

REPUBLIC OF RWANDA



# National Agriculture Policy

**JULY 2018**

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## Acronyms and Abbreviations

<b>ASWG</b>	Agriculture Sector Working Group
<b>CAADP</b>	Comprehensive African Agriculture Development Programme
<b>CGIAR</b>	Consortium of International Agricultural Research Centres
<b>CIP</b>	Crop Intensification Programme
<b>COMESA</b>	Common Market for Eastern and Southern Africa
<b>EDPRS</b>	Economic Development and Poverty Reduction Strategy
<b>EICV</b>	Integrated Household Living Conditions Survey
<b>EAC</b>	East African Community
<b>E-Soko</b>	Access market's information through ICT tools
<b>GDP</b>	Gross Domestic Product
<b>GoR</b>	Government of Rwanda
<b>ISFM</b>	Integrated Soil and Fertility Management
<b>IWRM</b>	Integrated Water Resources Management
<b>MINAGRI</b>	Ministry of Agriculture and Animal Resources
<b>MININFRA</b>	Ministry of Infrastructure
<b>MINEDUC</b>	Ministry of Education
<b>MINIRENA</b>	Ministry of Natural Resources
<b>MINALOC</b>	Ministry of Local Government
<b>MIDIMAR</b>	Ministry of Disaster Management and Refugee affairs
<b>MSME</b>	Micro, Small and Medium Enterprises
<b>MyICT</b>	Ministry of Youth and Information Technologies
<b>NAP</b>	National Agriculture Policy
<b>NGO</b>	Non- Government Organisation
<b>NST</b>	National Strategy for Transformation
<b>PPP</b>	Public Private Partnership
<b>PSDS</b>	Private Sector Development Strategy
<b>PSTA</b>	Plan Strategic pour la Transformation de l'Agriculture
<b>SACCO</b>	Savings and Credit Cooperative Organisation
<b>SAS</b>	Seasonal Agriculture Survey
<b>SDGs</b>	Sustainable Development Goals
<b>SPS</b>	Sanitary and Phytosanitary standards
<b>TVET</b>	Technical and Vocation Education and Training

## Executive Summary

The vision of the National Agricultural Policy is for Rwanda to become “a nation that enjoys food security, nutritional health and sustainable agricultural growth from a productive, green and market-led agricultural sector.” The mission is to ensure food and nutrition security, modern agribusiness technologies professionalizing farmers in terms of production, commercialisation of the outputs and the creation of a competitive agriculture sector. The policy objectives are formulated according to the Malabo Declaration (2014) under the CAADP framework of the AU: 1) Increased contribution to wealth creation, 2) economic opportunities and prosperity, 3) improved food security and nutrition, and 4) increased resilience and sustainability.

Rwanda is on a transformation path from a low-income to a middle-income country. Between 2000 and 2016, Rwanda’s economy grew by 7.9 per cent per year on average, so that by 2016 it was more than 3.5 times larger than in 2000<sup>1</sup>. In the same period, GDP per capita increased, the poverty rate<sup>2</sup> fell, life expectancy at birth has increased<sup>3</sup>, and youth literacy increased. In this bigger picture, the agricultural sector constitutes just over a third of the economy<sup>4</sup>, it accounts for just under half of goods exports<sup>5</sup> and provides employment for over two thirds of the working population<sup>6</sup>. Hence, it remains the backbone for sustained economic growth, to provide quality livelihoods, and high living standards for the population.

The agricultural sector has been growing by over 5% per year since the turn of the century. However, since a growth spurt between 2008-2012, growth has decelerated in recent years. The main cause for this is stagnating crop yield gains. Livestock has seen accelerating growth over the past few years, but not sufficiently to accelerate the overall agricultural growth.

Despite the growth in agricultural production, food security and nutrition remain concerns, especially when looking at the vulnerability to shocks at the household level. Current food energy production stands at about 1950 kcal/person/day against a defined poverty line of 2500 kcal/person/day<sup>7</sup>. While stunting and undernourishment have been reducing, the childhood stunting rate remains at 38%, which is high by international comparison.

A situational analysis reveals that strong demographic and natural forces are at work to undermine the national objectives of improved livelihoods and food security. Rapid population growth causes a constant need to increase food production while it is encroaching on agricultural land and accelerating land-fragmentation. Hence, the pressure on the already scarce land resources is mounting. Furthermore, the adverse effects of climate change and soil erosion are unrelentingly deteriorating the quality of agricultural land. Meanwhile, the domestic, regional, and international markets are growing rapidly. This opens opportunities for exports and selling higher value products. However, there will be an increasing pressure for products to be commercially viable with increasing competition domestically and abroad.

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1 NISR, National Accounts (2016)

2 The NISR Rwanda Poverty Profile Report (2015) based on EIVC 4 data defines the poverty rate as the share of the population whose total consumption is below the total poverty line (RWF 159,375 in January 2014 prices of which RWF 105,034 is for food items). Poverty is defined as the share of the population that cannot afford to buy a basic basket of goods (food and Non-food).

3 World Bank Indicators: [http://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=RW&name\\_desc=true](http://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=RW&name_desc=true)

4 NISR, National Accounts (2016)

5 PSTA4

6 NISR, EICV 1-4

7 NISR, EICV 4, Poverty Profile Report

All these factors call for a decisive policy agenda to mitigate the current and future strains on agriculture and position Rwanda to be food and nutrition secure as well as a supplier of high quality agriculture products. The NAP formulates a policy agenda of specific policy actions to achieve the stated objectives. The policy actions are organised 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.

**Pillar 1: Enabling Environment & Responsive Institutions.** Turning the agricultural sector around will require substantial investment while public finances are getting scarce. It is therefore vital to attract investments from the private sector, driving sector toward commercialisation. Greater private sector participation will require a shift in the role of the government from being a market actor to becoming a market enabler. To make this shift, the NAP presents an agenda for institutional and regulatory reforms which defines the principles of public investment, lays out a framework for attracting private investment to the agricultural sector while enhancing access to finance, and enhance responsiveness of institution

**Pillar 2: Technological Upgrading and Skills Development.** Technological upgrading is at the crux of productivity growth. This pillar presents a research agenda for closing Rwanda's agriculture technology and skills gap, thus making more people employable. To implement the agenda, the research capacity must be upgraded with an extension system that stimulates feedback mechanisms from the producers to ensure research and extension services are demand-driven. The policy emphasizes the importance of developed skills for farmers, youth and women which will help to alleviate poverty in the long run, by creating economic opportunities. These will be crucial to implement research findings through innovative new technologies and strategies, increasing resilience and sustainability.

**Pillar 3: Productivity and Sustainability.** Agricultural production must increase accordingly in order to meet socio-economic and food and nutrition security issues. The adverse effects on land resources and climate change must be countered with continued efforts to increase inputs and sustainable climate smart practices; protecting agricultural land against fragmentation, erosion, and degradation; and shifting production toward higher-value products and introducing land-saving technologies. Animal resources production has seen growth in recent years. To increase production further, sustained effort is required toward introducing improved breeds, sourcing animal feed, and fighting animal diseases. Farmers tend to be vulnerable to risk. It is therefore required to build resilience and response mechanisms against adverse events in farming communities and provide social protection for vulnerable groups.

**Pillar 4: Inclusive markets and off-farm opportunities.** Efficiently working market systems are deciding factors for consumers, producers, processors, and traders alike. This pillar promotes improved productivity and inclusiveness of agricultural market systems and increased off-farm opportunities of diversified for agricultural products for domestic, regional, and international markets. Moreover, the objective is to promote reliable access to affordable and healthy diets for the Rwandan consumer in order to meet national objectives on poverty reduction, food security, and nutrition. This will be achieved by strengthening post-harvest handling and market linkages throughout the value chain with hard and soft infrastructure; secondly, to increase awareness and access to healthy diets for the consumer; thirdly, to promote food safety and access to higher end markets with expanded access SPS and quality standards certification. Finally, to streamline value chains to exploit the growing opportunities for export diversification.

The NAP will be implemented primarily through projects formulated under the fourth Sector Strategic Plan for Agriculture (PSTA4).

## Rationale for National Agriculture Policy Update and Development

This National Agricultural policy of 2018 replaces the policy of 2004 and responds to evolving dynamics in the agricultural sector and the current policy priorities. **The updated National Agriculture Policy takes into account the current situation in areas of technological advances, the increasing role devoted to the private sector in the development, regional integration and the threat of climate change.**

Currently, it is important to have an updated National Agriculture Policy to provide adequate guidance for strategies and subsidiary policies relevant for the agricultural sector in light of the newly formulated Vision 2050 and NST 1. Vision 2050 stresses the importance of agro-processing and technology-intensive agriculture with a commercial focus under its Pillar III: Transformation for Prosperity. The NST1 seeks, under its economic transformation pillar, to increase crop and livestock quality, productivity, and production by modernizing agriculture and increasing resilience to climate change. Additionally, the agricultural sector will be contributing to the Social Transformation Pillar of NST1 responding to targets on poverty reduction, food security, health, and social protection.

This updated Agriculture Policy is aligned with on-going decentralisation and with key GoR economic strategies. In particular, implementation of government programmes in the agricultural sector befall in the context of the Strategy for Agriculture Transformation (PSTA). The fourth PSTA continues and accelerates changes begun under PSTA 3 to enhance productivity and profitability and encourage private investment. Other highly relevant government strategies include the Private Sector Development Strategy (PSDS)<sup>8</sup> and Green Growth and Climate Resilience Strategy<sup>9</sup>.

## International policy context

Rwanda is party to the Comprehensive African Agriculture Development Programme (CAADP) as reinforced in the 2014 Malabo Declaration<sup>10</sup> which aims to improve nutrition and food security, enhance private sector involvement, and strengthen public-private partnerships that include smallholder farmers. At the regional level, Rwanda subscribes to the East African Community's Vision 2050<sup>11</sup> which aims to enhance agricultural productivity for food security and a transformed rural economy under its pillar on Agriculture, Food Security and Rural development. The Sustainable Development Goals (SDG)<sup>12</sup> give a central place to agriculture with their focus on sustaining natural resources and on overcoming hunger, malnutrition, and food insecurity. Rwanda's commitment to combating climate change through agriculture is set out in its Nationally Determined Contributions (NDCs) under the 2015 Paris Climate Change Declaration.<sup>13</sup>

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8 [www.minicom.gov.rw/fileadmin/minicom.../Private\\_Sector\\_Development\\_Strategy.pdf](http://www.minicom.gov.rw/fileadmin/minicom.../Private_Sector_Development_Strategy.pdf)

9 <http://www.rema.gov.rw/~remagov/index.php?id=144>

10 <https://au.int/en/documents/31247/malabo-declaration-201411-26> Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods, adopted in 2014 during the 23rd Ordinary Session of the African Union Heads of State and Government, constitutes the agricultural component of the first 10 years' implementation plan of African Union 2063 Agenda. <https://au.int/en/agenda2063>

11 [www.eac.int/sites/default/files/docs/eac\\_vision\\_2050-\\_web.pdf](http://www.eac.int/sites/default/files/docs/eac_vision_2050-_web.pdf)

12 In September 2015 world leaders agreed on 17 global goals for sustainable development. These came into force 1 January 2016.

13 The multilateral agreement setting a global action plan to avoid dangerous climate change by limiting global warming below 2°C.

