1,033	1,355	1,678
French beans	Ha	MINAGRI report	149	164	180	198	218	240
Chili	Ha	MINAGRI report	533	760	1,082	1,542	2,196	3,129
Avocado	Ha	MINAGRI report	517	540	619	707	794	881
Passion fruit	Ha	MINAGRI report	34	35	39	43	47	52
Macadamia	Ha	MINAGRI report	605	659	707	791	844	933
Flowers	Ha	MINAGRI report	65	78	87	95	104	113
<b>Export crops production</b>								
Coffee	MT	MINAGRI Report	20,046.9	21,386.9	23,328	25,920	28,800	32,000
Tea	MT	MINAGRI Report	39,008.9	41,500	42,719	47,466	52,740	58,600
Pyrethrum	MT	MINAGRI Report	35	38	41	45	50	55
Vegetables	MT	MINAGRI Report	51,689	67,197	87,356	113,563	147,632	191,921
Fruits	MT	MINAGRI Report	21,953	26,344	31,612	37,935	45,522	54,626
Flowers	MT	MINAGRI Report	413	508	625	769	945	1,163
<b>Output 2.1.2: Rwandan agri-exports de-commoditized</b>								
Tea sold under direct agreement	Percent	MINAGRI report	24%	26%	30%	35%	40%	45%
Supply agreements in high-value markets for priority commodities	Number	MINAGRI report	2	5	5	5	5	5
Agri-exports facilities for value-addition and diversification	Number	MINAGRI report		1	3	3	2	1
<b>OUTCOME 2.2: STRENGTHENED MARKET LINKAGES AND POST-HARVEST INFRASTRUCTURES</b>								
Employed population in market-oriented agriculture (gender and age disaggregated)	Percent	Labour Force Survey	43.5%	45%	50%	55%	60%	70%
Household reporting active membership of a cooperative	Percent	Agriculture Household Survey	13% (2020)	15%	17%	19%	21%	23%
Food crop gross value added sold	Percent	Seasonal Agriculture Survey	35%	38%	41%	44%	47%	50%
Reduction of post-harvest losses in priority staple crops	Percent	MINAGRI report	13.8%	12%	11%	10%	9%	8%
Annual growth in agro-processing gross value added	Percent	NISR, National Accounts	8.8%	10%	10%	10%	10%	10%
<b>Output 2.2.1: Organisation models of farmers and value chain actors improved</b>								
Cooperatives supported in AgriHubs	Number	MINAGRI report	30	30	60	80	80	80

Women or youth-led cooperatives supported	Number	MINAGRI report	15	15	30	40	40	40
<b>Output 2.2.2: Post-harvest handling for reduced losses improved</b>								
Food crop storage facilities constructed (silos and warehouses)	Number (Cumulative)	MINAGRI report	530	535	540	545	550	555
Animal feeds factories constructed (including fish feeds industry)	Number	MINAGRI report	13		2	1	1	1
Cold storage facilities established and upgraded (Cumulative)	Number	MINAGRI report	90	95	100	105	110	120
New MCCs constructed and operationalized (Cumulative)	Number	MINAGRI report	134	136	154	188	191	193
New MCPs constructed and operationalized (Cumulative)	Number	MINAGRI report	150	154	186	222	226	230
Landing sites (Fish)	Number	MINAGRI report	1	5	5	5	3	3
Fish Drying flakes (small fish)	Number	MINAGRI report	4	4	4	3	3	1
Smoking areas (fish)		MINAGRI report	27	1		1		1
Mobile dryers for cereals (cumulative)	Number	MINAGRI report	48	56	76	96	116	141
Drying shelters (Maize and beans) (cumulative)	Number	MINAGRI report	944	969	1,024	1,089	1,149	1,199
Drying grounds (Rice and wheat) (Cumulative)	Number	MINAGRI report	585	595	635	687	735	765
Collection centres (Irish potato, cassava, vegetables, honey and eggs etc.) (cumulative)	Number	MINAGRI report	148	160	165	170	175	180
<b>Output 2.2.3: Agriculture commodity safety and quality Increased</b>								
Testing facilities for safety and quality parameters upgraded	Number	MINAGRI report	0	1		2		1
Traceability system established	Number	MINAGRI report	0		1			
<b>Output 2.2.4: Value addition increased</b>								
Value addition facilities supported	Number	MINAGRI report	10	26	31	36	36	41
<b>Output 2.2.5: Trade infrastructures improved</b>								
Wholesale markets established (Kigali Wholesale Market) established	Number	MINAGRI report	0			1		
Animal and Livestock markets operational	Number	MINAGRI report	10	11	12	13	14	15
Need Assessments for infrastructures (e.g. feeder roads, electricity, water)	Number	MINAGRI report		1	1	1	1	1