## Situation Analysis

### Past and Current Performance of the agricultural sector

#### National Development and the role of Agriculture

**Rwanda is on a transformation path from a low-income to a middle-income country.** Between 2000 and 2016, Rwanda's economy grew by 7.9 per cent per year on average, so that by 2016 it was more than 3.5 times larger than in 2000<sup>14</sup>. In the same period, GDP per capita increased from \$242 to \$729<sup>15</sup>, and the poverty rate<sup>16</sup> fell from 60.3 to 39.1 per cent<sup>17</sup>. Life expectancy at birth has increased from 48.2 years in 2000 to 64.5 years in 2015<sup>18</sup>, while the child mortality rate dropped from 183/1000 to 42/1000<sup>19</sup>. The youth literacy rate increased from 77 per cent in 2010 to 85 per cent in 2015<sup>20</sup>. Financial inclusion increased from 48 per cent in 2008 to 89 per cent by 2016<sup>21</sup>, while mobile phone ownership increased from 6 per cent to 65 per cent between 2006 and 2014<sup>22</sup>. Exports have seen rapid growth from a low base, with 13.2 per cent growth p.a. between 2000 and 2016, while imports grew on average by 10 per cent p.a.<sup>23</sup>, such that imports, and exports increased their combined share of the economy from 31 to 48 per cent.<sup>24</sup>

**Agriculture is a central driver for transformation toward a knowledge based, middle-income economy<sup>25</sup>.** Currently, the agricultural sector constitutes just over a third of the economy<sup>26</sup>, it accounts for just under half of goods exports<sup>27</sup> and provides employment for over two thirds of the working population<sup>28</sup>. Hence, it remains the backbone for sustained economic growth, providing livelihoods, and high standards of living for the population. The historical experience from Western Europe, the United States, and later East Asia, suggest that agricultural development was the precursor for subsequent industrial and service-based growth, generating the surplus needed to underpin the economic and human development factors leading to subsequent transformation<sup>29</sup>. It is likely that this will also be the case in Rwanda.

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14 NISR, National Accounts (2016)

15 Ibid.

16 The poverty rate is defined as the share of the population that cannot afford to buy a basic basket of goods (food and Non-food). The NISR Rwanda Poverty Profile Report (2015) based on EIVC 4 data defines the poverty rate as the share of the population whose total consumption is below the total poverty line (RWF 159,375 in January 2014 prices of which RWF 105,034 is for food items).

17 NISR, EICV 1-4

18 World Bank Indicators: [http://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=RW&name\\_desc=true](http://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=RW&name_desc=true)

19 Ibid.

20 Ibid

21 NISR, FinScope (2016) financial inclusion is defined as access to formal financial institutions and the uptake and usage of financial products and services.

22 NISR, EICV4

23 NISR, National Accounts 2016, resource balance

24 Ibid.

25 Ibid.

26 NISR, National Accounts (2016)

27 PSTA4

28 NISR, EICV 1-4

29 The World Bank: World Development Report 2008: "Agriculture for Development".

## Growth and productivity

**Total agricultural sector production in 2016 stood at just under Rwf 2 trillion<sup>30</sup>.** Food crops is the dominant sub-sector taking up 58 per cent of the sector in terms of GDP contribution, followed by Forestry (21 per cent of total), Livestock (12 per cent), export crops (7 per cent), and Fishery (1 per cent).

**The agricultural sector has more than doubled in value from 2000 to 2016 (Table 1)** with average annual growth of 5.3 per cent. The period of highest growth was 2008 to 2012 (6 per cent per year), while growth has slowed down in recent years (4.7 per cent per year). All agricultural sub-sectors are currently growing, but attention toward sustained productivity growth is needed.

**TABLE 1: AVERAGE ANNUAL GROWTH IN AGRICULTURAL SUB-SECTORS (% P.A.)<sup>31</sup>**

Sub-sector	2000-04	2004-08	2008-12	2012-16	Ave. 2000-16
Food crops	5.5%	4.9%	6.6%	4.7%	5.4%
Export crops	12.9%	-1.4%	1.8%	2.3%	3.8%
Livestock & animal products	4.8%	3.6%	4.2%	8.3%	5.2%
Forestry	8.7%	5.9%	2.9%	3.4%	5.2%
Fishing	5.3%	1.5%	1.4%	3.9%	3.0%
<b>Total</b>	<b>5.9%</b>	<b>4.6%</b>	<b>6.0%</b>	<b>4.7%</b>	<b>5.3%</b>

**Stagnating crop yield gains are the main cause of the recent stagnation in agricultural sector growth.** While food crops saw an immediate growth spurt with the introduction of the CIP programme in 2008,<sup>32</sup> additional gains since 2013 have been harder to achieve: Most priority crop yields in 2016 were similar to their 2013 level, with yield gains confined to rice and climbing beans.<sup>33</sup> Export crops returns are largely driven by international prices, which tend to be volatile from year to year.

**Livestock has seen accelerating growth** and is currently the fastest growing sub-sector at 8.3 per cent p.a. between 2012 and 2016. The main reason for this high performance is a large increase in the number of animals and improved output per animal due to the introduction of improved breeds. However, further growth may be limited by the availability and access to animal feed unless crop production increases significantly.

## Food security

**Despite substantial growth in agricultural production over the past 10 years, food security and nutrition still have a room for improvement.** It is estimated that the national production of kilo calories from crops currently stand at 1950 kcal/person/day<sup>34</sup>, while the official food poverty line is defined as access to 2500 kcal/person/day<sup>35</sup>. Stunting rates remain high by international comparison - 38 per cent<sup>36</sup> - and 17.8 percent of 6-23 months old children do not meet the Minimum Acceptable Diet<sup>37</sup>. By the CARI measure, 20% of Rwandan households are food insecure<sup>38</sup>. Moreover, a large share of the population remains

30 NISR, National Accounts (2016, Current prices)

31 Calculation based on NISR, National Accounts

32 CIP supported plots saw 150 per cent yield improvement between 2007 and 2013 (RAB)

33 NISR, Seasonal Agricultural Survey 2013-2016.

34 Calculations based on NISR, Seasonal Agricultural Survey 2016; and NISR, Population Census Projections 2012.

35 NISR, EICV4, Poverty Profile Report

36 NISR, Rwanda Demographic and Health Survey (2014/2015)

37 Ibid.

38 NISR, Comprehensive Food Security and Vulnerability Assessment (CFSVA), (2015)

dependent on rain-fed agriculture and auto-consumption. Hence, people's ability adequately to feed themselves is vulnerable to weather-related shocks such as periodic droughts and floods<sup>39</sup>.

## Employment

**There is an on-going structural shift in the economy from subsistence agriculture towards non-farm sectors.** The agriculture share of employment has decreased from 88.6 per cent in 2001 to 68 per cent by 2014. This is in line with the Vision 2020 objectives and it is expected to continue as the country urbanises. The majority of agriculture labour force is composed of independent farmers (65 per cent), while wage farmers represent (35 per cent). Women constitute 66 per cent of the agricultural work force.<sup>40</sup>

## Exports

**Agriculture plays a central role in traditional exports and is a driver for export diversification.** In 2016, exports of agricultural and agro-processed goods were about \$252 million, roughly 52 per cent of total goods exports (formal and informal). About 65 per cent of agricultural exports are formal and is dominated by coffee and tea<sup>41</sup>. **Horticulture (fruits, vegetables, and flowers) is an emerging formal export sector.** Due to their relatively higher value per hectare and per kg, horticulture is suitable for air transport to high-value international markets. About 35 per cent of agricultural exports derive from informal cross-border trade. Currently, DRC is the main market for Rwanda's Cross-border trade - especially, livestock, potatoes, dairy, flour, and edible oils<sup>42</sup>. As the populations and economies of neighbouring countries grow, regional trade is expected to take up a larger share of Rwanda's exports.

## Drivers of Future Performance

This sub-section presents the key trends that will drive agriculture in the future decades, hence providing the broad rationale for the proposed policy actions.

**There is an untapped potential for increasing yields and minimising post-harvest losses.** The Crop Competitiveness Assessment 2016<sup>43</sup> found that yields for several crops are less than half of their potential, taking agro-climatic conditions into account. Furthermore, post-harvest losses were recorded as high as 30 per cent in some value chains. This untapped potential is highly significant, because food crop yields are the key to agricultural growth performance. Firstly, because food crops are the largest agricultural sub-sector, thus the main contributor to farmer consumption and investment in future production. Secondly, because of linkages to the rest of the economy: there is a close correlation between the performance of the crop harvest and growth in other sectors - especially livestock products (feed), agro-processing, retail, and hospitality (raw-materials).

**The causes of current low levels of productivity and profitability are multiple, but often related to land-fragmentation (small farm-sizes).** A rural household cultivates on average 0.6 ha, and has 2-5 animals<sup>44</sup>, hence the plots are often too small to produce a marketable surplus to invest in future production. Since there is limited access to finance, many smallholder farmers cannot afford to buy inputs, animals, land

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39 Ibid.

40NISR, EICV 4

41 BNR, Balance of Payment Statistics, 2016; BNR, Informal Cross-Border Trade Census, 2016

42 BNR, Informal Cross-Border Trade Statistics, 2016

43 Rwanda Crop Competitiveness Assessment, MINAGRI, 2016

44 NSIR, EIVC 4 2013/2014 <http://www.statistics.gov.rw/publication/eicv-4-thematic-report-environment-and-natural-resources>

husbandry, irrigation, extension services, insurance, post-harvest handling, and several other production factors. Consequently, many small-holder farmers are left with little means to increase productivity and farm their way out of poverty. Moreover, land fragmentation leads to underemployment in the agriculture sector. While there are off-farm jobs available in rural areas, they are insufficient to secure full-time employment. As a result, median hours worked for independent farmers were estimated at 20 hours/week in 2013/14<sup>45</sup> (both on and off-farm). This is also a problem for youth employment, as farming remains the largest single source of employment for young people: More than 50 per cent of rural youth (16-24 years) are still working only in agriculture today, and many of them are under-employed due to small farm sizes.

**Rapid population growth adds to the need for more food production and encroach on agricultural land:** Despite declining fertility rates the population is projected to grow significantly over the coming decades, which will increase the need for domestic food consumption. Meanwhile, population growth and urbanisation are expected to encroach on the land resources available for agriculture.

**Population growth in rural areas will accelerate land fragmentation:** In total, rural areas are expected to absorb 1.3 million new households between 2017 and 2032<sup>46</sup>, for many of whom agriculture will be the primary source of income. While agriculture's share of total employment will continue to fall with the ongoing structural transformation, the projected labour entrants each year to the sector is projected to be 60 – 80,000<sup>47</sup>. All else equal, this will aggravate the issues small-holder farmers are facing already today.

**Climate change and weather variability:** Weather variability has significant effect on agricultural production and livelihoods causing droughts and shocks to food security. Apart from the significant impact on droughts on small-holder crop farmers, the livestock sector is also affected by drought, which limits the availability of water and feed, and increases vulnerability to diseases. Hence, while subsistence farmers are most affected, climate variability affects all agricultural sectors and lowers annual production of all production, value addition, and exports.

**Future climate change could exacerbate the impact of climate variability in Rwanda and lead to new risks (though also potentially some benefits).** These changes could have potentially large impacts on agriculture in Rwanda, from the combination of rising temperatures and changing rainfall, shifting agro-climatic zones, increased variability, and extremes (shocks) as well as indirect effects from changing pest and diseases. Rwanda is already warming, with observational data showing average temperatures have increased over recent decades at higher levels than the global average. Three different climate change models project an increase in temperature of ~1 to 2.5°C by the middle of this century. This affects the composition the optimal production. Some crops will be harder to grow in certain areas, whereas new crops and varieties will benefit from the changes.

**Soil erosion and degradation is threatening the quality of agricultural land:** Soil acidity negatively influences the availability and uptake of several essential nutrients and restricts root growth and access to water and nutrients, making land less productive. According to the government's state of environment report (2015), about three-quarters of Rwanda's soils are acidic, with a pH below 5.5 and a deficiency in nitrogen, or in phosphorus. Notable progress has been made towards the prevention and reduction of soil degradation through terracing, such that more than 70% of Rwanda's farming is carried out on slopes ranging from 5% to 55% inclination. Nonetheless, the combination rain-fed small-scale agriculture, heavy rainfalls, and steep hillsides, leads to very high soil erosion rates.

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45 NSIR, EICV4 2013/2014

46 Ibid.

47 Ibid.

**High economic growth is creating domestic and regional markets for an expanding array of Rwandan agricultural products.** Growth in East Africa is amongst the fastest in the world and **Rwanda's budding reputation for quality**, sustainably produced agriculture products fit well with growing demand across Africa's urban centres for high-quality processed food. Domestically, opportunities exist for import substitution, specifically for high-value nutritious foods. There are opportunities for export and domestic strategies focused on high-quality niche products competing in higher-price and lower-volatility markets, catering to a middle-class consumer who demands high quality and food safety.

**The Rwandan economy is becoming more open with regional and international trade taking up an increasingly larger share of the economy.** Since 2000, imports and exports have increased their combined share of the economy from 31 to 48 per cent. Due to regional integration, the time to import and export a standard container through Mombasa Port fell from respectively 95 days and 60 days in 2007 to 27 and 26 days in 2015, and recent reforms have caused further drops in time and cost.

**The increased openness is likely to push agricultural production toward its comparative advantage.** While the economy overall benefits from international trade, increased openness creates both winners and losers: consumers gain from a greater choice of goods and services. Producers of goods and services where Rwanda has a comparative advantage will also gain and new opportunities in such sectors will emerge. In contrast, producers of goods and services in which Rwanda does not have a comparative advantage are likely to lose from increased market integration in the short and medium term, facing increased competition. Hence, there will be natural push factors toward the production of commercially viable products.

In conclusion, for Rwanda's agriculture to respond to the above factors and contribute to decent livelihoods to Rwanda citizens, there is a need of changing to accommodate principles of sustainability while keeping in mind the need for quality and quantity of agriculture products.

## Vision, Objectives, and Guiding Principles

### Vision:

A nation that enjoys food security, nutritional health, and sustainable agricultural growth from a productive, green, and market-led agricultural sector.

### Mission

To ensure food and nutrition security of Rwandans by using modern agribusiness technologies, professionalizing farmers in terms of production, commercialisation of the outputs, and the creation of a competitive agricultural sector.

### Policy Objectives

- 1. Increased contribution to wealth creation:** Rwanda is committed to halving poverty by 2025 through inclusive agriculture and growth transformation and increasing value addition and technological upgrading.
- 2. Economic opportunities and prosperity - jobs and poverty alleviation:** Committed to generating jobs and ensuring the participation of women and youth in the work force and boosting intra-African trade in agricultural commodities with better functioning national and regional markets.
- 3. Improved food security and nutrition:** Committed to ending hunger in Africa by 2025 through increased agricultural production and productivity while decreasing dietary gaps to fight childhood wasting and stunting.
- 4. Increased resilience and sustainability:** Committed to enhancing reliance of livelihoods & production systems and climate variability through an increased access of productive safety nets and efficient management of natural resources.

### Policy development consultations

During the National Agriculture Policy, a series of consultations have been undertaken, starting with the field visits in the selected districts from the 4 provinces based on their agro-ecological zones. Those are Rulindo, Burera, Nyamasheke, Rwamagana and Gisagara. The discussions with the Local government leaders started since July 14<sup>th</sup>, 2016 and were oriented mainly on the challenges met so far and how resilient should be the policy instrument in terms of bringing guidance to cope with them.

On July 19<sup>th</sup>, 2016, MINAGRI proceeded with the workshop consultation with Development Partners and to review the structure from the local Government consultation.

August 30<sup>th</sup>, 2016, Ministerial and Government Institutions were invited mainly to discuss on the National policy pillars and crosscheck in order to sustain its alignment with the existing Policy and Strategies.

On October 20<sup>th</sup>, 2016, Private Sector Stakeholders were consulted along the process and their remarks in terms of roles and responsibilities.

Civil Societies, Farmers' Organizations and CCOAIB (gathering local NGOs) were consulted on October 21<sup>st</sup>, 2016 and of January 18<sup>th</sup>, 2017 respectively, and the central demand from this meeting was to increase awareness of the smallholder farmers on the policy instrument and buy in the ownership by farmers and though to increase mutual accountability.

This workshop was followed by a special gathering of Farmers' representatives from all the value chain across the country on December 23<sup>rd</sup>, 2016. Issues and challenges were raised and solutions from their group works were considered when drafting long terms policy actions.

Colleges of Academia, researchers and Policy Institutions operating in Agriculture sector appreciated the consultation around the National Agriculture Policy to strengthen the collaboration between MINAGRI and Agriculture Universities and Institutions. This occurred on October 27<sup>th</sup>, 2016.

On February 17<sup>th</sup>, 2017, the Local Government was again invited for improving the document draft already produced and to emphasize on the uniqueness based on the area and structure of the districts. It is worthy to mention that at every step made during the consultation, the Agriculture Sector Working Group (gathering all the Development Partners) were involved to consider and improve the remarks from other stakeholders. The last but not final path of this important instrument was to submit it to The Economic Cluster for consultation on May 15<sup>th</sup>, 2018. Comments given were included in the Policy document.

## Policy Outline

Based on identified challenges and opportunities and the policy objectives, the NAP is structured as follows:

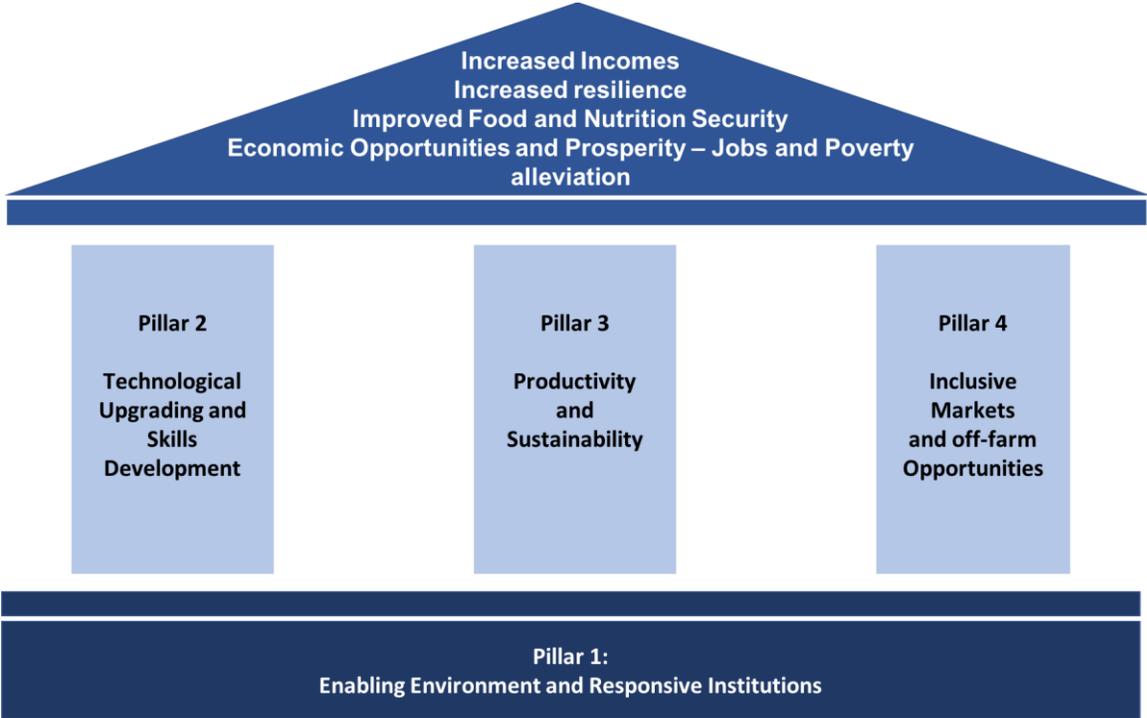
**Pillar 1: Enabling Environment & Responsive Institutions.** Institutions, the regulatory framework, and finance are considered to be foundation for efficient and effective investment in the agriculture sector. At its core, the NAP presents a vision to have a productive, green, and market-led agricultural sector. This implies a larger role for the private sector, hence the role of the government from a market actor to a market enabler. To make this shift, the NAP presents an agenda for institutional and regulatory reforms which defines the principles of public investment, lays out a framework for attracting private investment to the agricultural sector, while enhancing access to finance for farmers, and enhancing the responsiveness of institutions.

**Pillar 2: Technological Upgrading and Skills Development.** This section presents a research agenda for closing Rwanda's agriculture technology and skills gap, thus making more people employable and creating jobs. To implement the agenda, the research capacity must be upgraded, while introducing feedback mechanisms from the producers to ensure research and extension services are demand-driven. To effectively adopt technologies developed through research, it is crucial to create an environment that facilitates innovation and skills development in the sector. Therefore, the policy emphasizes support to innovative projects developed with partners, and the importance of skills development in the sector – especially for youth and women.

**Pillar 3: Productivity and Sustainability.** With Rwanda's growing population, the pressure on land resources is mounting. Agricultural production must increase accordingly in order to meet socio-economic and food security needs. At the same time, the adverse effects of climate change, soil erosion, and urbanisation, are unrelentingly undermining the quantity and quality of agricultural land resources. This calls for continued efforts toward productivity growth: through increased inputs and sustainable climate smart practices; protecting agricultural land against fragmentation, erosion, and degradation; and shifting production toward higher-value products while introducing land-saving technologies. Animal resources production has seen growth in recent years. To increase production further, sustained effort is required toward introducing improved breeds, sourcing animal feed, and fighting animal diseases. Farmers tend to be vulnerable to risk. It is therefore required to build resilience and response mechanisms against adverse events in farming communities and provide social protection for vulnerable groups.

**Pillar 4: Inclusive markets and off-farm opportunities:** Efficient value chains are a decisive factor for a competitive sector that ensures nation-wide food safety and food security. This includes key input markets such as fertilisers, insurance, and finance as well as upstream activities such as aggregation, value addition, food availability, and export readiness. Agricultural products must not only follow high standards for local consumer markets, providing a steady stream of healthy food, but also be able to compete in international export markets. Post-harvest management and contract farming will help aggregation on a wider level, promoting economies of scale. Off-farm opportunities, especially for women and youth are important for income diversification in rural areas while establishing forward linkages to urban and foreign markets.

**Figure 1: National Agricultural Policy Structure**



## Policy Framework

### Pillar 1: Enabling Environment and Responsive Institutions

Rapid transformation in agriculture for economic growth and farm level food security will require significant investments to finance the policy agenda laid out in this NAP. With a limitation on available public resources, it is crucial to ensure that public funds are allocated efficiently and effectively, while attracting private sector investment and capabilities to the sector. Lessons from the recent years demonstrate that attracting the desired levels of private sector investment has been challenging<sup>48</sup>. Adjustments are therefore required in order to effectively implement the GoR's NST and Vision2050. Consequently, this NAP sets out a comprehensive agenda for institutional change: 1) shifting the role of government from market actor to enabler laying the groundwork for increased private sector investment; 2) ensure that institutions are efficient and responsive to stakeholder needs and maintain a conducive and predictable regulatory framework. As such, the institutional framework serves as a foundation for the Pillars of the NAP.

#### Public Investment Principles

The public-sector will act as a market enabler to leverage private sector investment and to harness its full potential to meet the policy objectives of the NST and Vision 2020/50.

Hence the scope of public versus private investment will be determined by a cost-benefit assessment of the expected financial return (profitability) and economic return (desirability)<sup>49</sup>:

- a) Public investment will be focused toward projects with positive economic return (**desirable**) but undersupplied by the private sector due to negative financial return (**unprofitable**). The government may invest either through direct provision, subsidies, or PPPs.
- b) Projects that are **both profitable and desirable** will be left for private sector to the largest extent possible. The GoR will invest only if the private sector is unready. In such cases, GoR will first seek ways of attracting private investors or co-investing with them before embarking on investing in financially and economically viable projects independently.

#### **Policy actions**

- 1.1 Focus on projects that have positive economic return and social desirability but little appeal for private investors;
- 1.2 Partner with private sector to invest in business operations that are not purely attracting the private sector investment;
- 1.3 Address market failures by providing targeted interventions;
- 1.4 Enhance coordination to ensuring a conducive enabling environment;
- 1.5 Audit of Government assets prior to privatization by private sector actors.

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48 Source: PSTA 3 Medium Term Review. One possible cause of the lack of private sector investment cited by MTR was "an undercurrent of risk perceptions that prevents the private sector to make the complementary investments".

49 If the financial return is positive, this means the project implementer would profit from undertake the project. If the economic return is positive, society as whole would benefit from the project.

## Promoting Private Sector Investment and Finance for Agriculture

The GoR recognises the central role the private sector will play in transforming Rwandan agriculture from subsistence-based to competitive and market-led<sup>50</sup>. The change will be driven by investments of private actors ranging from smallholder farmers/cooperatives to larger investors. Investment from small-holder farmers is primarily limited by access to finance, whereas attracting larger investors requires promotion, after-care, and incentives.

### *Finance for Agriculture*

Finance is at the very core of increasing agricultural productivity: inputs, land husbandry, animal feed, irrigation, value addition etc require investment before the return is received. Without finance, farmers have limited funds available for increasing the production and are left with hard choices between which production factors to buy and which to omit.