<b>OUTCOME 2.3: IMPROVED FOOD SECURITY AND NUTRITION</b>								
Average household dietary diversity score	Score	CFSVA	5.5 (2021)	6.0	6.5	7.0	7.5	8.0
Animal products consumption per capita								
a. Meat	Kg/Person/Year	MINAGRI Report	14.2	15.6	17.2	18.9	20.8	22.9
b. Milk	l/person/year	MINAGRI Report	78.0	85.8	94.4	103.8	114.2	125.6
c. Fish	Kg/Person/Year	MINAGRI Report	4.0	4.4	4.8	5.3	5.9	6.4
d. Eggs	Kg/Person/Year	MINAGRI Report	1.4	1.5	1.7	1.9	2.0	2.3
<b>Output 2.3.1: Food security and nutrition improved</b>								
Biofortified seeds produced (per crop type)								
a. Beans	MT	MINAGRI Report	3,000	3,500	4,000	4,500	5,000	5,500
b. sweet potato	Cuttings	MINAGRI Report		3,000	3,000	3,000	3,000	3,000
c. Cassava	Cuttings	MINAGRI Report		4,000	4,000	4,000	4,000	4,000
e. Potato	MT	MINAGRI Report		5,000	5,500	6,000	6,500	7,000
Household with kitchen garden	Percent	MINAGRI Report	36%	36%	40%	42%	44%	46%
Schools with school garden	Percent	MINAGRI Report	69%	70%	75%	80%	85%	90%
Traceability system of fortified agricultural products	Number	MINAGRI Report				1		
National dietary guidelines and nutrition sensitive agriculture guidelines disseminated through campaigns	Number							
(Campaign per year)	MINAGRI Report	2	2	2	2	2	2	
<b>Output 2.3.2: Households supported in Animal resources production and Nutrition-Sensitive crop production (at least 30% distributed to women headed households)</b>								
Cows in the Girinka program distributed	Cows	MINAGRI Report	467,898	25,000	28,000	30,000	33,000	35,000
Vegetable seeds for kitchen garden distributed	MT	MINAGRI Report		1	1	1	1	1
Goats' distributed	Number	MINAGRI Report	3,416	18,630	20,436	22,500	25,785	30,890
Pigs' distributed	Number	MINAGRI Report	2,662	12,500	14,680	17,320	18,500	20,700
Sheep distributed	Number	MINAGRI Report	2,687	7,425	9,800	11,908	13,769	15,740
Fruits trees distributed	Number	MINAGRI Report	440,000	580,000	730,000	930,000	1,150,000	1,400,000
Rabbit distributed	Number	MINAGRI Report		1,500	2,000	3,000	4,000	5,000
Poultry distributed	Number	MINAGRI Report	94,643	143,720	145,600	147,890	150,000	160,000
<b>Output 2.3.3: Food stability and mitigating related shocks ensured</b>								
Private-Led Commodity Reserves Strengthened	Operational	MINAGRI Report	0	1	1	1	1	1

Food Monitoring and Price Projection Reports produced	Reports	MINAGRI Report	0	4	4	4	4	4
Quantity of grains stored as strategic reserves	MT	MINAGRI Report	25,312	31,678	32,150	35,000	37,500	43,000
Maize	MT	MINAGRI Report	15,478.7	16,478	16,000	17,500	18,500	20,000
Beans	MT	MINAGRI Report	9,832.8	11,200	11,500	12,000	12,500	15,000
Rice	MT	MINAGRI Report	0	2,500	3,000	3,500	4,000	5,000
Soya	MT	MINAGRI Report	0	1,500	1,650	2,000	2,500	3,000
National storage capacity of food crops (cumulative)	MT	MINAGRI Report	318,025	330,025	345,025	365,025	390,025	420,025
Grain storage capacity (silos) for animal feeds	MT	MINAGRI Report	0	15,000	20,000	25,000	30,000	35,000
<b>PRIORITY AREA III: STRENGTHENING AGRI-FOOD SYSTEMS ENABLERS FOR EFFECTIVE AND EFFICIENT DELIVERY</b>								
<b>OUTCOME 3.1: STRENGTHENED RESEARCH AND TECHNOLOGY TRANSFER FOR AGRI-FOOD SYSTEMS TRANSFORMATION</b>								
Farmers adoption rate of modern and climate resilient agricultural practices	Percent	MINAGRI Report				50%		70%
Farmers (male & female) accessing extension (including climate smart) services through the CAES	Number	MINAGRI Report	1,300,000	1,951,311	2,087,902	2,234,055	2,390,439	2,557,770
Coverage of agricultural								
extension services	Percent	MINAGRI Report	35	51	56	60	64	69
<b>Output 3.1.1: Demand-driven research enhanced</b>								
New market-driven animal breeds introduced	Number	MINAGRI Report		5	9	10	11	11
Crop varieties developed (climate resilient, disease resistant) total for all crops	Number	MINAGRI Report	77	19	5	24	9	13
Research stations (laboratory, equipment) upgraded	Number	MINAGRI Report	0	2	2	2	2	2
Green houses facilities established	Number	MINAGRI Report	29	2	2	2	2	2
Crop Suitability Maps developed	Number	MINAGRI Report	1	0	1	0	1	0
Biotechnology products (genetically modified products), protocols and laws developed.	Number	MINAGRI Report	0	0	1	1	1	1
Plant genetic resources conserved	Number	MINAGRI Report	1,642	230	230	230	230	230
Forage genetic resources conserved	Number	MINAGRI Report	146	20	20	20	20	20
Local animal genetic resources characterized and conserved	Number	MINAGRI Report	404	60	60	60	60	60