Rwanda has made substantial headway with the success of the Land Tenure Regularisation Programme enabling farmers to use land as collateral<sup>51</sup>. Yet, only 5.2% of formal credit goes toward agriculture<sup>52</sup>, and formal agricultural financing is primarily supplied by non-banks, namely SACCOs and mobile money providers<sup>53</sup>. Therefore, it is important to address the issues of financing that are preventing the agriculture sector to reach its potential.

### **Policy actions**

- 1.6 Conduct a feasibility study for Agriculture financing mechanisms and Implement recommended mechanisms;
- 1.7 Support the demand-side in financial markets through: financial literacy campaigns; encouraging farmers to join savings groups and cooperatives; and supporting entrepreneurs create bankable business plans (especially women and youth);
- 1.8 Encourage the supply of agricultural finance by providing incentives for financial product development for agriculture<sup>54</sup>;
- 1.9 Provide technical assistance to SACCOs and MFIs in agricultural financing;
- 1.10 Establishing public databases of farmers and implement measures that improve their credit worthiness;
- 1.11 Develop value chain financing by regulating value chain instruments and contract enforcement.

### *Promotion and aftercare for fully private projects*

Large private investments in agricultural production, agro-processing, and supporting hard and soft infrastructure can have significant impact on the sector. Yet, the sector is receiving fewer investments than its size would suggest<sup>55</sup>. On top of factors related to the general investment climate, agribusiness investors specifically highlight that investment could increase with increased access to information about

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50 Rwanda National Agribusiness Investment Promotion Strategy, MINAGRI, 2017

51 Among households that accessed a loan from a formal source of credit, 41% used land as collateral to obtain the loan (World Bank - 2016)

52 BNR, Monetary Policy and Financial Stability Statement (2017)

53 World Bank, Agri-Finance Diagnostic Report (2016)

54 For example, warehouse receipt systems, structured trade finance, leasing schemes, agent banking (to facilitate outreach to rural area), factoring, cash flow-based financing, and scaling up embedded value chain financing (both by input providers and buyers).

55 Agriculture is currently receiving just over 9% of registered FDI (BNR, FCC 2016)

procedures as well as local venture partners and supplier; improved coordination between government institutions in the after-care process; and longer lease agreements on available land plots<sup>56</sup> are necessary.

### ***Policy actions***

- 1.12 Provide a transparent, stable, and predictable regulatory framework in agriculture on land market, inputs, technology registration, inspection, and certification;
- 1.13 Facilitate access to information for investors, including procedures as well as linking to potential domestic partners through Forums, Online portals, Informational handout materials;
- 1.14 Improve coordination between public and private institutions in investment process through Public and Private Dialogues and improved Value Chain Platforms for agro-investors.

### *Enrich Private Investment*

Establishing mechanisms to partner with the private sector through various instruments to shift the government's role from the one of a market actor to a market enabler. Studies will be carried out to define better ways of attracting additional private capital and capabilities toward meeting national priorities by providing financial incentives to relevant implementing partners through mechanisms like competitive matching grants and credit guarantee schemes.

Formulating PPP projects under the PPP Law of 2016 is a complementary strategy to attract private investment to the sector. Under this law, line ministries can formulate PPP projects aiming at attracting private partners to projects of national priority<sup>57</sup>, and submit to the PPP Committee for support and approval, and subsequent tendering process. This model allows for a broad range of models to be chosen according to the nature of the project.

### ***Policy actions***

- 1.15 Establish mechanisms to leverage additional private capital and resources toward national objectives by providing financial incentives for private sector engagement;
- 1.16 Formulate PPP projects under the PPP law of 2016<sup>58</sup>, using models tailor-made for the individual project.

## *Responsive Institutions*

To accelerate commercialisation in agriculture, an enabling policy and regulatory environment is required, in which institutions respond effectively to stakeholder's needs.

The NAP sets out an inclusive programme to become an enabling force for development by enhancing the effectiveness and efficiency of service delivery through decentralised administration; (ii) ensuring policy coherence and a transparent and predictable regulatory framework; and (iii) engagement farmers, the private sector, and civil society through public-private dialogue.

### *Institutional Reform*

To see a policy through from thought to action, actors along the process must internalize the relevance and ownership of policymaking. A thorough institutional review and reform will help build capacity to formulate and implement policies, shifting the responsibility from market actor to market enabler. A predictable and stable regulatory and legislative framework will hereby support rules-based market

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56 The National Agri-Business Investment Promotion Strategy (2017)

57 Law N°14/2016

58 Law N°14/2016

interventions. Furthermore, decentralized policy decisions must reflect the realities in the field and deliver services that respond to the needs of local communities. Capabilities at the local level will be needed to take more responsibility and to coordinate multi-sector responses.

### ***Policy actions***

- 1.17 Organisational structures of MINAGRI and its implementing agencies will be revised to be more responsive to stakeholder needs.
- 1.18 Decentralize responsibility to the local level as much as possible contingent on capabilities to take on the duties;
- 1.19 Ensure that feedback loops between the central and local levels of government work effectively. GoR will conduct a functional review of public services to farmers, to assess the current division of roles and performance. Based on that, GoR will formulate service improvement plans to include capacity building, monitoring and management responsibility so that they are incorporated into local joint-planning. Finally, convey a decentralized capacity building action plan to coach and support decentralized services delivery;
- 1.20 Establish a functional management and information system for public joint planning and monitoring with a private sector entry portal.

### *Public Private Dialogue (PPD) and value chain platforms*

To be effective and sustainable, policy development needs to be a joint activity oriented towards stakeholder needs, rather than undertaken centrally<sup>59</sup>. To facilitate this process, MINAGRI will create a platform for regular agri-food stakeholder participation in agriculture policy programming and implementation, ensuring local ownership. These PPDs promote a 'sector-building' approach, where business-enabling factors are identified, challenges in the value chain are addressed, and the lack of services and quality inputs are used as a prime business opportunity for further investment promotion.

### ***Policy actions***

- 1.21 To ensure effective continuity of PPD platforms so that Agri-food stakeholders can meet regularly with MINAGRI to plan and evaluate strategies, programmes, and projects under implementation (Development Partners, Local Government, Private sector, Civil society, and Farmers' organization);
- 1.22 Promote national value chain platforms, implementing joint value chain action plans with co-funding for relevant technical assistance and capacity building district level platforms.

### *Evidence-based Policymaking*

Continuous learning and knowledge building is crucial to the effective implementation of the programmes, especially in achieving their objectives. Monitoring, Evaluation & Learning (MEL) will enhance accountability through the provision and sharing of timely and accurate information on the sector's performance. For long-term decision-making it is paramount that sectoral capabilities for collecting, analysing, validating, and agricultural data are improved. There is a need to upgrade access, storage, and application of data at all data points in the agri-food system as well as food security at nutrition at the household level.

### ***Policy actions***

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59 Institutional Issues Assessment. Workshop Report, October 2017.

- 1.23 Create an IT unit to implement a Common Data Warehouse, a statistics unit at the ministry level, and upgrade monitoring, evaluation, and learning (MEL) capabilities;
- 1.24 Create new and continuously adjust large ongoing programmes (for example CIP and Girinka) as new evidence emerges.

## Pillar 2: Technological Upgrading and Skills Development

Technological upgrading is at the core of productivity growth. It is an important public function in support of agriculture development<sup>60</sup>. Studies across the globe consistently find 40-60 per cent rates of return on investments in science for agriculture<sup>61</sup>. In Rwanda, research in agriculture has been under-invested with only 0.7% of public expenditure versus a target of 7.1% during PSTA3.<sup>62</sup> Furthermore, research programmes are not always responsive to market needs and technology dissemination to farmers, firms, and policy makers is limited.

This National Agriculture Policy put forth an ambitious research agenda which responds to stakeholder needs. Firstly, there is a need to strengthen research capacity and bring together partners with a diverse set of capabilities to meet the agriculture research objectives. Demand-driven research will be ensured through better feedback loops and links to extension and an increased private sector involvement. This will also lead to wider and more rapid adoption. Secondly, to demonstrate new technologies, innovative private sector-driven pilot projects are crucial. Thirdly, to provide demand-driven and customised extension services tailored to farmers' needs, providing both technical as well as management/business skills, while enhancing the role and services of extension service providers is important. Finally, it is critical to upgrade the general skill-level in agriculture and agricultural value chains stakeholders to ensure sustained upgrading of knowledge. These priorities should achieve sustained technological upgrading and capacitated farmers and value chain actors to make informed decisions and profitably engage in farm and off farm activities.

### Research Agenda for Technological Upgrading

A strong research sector will develop and disseminate locally-adapted technologies based on sector demands. An adequate institutional set-up will be required to drive the agenda forward and bring together stakeholders and partners. In particular, demand-driven research will be ensured through better feedback loops and links to extension and an increased private sector involvement. In general, public research shall be considered a public good availed to the benefit of any stakeholder in the agricultural sector.

The following sub-section presents the current research objectives in various fields. The agenda will be continuously adapted to shifting needs of the sector.

**Crop:** Availability of high quality improved seeds remains a constraint. The largest proportion of improved seeds is imported, and research in crop inputs and technologies suitable to Rwanda's agro-climatic zones is limited. In addition to crop improvement, research efforts will focus on preserving local crop varieties and improving nutritional quality of crops through conventional and biotechnological tools.

### ***Policy actions***

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60 Alene & Coulibaly (2009); Beintema & Elliot (2009); Nin-Prat & Fan (2010)

61 FARA. (2014). Science agenda for agriculture in Africa (S3A): "Connecting Science" to transform agriculture in Africa.

62 Agriculture Expenditure Review (2016)

- 2.1 Promote research to develop high yielding crop varieties resistant to biotic and abiotic stresses (e.g. disease, drought, and pests);
- 2.2 Invest in domestic production and multiplication of quality/certified planting materials by enhancing research efforts to develop improved seed varieties and improve their availability;
- 2.3 Promote research on nutrient-rich crops through bio-fortification, to position Rwanda as a trusted source of bio-fortified food for the region;
- 2.4 Support research in Agriculture Biotechnology.
- 2.5 Conduct research on post-harvest management technologies, quality preservation and value addition;
- 2.6 Improve technology dissemination systems;
- 2.7 Fast-track the biosafety regulatory framework.

**Soil system:** refers to soil quality to increase its capacity to function as a vital living ecosystem that sustains plants, animals, and humans. The importance of managing soils is imperative for future generations. Challenges to Rwanda's soils include soil degradation, nutrient losses through erosion, soil acidity, low organic matter, and the emerging problems of salinity that is constraining crop productivity in marshlands. Specific nutrient management packages must consider climate variability and future climate change. Soil diagnostics using the latest high-resolution GIS technologies and mobile soil testing equipment to refine the soil typology profiles are important. An integrated approach to research on soil health will lead to continuous and simplified correction-mechanisms.

***Policy actions***

- 2.8 Update soil maps and acquire and test special equipment used in dosing fertilizers according to the soil type. A follow up strategy on dissemination of information on soil type will be developed.
- 2.9 Research on bio-fertilizers technologies and organic fertilizer use among farmers;
- 2.10 Concentrate research efforts on tree/crop/soil interfaces and develop suitable models and technologies to increase agroforestry;
- 2.11 Promote urban agriculture through introduce production technologies that are specific to urban agriculture;
- 2.12 Focus on domestic production and multiplication of quality planting materials in order to increase seedlings for agroforestry trees;
- 2.13 Conduct research on appropriate irrigation technologies.

**Animal resources:** The government recognizes the positive contribution of animal resources to the national GDP, reduction of poverty, nutritional security and in boosting export earnings. To increase availability of animal resource output, there is a need to invest in animal genetic improvement, address animal feed and animal health challenges.

To address the challenges of limited feed resources for livestock research efforts will be geared towards finding solutions for expansion and commercialization of animal feed value chains. To combat animal diseases, which are transboundary, investments are proposed to strengthen disease diagnostic capacity in national veterinary and satellite laboratories.

***Policy actions***

- 2.14 Improving local breed development to enable drought survival and disease resistance;
- 2.15 Support community breeding practices and animal selection to improve animal genotype, as well as genetic diversity to achieve resilience through maintenance of local breeds;
- 2.16 Establish conservation and breeding centres;

- 2.17 Conduct research on animal diseases, vaccines and drugs;
- 2.18 Conduct research on increasing nutritious value of fodder;
- 2.19 Promote research on diversified animal products;
- 2.20 In partnership with private sector, conduct research on animal feed formulation;
- 2.21 Strengthen the capacity for animal research capacity;
- 2.22 Conduct research on Animal products value addition;
- 2.23 Upgrade the outreach system for animal technology dissemination.

**Fisheries and Aquaculture:** The main challenge in fisheries and aquaculture is the access to fingerlings fish feed, and skills in professional breeding. Research efforts must therefore help identify fish breeding materials, including diversification of fish species, breeding techniques as well as feed formulation.

***Policy actions***

- 2.24 Prioritize Fish feed formulation and production technology development;
- 2.25 Research on post-harvest loss reduction, fish quality and value addition;
- 2.26 Conduct research on fingerlings production;
- 2.27 Skill development in aquaculture research.

**Market research:** To successfully tap market opportunities, research on domestic, regional, and overseas markets is crucially important. Market research and product development, including data analysis on primary information (e.g. production volumes, consumption) and processed data (e.g. market trends, forecasts), is required to expand exports and sales to domestic, regional, and international markets. Such information shall be provided as a public good to all players. Research on the domestic market will be geared toward meeting the needs of consumers as well as producers. Research on regional markets shall help identify relevant non-tariff barriers in regional trade to support the mandated GoR institutions in regional trade negotiations in areas relevant to the agri-food system. For overseas markets, market entry studies have been conducted for several markets over the past few years<sup>63</sup>. The common conclusion of these studies is that Rwandan producers can supply niche products mainly in horticulture and animal products, but the key challenges to overcome in these sectors are in reaching a critical mass of domestic production<sup>64</sup> and meeting requirements for logistics and standards.

***Policy actions***

- 2.28 Identify products and varieties preferred by consumers depending on targeted markets (rural/urban, regional, and international), and which will perform positively under current and future agro-climatic zones;
- 2.29 Focus on domestic market research on identifying dietary gaps, mapping consumption patterns and the links with production, trade analysis, impact of regulations;
- 2.30 Conduct regional and international markets research on identifying Rwanda’s comparative advantage;
- 2.31 Support research in identification of niche products and finding cost effective and sustainable solutions to logistical challenges; as well as meeting quality and safety standards at all stages of the value chain.

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63 MINICOM have conducted market entry studies for: Gabon, Rep. Congo, Dubai, and Nigeria,

64 Ibid.

## Increasing Research Capacity

### *Upgrading Research Infrastructure and Human Resources*

To implement the research agenda, investments will be needed to increase research infrastructures since the majority of agriculture physical infrastructures are in critical need of rehabilitation. Human resources are the backbone in technological upgrading efforts. Research gap still do exist and it is important to consistently invest in capacity building.

#### **Policy actions**

- 2.32 Upgrade Research equipment and online repository;
- 2.33 Rehabilitate and upgrade public research infrastructures. For example, new laboratories, research stations, greenhouses, hydroponic facilities, post-harvest research facilities, and gene banks;
- 2.34 Increase human resources for conducting research in key areas. Adequate resources will be allocated to capacity building of researchers and for retaining highly qualified scientific staff.

### *Fostering Collaborative Networks*

To improve current and to ensure future research capacity, stronger collaboration with research institutions is necessary. This will contribute to bridging the gap between research institutions and agriculture sector researchers and extensionists. Strengthened regional and international research collaboration can leverage greater impact from a relatively small national research system, enriching local knowledge. Farmers and research findings must be closely interlinked, with fast dissemination of information and demand driven research topics which farmers can and want to apply.

#### **Policy actions**

- 2.35 Create and nurture collaborative networks to leapfrog technologies in a fast and cost-effective way and tap into resources and capabilities possessed by domestic and international research institutions;
- 2.36 Encourage Rwandan scientists and researchers to access national and international research facilities and undertake exchange visits to develop regional/international research networks.
- 2.37 Allocate funds to acquire patents and licenses through research networks. In that way, technologies developed in other countries will be availed in Rwanda easily for the good of sector beneficiaries;
- 2.38 Ease the technology testing in Rwanda;
- 2.39 Establish “Research-into-use platforms” to improve dialogue and links between research and extension.

## Promote Innovation

The overall purpose is to bring research to life by incentivizing research institutions and the private sector to pilot new technologies and business models. Given Rwanda’s land constraints, main priority must be given to land saving production technologies and business models that increase quantity and quality of produce and animal resources and per hectare. Financing these innovations will occur depending on the nature of the specific project: loan guarantee, matching grants, BOT, subsidies will be targeted to attract private capital to invest in input acquisition; Irrigation and erosion control; Infrastructure and logistics; mechanization; post-harvest management and cold storage facilities; food processing; ICT for Agriculture.

Mechanization is crucial for increasing for labour and land productivity. Mechanization and technology programmes are context-specific and must respond to the specific needs of a country. To enhance its

impact, attention will be given to adapting technology programmes to local conditions and considering specific needs of women, the youth, and vulnerable households.

***Policy actions:***

- 2.40 Establish a mechanization centre to prototype and test mechanization technologies;
- 2.41 Promote mechanization at the farm-level and across the value chains by linking farmers to sellers of technologies;
- 2.42 Create mechanization service centres to support operation and maintenance of the equipment;
- 2.43 Foster labour-saving technologies, especially to reduce women’s workload and allow them to allocate more time to other productive activities and child feeding and care.

## Extension Services

Extension services are crucial for closing the gap between current productivity and potential productivity. An effective extension system disperses technologies and techniques to the farm-level that are tailor made to the realities on the ground. It is therefore important to enhance effective dissemination of ideas while creating effective feedback mechanisms that ensure the services provided reflect the demands. ICT provides useful tools for facilitating this feedback if made available to farmers. Additionally, in a drive toward commercializing agriculture, extension services need a business-oriented focus to complement training in agricultural techniques. Moreover, the knowledge-dissemination system can be used for farmer feedback as well as promoting priorities such as nutrition, gender, financial management, using weather and climate information, IPM, climate smart agriculture, and others.

It is important to note that different farmers have different needs. While public extension services shall be made available broadly, some farmers need more specialized services and may be able to pay a fee if convinced of the efficacy. It is therefore warranted to have a dual approach with provision of high-quality public services while fostering a sector of private service providers.

The National Agriculture Policy promotes a pluralistic extension service delivery system that is flexible enough to consider different production systems, farms size, capacities, and social status, among others. The aim is to build farmers’ capacity to identify problems, test possible solutions and adopt appropriate practices and technologies in a changing environment.

***Policy actions***

- 2.44 Broaden the public extension services to include business orientation, nutrition, gender, and savings, using weather and climate information, IPM and climate smart agriculture;
- 2.45 Promote effective knowledge dissemination and feedback mechanisms
- 2.46 Promoting private sector involvement in extension services;
- 2.47 Upgrade institutional frameworks: enforcing a performance evaluation and incentive system to improve the level and accountability of the advisory services delivered.

## Promote Skills Development

Achieving transformation over the longer term requires sustained focus on raising the skills level and adapting capacities to shifting realities. There is still great potential to improve the skills and capacities of farmers and farmer organisations and adapting the skill to a commercialised agricultural sector. Vocational education, and training (VET) can provide cost- effective access to knowledge and specific job-related skills in agriculture value chains and educate for a cadre of skilled farmers and service providers in agriculture. TVET will be properly articulated with the formal education system, with adequate funding, regulation, and monitoring, to ensure curricula adapt rapidly to labour market requirements.

### **Policy actions**

- 2.48 Use institutional structures such as a multi-stakeholder oversight and monitoring committees to help ensure coordination and market-responsiveness in curricula development and teaching;
- 2.49 Include food industries and provision of services to farmers (e.g. mechanic repairs, masonry etc.) in TVET and cover skills like management, marketing, product packaging and labelling.<sup>65</sup>

### **Youth**

Youth need to access specialized training and assistance to address issues such as meeting local and international food safety standards and developing appropriate, low-cost packaging and labelling. Private sector engagement in this area will be increased to ensure training meets skill requirements. Therefore, skills development in agribusiness development will focus on business skills and market orientation. Entrepreneurs in SMEs and clusters of agri-food system businesses require assistance to analyse market potential for their products and services and to comply with regulatory requirements. Training will be delivered through traditional TVETs as well as E-learning.

#### **Policy actions**

- 2.50 Pilot a new approach where private sector professionals will teach content to out of school youth, through multi-media programs;
- 2.51 Ensure that learning curricula is also accessible and relevant to women and young people with minimal formal education.

### **Women**

Though women outnumber men in the agricultural workforce (participation rate of 92% compared to 77%)<sup>66</sup>, unequal power relations leave women with limited decision-making powers. This affects their control over agricultural assets, inputs, produce, and capacity building opportunities, resulting in lower average productivity. Women empowerment is linked to many positive spill-over effects on the overall economy: household members' health, food security and nutritional status, and reduction of gender-based violence and discrimination. Women economic empowerment will be fostered through provision of technical skills and promoting access to inputs.

### **Policy actions**

- 2.52 Provide targeted support to women to access suitable financial products for income-generating on-farm and off-farm activities;
- 2.53 Facilitate access to start-up funds for women to start or grow their agribusiness enterprises.

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65 International research supports such an approach, e.g. "Policy in the educational and agricultural sectors should encourage the development of a wider range of transferable skills, including integrating information and communications technology (ICT) into such training, and introducing 'green' skills and gender awareness initiatives."  
[unesdoc.unesco.org/images/0024/002457/245765e.pdf](http://unesdoc.unesco.org/images/0024/002457/245765e.pdf)

66 2012 population census. <http://www.statistics.gov.rw/survey-period/fourth-population-and-housing-census-2012>

## Pillar 3: Productivity and Sustainability

With Rwanda's growing population, the pressure on land resources is mounting. Agricultural production must increase in order to meet socio-economic and food security targets. At the same time, the adverse effects of climate change, soil erosion, soil degradation, and urbanisation, are unrelentingly undermining the quantity and quality of agricultural land resources.

This calls for continued efforts toward productivity growth: through increased input use, sustainable climate smart practices; protecting agricultural land against fragmentation, erosion, and degradation; shifting production toward higher-value products and introducing land-saving technologies.

Animal resources are excellent for closing dietary gaps in protein consumption and producing higher value products. Sustained effort is required toward introducing improved breeds, sourcing animal feed, and fighting animal diseases.

Farmers tend to be vulnerable to risk. It is therefore required to build resilience against adverse events in farming communities by having effective disaster response mechanisms in place; supplying early warning systems to adverse weather events; facilitating provision of insurance products for farmers; and supplying productive assets to vulnerable groups.

### Increasing Land Productivity Sustainably

In Rwanda, land is the scarcest production factor for agriculture with small and fragmented parcels. Majority of Rwandan farmers are subsistence farmers who face a complexity of several challenges that suppresses yields below potential, such as limited access to improved seeds, fertilizer, irrigation and other key inputs. This creates difficulties for reaching optimal yield by hectare. Investments are therefore required in the use of improved inputs, soil and water conservation, irrigation and sustainable land husbandry. By combining good agricultural and conservation practices and focusing on agricultural commodities that offer high returns and good market opportunities, a sustained increase in agricultural production and productivity can be achieved.

#### *Increase on-farm productivity sustainably*

To use crop production inputs efficiently and sustainably, farmers must be prepared to adopting climate smart agriculture practices, which enhance productivity and resilience. For example, soil protection is recognised as an important measure for sustainable agriculture for long run land productivity and is maintained by use of inputs with high efficiency (output/cost-ratio) without adverse effects on natural resources. Furthermore, achieving enhanced productivity requires the monitoring of crop health and timely control of pests and diseases. Doing so will mitigate current and future risks brought upon by weather variability and climate change.