Post-harvest technologies developed	Number	MINAGRI Report	TBD	1	1	2	1	1
<b>Output 3.1.2: Customised agriculture extension system enhanced</b>								
Master trainers trained on specific value chain and their segments	Number	MINAGRI Report	250	250	250	250	250	250
Extension agents (such as FFS facilitators, FPs) trained on the delivery of new extension packages and facilitated (disaggregated by gender/age)	Number	MINAGRI Report	16,654	17,000	17,000	17,500	18,500	21,620
L-FFS groups established by L-FFS Facilitators	Number	MINAGRI Report	400	600	600	600	600	600
FFS of fish farmers established	Number	MINAGRI Report	30	30	30	30	30	30
Market actors trained in aquaculture and fisheries	Number	MINAGRI Report	100	100	100	100	100	100
<b>Output 3.1.3: Technical capacity, education, and skills developed</b>								
Youth and professional farmers trained on technical courses by education institutions and other relevant specialised institutions	Number (cumulative)	MINEDUC report	250	450	650	850	1,050	1,250
Long term training in Agri-food systems provided	Number	MINEDUC report		8	8	8	8	8
On-job specialised and professional short courses in the Agri-food systems provided	Number	MINAGRI report		50	50	50	50	50
<b>OUTCOME 3.2: STRENGTHENED AGRICULTURE DE-RISKING FOR RESILIENCE</b>								
Credit to agriculture sector as percentage of total loans	Percent	BNR, Monetary Statements	6	6	7	8	9	10
Farmers accessing credit from banks or other formal financial services providers/sources (gender and age disaggregated data)	Percent	NISR, Fin-scope	16% (2021)	16%	19%	22%	27%	32%
Crop farmers with agriculture insurance	Percent	NISR, Agriculture Household Survey	1% (2020)	5.7%	6.0%	6.2%	6.5%	6.8%
Animal farmers with agriculture insurance	Percent	NISR, Agriculture Household Survey	1% (2020)	1.5%	1.7%	1.8%	1.9%	2.1%
<b>Output 3.2.1: Access to agriculture finance increased</b>								
De-risking facility established and operationalized	Number	MINAGRI reports	1	1	1	1	1	1