#### **Policy actions**

- 3.1 'Horizontal zoning' of crops and livestock based on their comparative advantage and on an evidence-based understanding of local conditions (soil, climate etc.);
- 3.2 Promote the adoption of integrated soil fertility management which combines agri-environmental practices, resource recovery and reuse of fertilizer-enriched products through incorporating manure, crop residues and composting in current farming systems;
- 3.3 Support the increase in organic fertilizer production and utilization training as part of ISFM practices in conjunction with the gradual liberalization of fertilizer supply;
- 3.4 Promote Integrated Pest Management technologies to control pests and diseases. Natural pest control mechanisms are promoted to the extent possible, with the least possible disruption to the

- agro ecosystem, and train farmers in safe pesticide handling and risks associated with pesticide use;
- 3.5 Build local private sector led seed systems by facilitating access to irrigation, seed conditioning and storing capacity;
  - 3.6 Support production and use of soil specific fertilizer blends;
  - 3.7 Facilitate access to inputs by promotion of use of seed and fertilizers by increasing agro-dealership networks;
  - 3.8 Promote saving for input mechanisms and value chain integration;
  - 3.9 Promote and support production of high value commodities.

#### *Address land fragmentation*

Though much progress has been made in land reform in Rwanda, land availability and use remain contentious and a constraint on agricultural performance. Land use planning and improved land administration, including land consolidation, are critical factors to ensure land remains productive and that policies are inclusive. Though much headway has been made with the Land Tenure Regularisation (LTR) program, land transactions in rural areas remain informal, due to low awareness of relevant regulations and remoteness to public offices. The Agriculture Land Information System (ALIS) is a platform for investors on available agricultural land, which enables the ministry to better attract private investment in agriculture.

Once farmers are organized in strong cooperatives, they will be able to benefit from support to invest in high productivity technologies such as green houses and hydroponics. Furthermore, farmers on small plots will be supported to venture into high value commodities to get the maximum out of limited land and linked to other social protection mechanisms as well as off farm opportunities. Formal land market transactions and land leasing are effective tools for voluntary land-consolidation. Such transactions can be promoted through strengthened legal frameworks that secures the productivity gains of land consolidation while considering responsible social outcomes.

#### ***Policy actions***

- 3.10 Zoning and protecting agriculture land, which requires close coordination at decentralized levels. This will be based on detailed land-profiling to determine use and potentials of the land;
- 3.11 Gazetting agriculture land using the Agriculture Land Information System (ALIS), by ensuring plots to be registered and entered on the ALIS platform;
- 3.12 Encourage farmer cooperation and cooperatives to improve productivity, increase production and commercialisation and address the challenge of land fragmentation;
- 3.13 Develop policy interventions on strengthening the legal and enabling environment in order to improve (formal) land market participation in rural areas, especially through leasing;
- 3.14 Encourage high value commodity production on smaller plots;
- 3.15 Promote sustainable land husbandry practices to address soil erosion and degradation.

Sustainable agricultural land management practices aim to protect resources and enhance the productive capacity of land and soil. This is done by reducing soil erosion, improving soil water infiltration, and holding capacity, enhancing nutrient supply, and increasing soil biodiversity. Investments in hill slopes soil and water conservation consist of structures development, erosion control measures and agro-forestry. Climate smart agriculture has the potential to increase productivity, build resilience to current climate variability and future climate risks and reduce greenhouse gas emissions.

#### ***Policy actions***

- 3.16 Continue efforts on terracing while involving the local communities;

- 3.17 Encourage use of a wide range of cost-effective erosion control solutions such as structures: check dams, soils/water detention trenches, cut off drains, waterways; erosion control measures: tree belts, contour belts, grass strips, contour bunds, planting of fodder grasses on bunds/ridges, use of permanent, perennial vegetation on contours, etc.; and agro-forestry: intercropping, integration of trees on farm plots, tree belts, protective forests, food production and nitrogen fixing, erosion control, etc.

#### *Promoting Irrigation and Sustainable Water Management*

To combat climate change and land fragmentation, a sustainable water management system is needed. Irrigation is effective yet capital intensive and will thus require private sector involvement. Furthermore, irrigation is a technology not straightforwardly handled by all farmers, especially smallholder farmers. Nonetheless, it allows farmers to move from rain-fed, to diversified, high value crops, thus increasing cropping intensity and land productivity. While developing irrigation is a priority, the irrigation systems need to be efficient and sustainable, both in terms of its provision of water resources as well as the development and management of the irrigation systems. Providing access to water to farmers and their livestock will require better ways to capture water in both downhill marshland systems and hilltop crop production.

The development of the irrigation systems will be based on needs determined by agro-climatic zones and market requirements. Incentives will be provided for direct private sector investment in irrigation development and service provision where feasible. The management of irrigated infrastructure requires skills, technologies and cash flow which are currently beyond the capacities of most farmers and farmers' organizations. On the other hand, the model of state-led management of irrigation schemes represents a heavy burden on public finances.

#### ***Policy actions***

- 3.18 Increase the area under irrigation;
- 3.19 Promote private sector- led models of irrigation scheme management and establish maintenance fee collection;
- 3.20 Attract Private sector and external finance for irrigation development;
- 3.21 Support efforts to increase the capacity of on-farm water harvesting, storage, and use; develop groundwater and improve drainage and flood management.

#### *Promote high-value diversified agriculture*

Productive diversification will enhance market- and climate-resilience, support soil fertility and biodiversity, broaden nutritional diversity and provide a round-the-year food supply. This is an alternative way to increase land productivity in addition to sustainably increasing yields.

High impact commodities are those agricultural goods in which Rwanda's long-term comparative advantage is likely to be in largely labour-intensive products with a high-value per hectare and/or a substantial contribution to food and nutrition security. Commercialisation in these value chains has higher probability of recapturing the domestic market, diversifying exports, and increasing farm profitability. However, substantial public and private investments will be needed to address current bottlenecks and mitigate farmer risks. Traditional Export Commodities like tea, coffee, and pyrethrum, remain important and still have significant growth potential. The private sector in these value chains is relatively mature and suitable for engagement toward increasing export revenues and household incomes.

#### ***Policy actions***

- 3.22 Promote labour-intensive yet high-value sector development e.g. horticulture; and diversified high value crops;
- 3.23 Expand the range of traditional export crops (coffee and tea) by diversifying into specialty crops for export.

### Increasing Animal resources productivity

The livestock sector has become increasingly productive over the past years and the aim is to sustain this growth. Efforts to address animal breeds, feed, health service, markets and value addition are needed to increase livestock productivity.

As with other livestock products, demand for fish is outpacing domestic production. A highly nutritious food, fish is identified as a sub-sector with great untapped potential, both to improve rural incomes but also to provide important micro-nutrients and proteins to people's diets. Bees and commercial insects' production systems can provide an opportunity for income diversification, specifically for women, youth, and smallholders.

#### *Livestock Development*

In addition to large animals, small livestock also contributes to farm income, resilience, and enhanced nutritional status of farming families. Substitution of surplus chicken and pig meat for domestic red meat consumption would also reduce domestic meat prices and enable an increase in meat export. Taking advantage of the potential of poultry and pig sectors would require substantial investments in promotional activities to change consumer preferences.<sup>67</sup>

Availability of sufficient animal feed is a crucial element in promoting livestock development Rwanda. Further analysis is needed on resources, specifically land, for animal feed production and feed conversion rates. There is a need for an integrated approach to livestock feed security at household and national levels.

The main factors impacting on disease incidence in Rwanda, are related to cross-border animal movement, the inherent consequences of the breed-improvement programme<sup>68</sup> and other factors such as the prevalence of ticks. The changing climate is likely to affect prevalence and incidence of current pest and diseases as well as increasing new ones.

#### **Policy actions**

- 3.24 Support farmers to engage in mixed farming systems to enhance nutrient recycling and to reinforce pest and disease management;
- 3.25 Train producers to design their production system including housing and feed management suited to their own context;
- 3.26 Promote fodder banks at community/household level as well as the production of seasonal grasses/perennial fodder trees in community forest and fallow lands;
- 3.27 Promote availability of fodder seeds and planting materials to improve communal feeding schemes and commercial improved fodder production;
- 3.28 Incentivise private sector investment in animal feed processing;

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67 ILRI (2017) DRAFT Livestock Situational Analysis for the Livestock Master Plan

68 Improved breeds of dairy cows are distributed to vulnerable households through the Girinka program. However, these cows with exotic bloodlines are more susceptible to endemic diseases (e.g. tick-borne diseases) than local cows.

- 3.29 Scale up the Sustainable Intensification Decision Support System (SIDESS) planning tool for existing ruminant livestock to national level<sup>69</sup>;
- 3.30 Enhance the capacity of the veterinary services for disease surveillance, vaccination, diagnostic capacity, and early warning and rapid response;
- 3.31 Promote one health system to reduce the impact of disease emergence events on humans and livestock;
- 3.32 Introduce an animal tagging system and livestock database to facilitate disease management and financial products for livestock farmers;
- 3.33 Support community breeding practices and animal selection to improve animal genotype;
- 3.34 Strengthen artificial insemination (AI) in livestock by capacity building of farmers, community animal health workers, and extension workers;
- 3.35 Establish breeding centres;
- 3.36 Promote small stocks;
- 3.37 Promote private sector investment and management of logistical facilities for quality enhancement of animal products;
- 3.38 Promote processing of animal products and the quality assurance.

#### *Fisheries and Aquaculture Development*

About eight percent of the country (210,000 ha) is covered by water, offering great potential for fisheries and aquaculture, so far still in their infancy. The issues that have led to the fishery and aquaculture sector being underdeveloped include in particular limited availability of quality fish seeds and feed and depletion of fish resources in lakes. Interventions focus on availing access to knowledge, training, and inputs essential for farmers to successfully engage in fisheries and aquaculture.

#### **Policy actions**

- 3.39 Support community level, and private sector fingerling production and restock lakes and ponds with appropriate breeds;
- 3.40 Build the capacity and incentivise quality fish feed production;
- 3.41 Promote private sector investment in cage fish farming;
- 3.42 Promote marketing of fish and aquaculture products through establishment of appropriated infrastructures (cold room and cold truck);
- 3.43 Support value addition of fish and aquaculture products.

#### *Apiculture development*

Beekeeping and insect farming has the potential to provide income for rural households, particularly for small-holder women farmers. Emphasis will be placed on promoting integration of beekeeping and insect farming with other agricultural activities.

#### **Policy actions**

- 3.44 Provide training and improved access of inputs, specifically improved hives;
- 3.45 Regulate coexistence of honey production and disease control in crop production systems
- 3.46 Promote value addition and agro-/eco-tourism;
- 3.47 Capacity building in honey and apiculture products market standards and requirements.

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<sup>69</sup> SIDESS tool is currently being implemented in Rwanda by the World Bank and Princeton University

## Building resilience in farming communities

Farmers and rural communities are vulnerable to a wide range of risk factors that have significant impact on food security and public health. It is therefore required to build response systems and resilience against adverse events, such that the impact on communities is minimised.

### *Effective response to disasters for farming communities*

Disasters cannot be predicted, but some cannot be avoided. When disasters hit, the response must be effective and timely.

#### **Policy actions**

- 3.48 Build and communicate risk management framework addressing current and future risks;
- 3.49 Develop the capacity to respond to food and agriculture threats and crises (tools for prediction, rapid needs assessment and response, development and updating of preparedness plans and linking relief and rehabilitation to sustainable development).

### *Weather and climate services and early warning*

Any activity to reduce hazard-related losses or optimise gains, demands better weather and climate services. Having information on weather forecasts, seasonal forecasts, or logistic disruption anticipation would support decision-making by farmers (informing farm management cycle, planting, harvesting, etc.) and agricultural institutions (planning and programming).

#### **Policy actions**

- 3.50 Develop and implement an early warning and disaster response system (seasonal forecasting and monitoring);
- 3.51 Coordinate weather and climate services with capacity building and data collection, processing, analysis and dissemination.

### *Agriculture Insurance*

Agricultural risk can partially be mitigated by transparent and market-oriented pricing mechanisms. Risk can also be transferred through the development and promotion of micro-insurance products and services. These relate to both production and market risks, recognizing the need for initial subsidies to promote insurance products.

#### **Policy actions**

- 3.52 Develop and Implement crop and livestock insurance strategy.

### *Asset building of vulnerable groups*

Vulnerable farmers are also those most exposed to shocks, including climate-related shocks and food price volatility. They are exposed to land degradation and own too little land to farm their way out of poverty. A solution has been to distribute cows to vulnerable households through the Girinka programme in order to increase the return on their land. The linkages between agriculture and social protection programmes ensure that services are targeted towards the asset building programme, to enhance opportunities for food production and income. Experience has shown that distribution of small-stock is as well suitable for poorer communities.