<b>Output 3.2.2: Agriculture insurance scheme strengthened</b>								
Guidelines for insurance products developed and operationalize	Number	MINAGRI Report	1	1	1	1	1	1
Crop insured								
Rice	Ha	MINAGRI Report	23,696	23,826	23,926	24,026	24,126	24,226
Maize	Ha	MINAGRI Report	7,932.37					
	9,519	11,105	12,692	14,278	15,865			
Irish Potatoes	Ha	MINAGRI Report	1075.6					
	2,662	4,249	5,835	7,421	9,008			
Soya bean	Ha	MINAGRI Report	222.6					
	1,809	3,396	4,982	6,568	8,155			
Beans	Ha	MINAGRI Report	215.4					
	1,802	3,388	4,975	6,561	8,148			
Cassava	Ha	MINAGRI Report	0	1,586	3,173	4,759	6,346	7,932
Chili	Ha	MINAGRI Report	102.27					
	340	578	816	1,054	1,292			
French beans	Ha	MINAGRI Report	25.	263	501	739	977	1,215
Livestock Insured								
Cattle	Number	MINAGRI Report	48,962	49,962	51,462	53,462	55,962	58,962
Pig	Number	MINAGRI Report	7,300	27,300	52,300	82,300	117,300	157,300
Poultry	Number	MINAGRI Report	274,506	294,506	324,506	364,506	414,506	474,506
Fishponds/farms	Number	MINAGRI Report	800	5,200	9,900	16,100	24,650	35,000
Rabbits access to insurance scheme	Number	MINAGRI Report	196,846	426,499	541,326	629,907	1,104,634	1,189,606
Professionals (public & Private) trained on agriculture insurance	Number	MINAGRI Report		4,054	4,729	5,405	6,080	6,756
<b>OUTCOME 3.3: DIGITISED AGRI-FOOD SYSTEMS</b>								
Farmers with access to a cell phone	Percent	Finscope report	85% (2021)	87%	89%	91%	93%	95%
Farmers using mobile payment	Percent	Finscope report	55%	60%	63%	66%	69%	72%
<b>Output 3.3.1: Affordable digital technologies developed</b>								
Farmers supported to own or use devices though telco collaboration	Number	MINAGRI report		50,000	100,000	200,000	300,000	500,000
Farmers registered in AMIS	Number	MINAGRI report		100,000	500,000	700,000	700,000	700,000

<b>Output 3.3.2: Data governance enhanced</b>								
Data strategy and governance framework in place and operationalized	Number (framework)	MINAGRI report		1	1	1	1	1
Relevant data stored in the expanded and incentivized data collection network	Percent	MINAGRI report		10%	20%	30%	40%	50%
<b>Output 3.3.3: Digital innovation in agriculture value chains promoted</b>								
Agri-tech services supported	Number	MINAGRI report		5	10	10	20	30
<b>Output 3.3.4: Digital competencies developed</b>								
Farmers trained in digital literacy or using specific services	Number	MINAGRI report		20,000	50,000	100,000	2,000,000	3,000,000
<b>Output 3.3.5: Sustainable business models for digital systems and platforms developed</b>								
Investors for digital platforms mobilised	Number	MINAGRI report		1	2	4	6	8
<b>Output 3.3.6: Digitalization networking strengthened</b>								
Digital taskforce in place and operationalized	Number	MINAGRI report		1	1	1	1	1
<b>OUTCOME 3.4: STRENGTHENED AGRI-FOOD SYSTEMS PLANNING AND COORDINATION</b>								
Budget execution rate	Percent	MINAGRI Report	90%	100%	100%	100%	100%	100%
Foreign Direct Investment in Agriculture and agro-processing	USD million	MINAGRI Report	23.2	30	50	70	100	150
Enabling the Business of Agriculture score	Score	World bank	41.43	43	47	50	55	60
<b>Output 3.4.1: Capacity for planning and knowledge management enhanced</b>								
Professional short course training	Number							
Programmes designed and funded	Number	MINAGRI report		6	2	2	2	2
Innovative and impactful Projects designed under PSTA 5	Number (Projects)	MINAGRI report	30	35	35	35	40	40
<b>Output 3.4.2: Agri-food systems coordination and value chains developed</b>								
Business plans for value chain development packaged for entrepreneurs	Number	MINAGRI Report		8	8	8	8	8
Public private partnerships in agro-processing/ food systems support functions operational (inputs, feed, packaging, biofortified products etc.)	Number	MINAGRI Report	2	3	4	5	6	7
Values chain-based platforms established and operationalized	Number	MINAGRI Report	7	8	10	12	15	15
Food commodity board established	Number	MINAGRI Report			1			

**Output 3.4.3: Policy and regulatory reform for an enabling environment reviewed**

Coordination meetings (Agriculture Sector and Sub-Sector Working Group Meetings)	Number	MINAGRI Report	4	12	12	12	12	12
Join sector review meeting	Number	MINAGRI Report	2	2	2	2	2	2
Policy and Regulatory Reforms	Regulations/report	MINAGRI Report		2	2	2	2	2
Technical regulation framework developed for agricultural products safety and quality	Number				1			

**Output 3.4.4: Institutional reforms for effective implementation enhanced**

Institutional reform for PSTA 5 implementation conducted	Number	MINAGRI Report			1			
National CAES Secretariat established	Number	MINAGRI Report		1				
Rwanda Forum for Agricultural extension and Advisory Service professionals Established	Number	MINAGRI Report			3	3	3	3
Food Systems Secretariat	Number	MINAGRI Report		1	1	1	1	1