#### **Policy actions**

- 3.53 Broaden the focus from cows to distribution of small livestock;

- 3.54 Strengthen the linkages between existing agricultural support and the VUP social protection programme.

## Pillar 4: Inclusive Markets and Off-Farm Opportunities

This pillar promotes improved productivity and inclusiveness of agricultural market systems and increased off-farm opportunities and competitiveness of diversified for agricultural products, for domestic, regional, and international markets. Moreover, the objective is to promote reliable access to affordable and healthy diets for the Rwandan consumer, in order to meet national objectives on poverty reduction, food security, and nutrition. This will be achieved by strengthening post-harvest handling and market linkages throughout the value chain with hard and soft infrastructure; secondly, to increase awareness and access for of healthy diets for the consumer; thirdly, to promote food safety and access to higher end markets with expanded access SPS and quality standards certification. Finally, to streamline value chains to exploit the growing opportunities for export diversification.

### Post-harvest Management and Aggregation

Post-harvest handling is strengthened through the development of adequate capacities, technology, and infrastructure. If Rwandan farmers and agri-food processors can reduce post-harvest losses, they will be able to capitalize on supplying local farmers' markets or growing domestic markets in urban centres. The transformation of agriculture will seek to reallocate workers from low-productivity agriculture into a high productivity jobs and hence bring more people out of poverty. Agri-food processing offers a viable solution for an economy like Rwanda's where the cost of labour is low.

#### *Post-harvest Management*

Efficient Post-harvest management is key for reaching markets with minimised post-harvest losses. Current post-harvest losses range from roughly 15% to about 50% depending on value chain and season<sup>70</sup> to the detriment of incomes and food security. Improving the situation broadly requires investments in infrastructure and innovative logistics models

Appropriate operation and maintenance activities ensure the efficiency, effectiveness, and sustainability of the market infrastructure, yielding the expected benefits and meeting the necessary standards. This includes soft components such as ICT systems and other operational systems.

#### **Policy actions**

- 4.1 Enhance all season road connectivity of production sites to agricultural market centres in the districts;
- 4.2 Coordinate with the private sector to minimise post-harvest losses by creating suitable post-harvest handling and storage facilities (drying grounds, warehouses, silos, cold chain facilities, community market structures and collection centres, whole-sale markets, and export logistics facilities such as packing houses;
- 4.3 Promote innovative private sector models for post-harvest handling facility management and value addition.

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<sup>70</sup> MINAGRI, 2018, PSTA 4 (summarising relevant studies conducted)

### *Promote contract farming and Productive Alliances*

Collaboration and contracts between farmers, input suppliers, processors, and traders create more inclusive markets and positive spill overs when an enabling and transparent legal framework is laid out, ensuring contract enforcement and thus trust.

Contract farming is an effective means of coordination and risk-managing instrument leading to vertical integration. To curb-side selling and enhance farmers' adherence to delivery contract commitment, it is essential that buyers and value chain stakeholders also adhere to contract terms such as timely payment to farmers.

#### **Policy actions**

- 4.4 Develop the legal framework to ensure transparency in agreements and enforcement in contracts;
- 4.5 Build the capacity and create awareness on the benefits of contract farming.

### *Promoting off-farm opportunities – especially for women and youth*

Off-farm opportunities are central for income diversification in rural areas and plays an important role in establishing forward linkages to urban economies. Furthermore, they are critical for creating rural jobs against the backdrop of population growth and rapid urbanisation.

Government interventions are particularly relevant for supporting entrepreneurship opportunities women and youth, and these two groups will require specific attention and tailored approaches. While women are well-represented in high-level political positions, they are generally underrepresented in business: just 28% of establishments are managed by women<sup>71</sup>, and they are less likely to be financially included than men<sup>72</sup>. Youth are less likely to own land and generally have more education relevant for off-farm sectors<sup>73</sup>. Moving away from a dependency mind-set and promote self-reliance, youth's enthusiasm will be harnessed and supported to create jobs. Targeting students in agri-sciences and increasing their levels of engagement in the sector early on will foster long term economic growth.

GoR priorities in this area are currently governed under the National Employment Programme, which ensures coordinated GoR actions. Specific to agriculture, it is a priority to support value addition and agri-business projects. Farmers' organizations, unions and collaborations can aid farmers in finding additional off-farm opportunities, sparking a change in mentality. Skills needed will be fostered by GoR to ensure citizens be able to follow a broader range of value addition in the economy. This policy also sets the tone in an enabling regulatory framework and a financial structure to allow farmers access to off-farm prospects.

#### **Policy actions**

Support entrepreneurship and agriculture value addition;

- 4.6 Develop financial instruments and capacity building for off-farm opportunities related to agriculture;
- 4.7 Coordinate with national programs for employment to have sufficient focus on rural areas;
- 4.8 Develop affirmative actions that promote gender mainstreaming at all levels;

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71 NISR, Establishment Census, 2014

72 FinScope, 2016

73 NISR, National Household Survey 2013/14 (EICV 4)

#### 4.9 Develop projects that support youth in agriculture sector empowerment.

### Agricultural Products for Healthy Diets and Consumer Markets

The Government remains dedicated to achieving food and nutrition security for all, and the agriculture sector plays the leading role in meeting this objective. This includes facilitating well-functioning food markets with adequate safety-nets in emergency situations; promoting nutritious diets, promoting, and enforcing food safety standards. Additionally, agriculture is an important sector for exports with a range of nascent products to complement the traditional exports.

#### *Promoting Nutrition and Healthy Diets*

Programmes to promote the production and consumption of nutritious foods have achieved some success and can be scaled up. Nutritional awareness and education programmes are key to bring about behaviour change towards a more nutritious and healthy diet. Moreover, consumer behaviour has effect on the production: without a well-functioning and stable market, farmers will refrain from producing nutritious products. Finally, food and nutrition security are a cross-sectoral topic, so effective government coordination is critically important.

#### **Policy actions**

- 4.10 Develop household nutrition guidelines;
- 4.11 Develop practical skills training from their local Community Health staff, extensionists, and Farmer Field Schools;
- 4.12 Expand and revise kitchen garden programmes;
- 4.13 Scale up the availability of bio-fortified foods;
- 4.14 Coordinate with social protection programmes to distribute small livestock;
- 4.15 Promote local procurement of diversified nutritious foods for school meals;
- 4.16 Mainstreams and coordinate efforts in close partnership with MINISANTE and MINALOC to identify and address specific dietary gaps through district investments in agriculture and rural development.

#### *Promote food stability through enhanced Rwandan Strategic Grain Reserve*

The Strategic Grain Reserve has been put in place to ensure food stability. However, with a growing population, there will be a need to scale it up and upgrade the management system to ensure an efficient and effective response adverse weather events. This includes improved data collection for early warning, decentralised food storage for readiness.

#### Policy actions

- 4.17 Enhance data collection and analysis to provide early warning for food security;
- 4.18 Decentralize the grains to the district and sector level to enhance food security readiness;
- 4.19 Strengthen collaboration with private sector investors in storing food to be released during a supply shock.

#### *Market and Trade Information Systems (MTIS)*

Well-functioning food commodity markets are an important factor to secure favourable prices for consumers and farmers. Being able to afford a food-basket that ensures a sufficient calorie intake, strikes at the very definition of poverty, so having access to food at the cheapest price possible is at the core of

poverty reduction. However, there are relatively large price differences in markets across the country<sup>74</sup>, which is a clear indication of current inefficiencies in food commodity markets. Equally, farmers and traders will benefit from having timely access to accurate market information for making decisions on production, marketing, and finance. Hence, there are large untapped potential gains of trade for consumers and farmers alike. Digital media and electronic exchanges provide an opportunity to improve farmers' access to such information but will require ongoing attention to effective models of providing these services.

### ***Policy actions***

- 4.20 Expand the body of publicly available data on prices and production, and facilitate market linkages between smallholder farmers, cooperatives, traders, and the processing industries, and provides a mobile phone payment gateway to facilitate transactions;
- 4.21 Establish e-auctions for coffee and tea to increase markets for quality coffee and tea. This will extend existing auctions such as Cup of Excellence.

### *Food Safety and Quality Standards*

Food safety is critical for maintaining public health as well as accessing high-end consumer markets. With growing urban markets in the region and increased readiness for export diversification among producers, this will be increasingly important. However, there is currently relatively few Rwandan companies certified for international standards such as HACCP, FSMS, QMS, and Global GAP. The agricultural sector has limited access to quality assurance services and few domestic institutions are accredited to provide certification. Therefore, on the one hand, there is a need to increase awareness and access to standard certification. On the other hand, basic food standards are to be upheld through inspection and enforcement. Furthermore, there is currently limited capacity to assess risks of importing important inputs to agricultural production.

### ***Policy actions***

- 4.22 Develop and Enforce standards for the public health and to enable products' access to domestic, regional, and international markets;
- 4.23 Strengthen certification and inspection services;
- 4.24 Develop the capacity and create awareness for the necessity for standards and certification
- 4.25 Develop infrastructural capacity to enforce safety, compliance and standards.

## Increased Agricultural Production for Export Markets

Rwanda aims to become a recognized supplier of high-quality, sustainably produced agri-food products in the region and across the world.

Rwanda's traditional export sectors are coffee and tea, which currently present on the global markets. Increasing export revenues from these products will occur through increasing the production and branding Rwandan products so the fetch higher prices. Increasing production of traditional export crops can occur through increased use of inputs, replacing ageing coffee trees, and increasing the proportion of fully washed coffee.

Tea revenues will be increased through expanding the production area by using out-grower models.

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<sup>74</sup> MINAGRI, E-soko data 2016. For instance, over the course of 2015, the median price of fresh milk in Rutsiro District was 137 per cent below the median price in Rusizi District while median prices of Irish potatoes were roughly 50 per cent lower than in Rusizi District. These figures are medians over the year, hence they do not account for short-term local price shocks.

Opportunities for export diversification are emerging with new flight connections to growing urban markets on the continent and beyond. This opens opportunity for exporting high-value high value products of horticultural and animal products.

Furthermore, the growing regional and continental markets present opportunities for increased cross-border trade (formal and informal).

### ***Policy actions***

- 4.26 Brand and promote Rwanda agricultural products to penetrate the speciality markets;
- 4.27 Continue interventions to increase production of coffee and tea;
- 4.28 Increase efforts to capture local, regional and continental markets;
- 4.29 Ensure collaboration with other government institutions to implement cross-border trade agreements and streamline the coordination mechanism.

### ***Implementation Framework***

In Rwanda, there are numerous government agencies interfacing directly with MINAGRI. In addition to these, there are a myriad of private (agribusiness, financial institutions), public (research institutes, schools, universities), non-governmental and international stakeholders, who play key roles in how farmers are served.

Decentralisation of the Rwandan public administration empowers local governments to deliver agricultural policies to farmers and, more broadly, serve as the focal point in representing the needs of the local communities and coordinating multi-sector responses. Local governments have absorbed the functions of the former local branches of MINAGRI and rely on a new partnership with the central government. Going forward, it is key to ensure that feedback loops between the central and local levels work effectively, and that proper checks and balances are in place.

Many policy areas touching on agriculture - such as nutrition, water management, environment, climate change, land use, trade, or rural infrastructure - require strategic coordination between public and private institutions and between different ministries and implementing agencies. The complementarity between the mandates of MINAGRI and other central government ministries is defined on sector-specific agendas. However, increased efforts will continue to be made to clarify, adjust, or put in place the coordination mechanisms that are required for effective management of the interfaces and of cross-cutting domains.

## **Institutional Framework**

MINAGRI is the key leading institution to deliver on the implementing of the four pillars of this policy through the core mandate of MINAGRI namely (i) Sectoral policy setting, (ii) Sectoral strategic planning; (iii) Sectoral M&E; (iv) Sectoral capacity building. MINAGRI will rely on its implementing agencies to deliver on the National Agriculture Policy through their respective mandates.

Given that agricultural development involves several line ministries and that the actual development activities take place at decentralised levels of districts, sectors, and cells, MINAGRI will closely collaborate in the policy implementation with a range of public institutions (MINALOC, MINECOFIN, RDB, MINICOM, MINISANTE, MoE, MINILAF, MIFOTRA, MININFRA, MINEDUC, MYICT) through the creation of collaborative platforms.

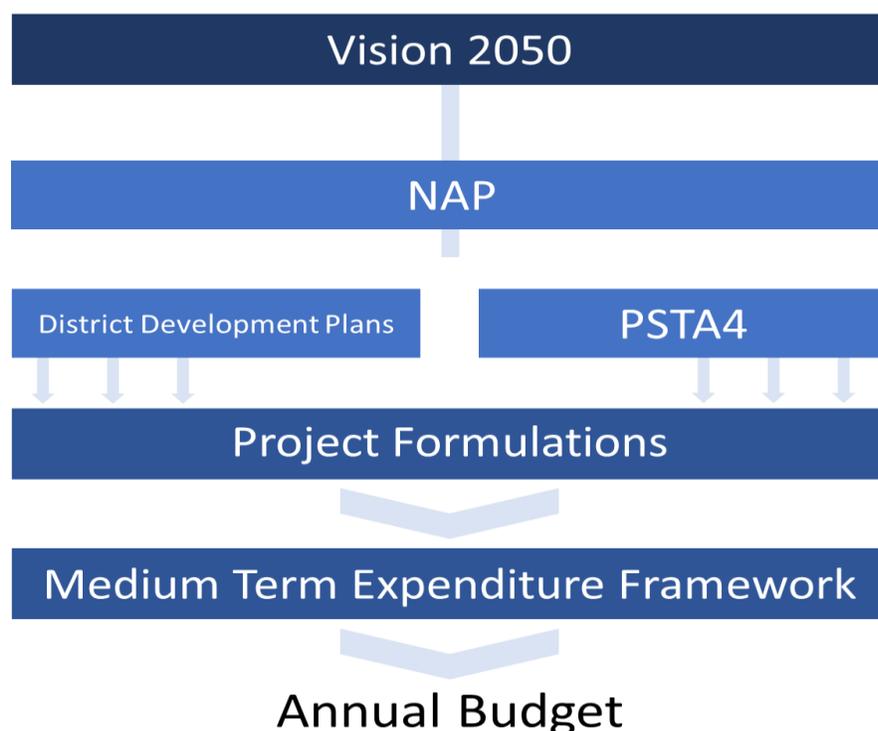
MINAGRI will engage all the stakeholders of the sector in the implementation of this policy through the following mechanisms:

- i. **Agricultural Sector Working Group (ASWG):** forum for coordination around key agricultural development issues. Members include development partners, NGOs, the private sector, civil society, farmer organisations, financial institutions, and Government agencies.
- ii. **Sector-Wide Approach (SWAp) Group:** brings together MINAGRI and key budget support development partners to discuss issues related to budget support in the agriculture sector.
- iii. **Sub Sector Working Groups (SSWGs)** of four permanent specialised clusters: crop development; livestock development; agribusiness, markets, and export development; and planning and budgeting. SSWGs seek to enhance stakeholders’ roles in the processes of planning, monitoring, advisory, coordination and financing for the sector.
- iv. **Forward Looking Joint Sector Review (FL-JSR)** forum brings together the Sector Working Group (SWG) stakeholders to discuss prioritised areas in the implementation of the Strategic Plan for Transformation of Agriculture for the next fiscal year.
- v. **Backward Looking Joint Sector Review (BL-JSR)** forum brings together the Sector Working Group (SWG) stakeholders to monitor progress in the implementation of the Strategic Plan for Transformation of Agriculture for the past fiscal year.

## From Policy to Projects

The NAP is guided by the Vision 2050 and incorporates the priorities of the NST. Policy actions that do not require budgets will be implemented through a regulatory reform agenda. Policy actions with budget requirements will be implemented through the Sector Strategic Plan for Agriculture (PSTA 4) and District Development Plans, from which programmes will be formulated. If the projects are accepted, they will be introduced to the Medium-Term Expenditure Framework (MTEF) and the Annual Budget for subsequent implementation.

**FIGURE 2: FROM POLICY TO IMPLEMENTATION**



## Strengthening the system's capacity to deliver

An institutional assessment<sup>75</sup> was conducted as part of PSTA 4 to examine the adequacy of current structures and systems in the agriculture sector to deliver the transformational agenda set out here. Interventions will follow to enhance that capacity, targeting three levels:

- **System** – the structures for intra- and inter-sectoral coordination and collaboration;
- **Organisation** – the structure, organisational culture, capacity, and ways of working within MINAGRI and its implementing agencies;
- **Individual** – the skills and attitudes needed from staff and leadership training to make a success of the new enabling role.

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75 Institutional capacity assessment conducted by a consultant contracted by the World Bank on behalf of MINAGRI.

## ANNEX: IMPLEMENTATION PLAN OF THE NATIONAL AGRICULTURE POLICY

Policy Option	Policy Objective	Policy Actions	Responsible Entities	Timeline
<b>Pillar 1: Enabling Environment and Responsive Institutions</b>				
<b>Outcome: effective and efficient public services in the agriculture sector delivered to all sector stakeholders.</b>				
Public Investment Principles	To spend public funds efficiently and effectively	1.1. Focus on projects that have positive economic return and social desirability but little appeal for private investors; 1.2. Partner with private sector to invest in business operations that are not purely attracting the private sector investment 1.3. Address market failures by providing targeted interventions; 1.4. Enhance coordination to ensuring a conducive enabling environment; 1.5. Audit of Government assets prior to privatization by private sector actors	MINAGRI, MINECOFIN and RDB	Continuous
Promoting Private Sector Investment and Finance for Agriculture	To increase finance for agriculture	1.6. Conduct a feasibility study for Agriculture financing mechanisms and Implement recommended mechanisms 1.7. Support the demand-side in financial markets through: financial literacy campaigns; encouraging farmers to join savings groups and cooperatives; and supporting entrepreneurs create bankable business plans (especially women and youth); 1.8. Encourage the supply of agricultural finance by providing incentives for financial product development for agriculture; 1.9. Provide technical assistance to SACCOs and MFIs in agricultural financing;	MYICT, MINAGRI, MINECOFIN, MINICOM	2018-2019  Continuous

		<p>1.10. Establishing public databases of farmers and implement measures that improve their credit worthiness.</p> <p>1.11. Develop value chain financing by regulating value chain instruments and contract enforcement</p>		
	Promotion and aftercare for fully private projects	<p>1.12. Provide a transparent, stable, and predictable regulatory framework in agriculture on land market, inputs, technology registration, inspection, and certification</p> <p>1.13. Facilitate access to information for investors, including procedures as well as linking to potential domestic partners through Forums, Online portals, Informational handout materials</p> <p>1.14. Improve coordination between public and private institutions in investment process through Public and Private Dialogues and improved Value Chain Platforms for agro-investors.</p>	MINAGRI, RDB MITEC	2018-2024
	Enrich Private Investment with Agricultural Development Fund	<p>1.15. Establish the Agricultural financing mechanisms to leverage additional private capital and resources toward national objectives by providing financial incentives for private sector engagement</p> <p>1.16. Formulate PPP projects under the PPP law of 2016, using models tailor-made for the individual project.</p>	MINAGRI, MINECOFIN, PSF	2018-2019
Responsive institutions	Enhance Institutions with reforms	<p>1.17. Revise organisational structures of MINAGRI and its implementing agencies to be more responsive to stakeholder needs;</p> <p>1.18. Decentralize responsibility to the local level as much as possible contingent on capabilities to take on the duties;</p> <p>1.19. Ensure that feedback loops between the central and local levels of government work effectively.</p>	MINAGRI, MINALOC, MYICT	2018-2024

		1.20. Establish a functional management and information system for public joint planning and monitoring with a private sector entry portal		
	Public Private Dialogue (PPD) and value chain platforms	1.21. Establish effective continuity of PPD platforms for Agri-food stakeholders 1.22. Promote national value chain platforms, implementing joint value chain action plans with co-funding for relevant technical assistance and capacity building district level platforms.	MINAGRI, PSF, RDB	Continuous
	Evidence-based Policymaking	1.23. Create an IT unit to implement a Common Data Warehouse, a statistics unit at the ministry level, and upgrade monitoring, evaluation, and learning (MEL) capabilities; 1.24. Create new and continuously adjust large ongoing programmes (for example CIP and Girinka) as new evidence emerges.	MINAGRI, MINALOC	2018-19
<b>Pillar 2: Technological Upgrading and Skills Development</b>				
<b>Outcome: technological upgrading and capacitated farmers and rural value chain actors who make informed decisions and profitably engage in off farm activities.</b>				
Research Agenda for Technological Upgrading	Crop	2.1 Promote research to develop high yielding crop varieties resistant to biotic and abiotic stresses (e.g. disease, drought, and pests); 2.2 Invest in domestic production and multiplication of quality/certified planting materials by enhancing research efforts to develop improved seed varieties and improve their availability; 2.3 Promote research on nutrient-rich crops through bio-fortification, to position Rwanda as a trusted source of bio-fortified food for the region; 2.4 Support research in Agriculture Biotechnology. . 2.5 Conduct research on post-harvest management technologies, quality preservation and value addition 2.6 Improve technology dissemination systems.	MINAGRI	2018-2024

		2.7 Fast-track the biosafety regulatory framework		
	Soil system	<p>2.8 Update soil maps and acquire and test special equipment used in dosing fertilizers according to the soil type. A follow up strategy on dissemination of information on soil type will be developed. .</p> <p>2.9 Research on bio-fertilizers technologies and organic fertilizer use among farmers.</p> <p>2.10 Concentrate research efforts on tree/crop/soil interfaces and develop suitable models and technologies to increase agroforestry.</p> <p>2.11 Promote urban agriculture through introducing production technologies that are specific to urban agriculture</p> <p>2.12 Focus on domestic production and multiplication of quality planting materials in order to increase seedlings for agroforestry trees.</p> <p>2.13 Conduct research on appropriate irrigation technologies</p>	MINAGRI, MINILAF	2018-2024
	Animal resources	<p>2.14 Improving local breed development to enable drought survival and disease resistance.</p> <p>2.15 Support community breeding practices and animal selection to improve animal genotype, as well as genetic diversity to achieve resilience through maintenance of local varieties and breeds.</p> <p>2.16 Establish conservation and breeding centres.</p> <p>2.17 Conduct research on animal diseases, vaccines and drugs</p> <p>2.18 Conduct research on increasing nutritious value of fodder</p> <p>2.19 Promote research on diversified animal products</p> <p>2.20 In partnership with private sector, conduct research on animal feed formulation</p> <p>2.21 Strengthen the capacity for animal research capacity</p> <p>2.22 Conduct research on Animal products value addition</p> <p>2.23 Upgrade the outreach system for animal technology dissemination</p>	MINAGRI, PSF	2018-2024

	Fisheries and Aquaculture	<p>2.24 Prioritize Fish feed formulation and production technology development</p> <p>2.25 Research on post-harvest loss reduction, fish quality and value addition</p> <p>2.26 Conduct research on fingerlings production</p> <p>2.27 Skill development in aquaculture research</p>	MINAGRI, PSF, MINICOM	2018-2024
	Market research	<p>2.28 Identify products and varieties preferred by consumers depending on targeted markets (rural/urban, regional, international), and which will perform positively under current and future agro-climatic zones;</p> <p>2.29 Focus on domestic market research on identifying dietary gaps, mapping consumption patterns and the links with production, trade analysis, impact of regulations;</p> <p>2.30 Conduct regional and international markets research on identifying Rwanda's comparative advantage;</p> <p>2.31 Support research in identification of niche products and finding cost effective and sustainable solutions to logistical challenges; as well as meeting quality and safety standards at all stages of the value chain;</p>	MINAGRI, MINICOM	Continuous
Increasing Research Capacity	Upgrading Research Infrastructure and Human Resources	<p>2.32 Upgrade Research equipment and online repository.</p> <p>2.33 Rehabilitate and upgrade public research infrastructures. For example, new laboratories, research stations, greenhouses, hydroponic facilities, post-harvest research facilities, and gene banks;</p> <p>2.34 Increase human resources for conducting research in key areas. Adequate resources will be allocated to capacity building of researchers and for retaining highly qualified scientific staff.</p>	MINAGRI	2018-2024
	Fostering Collaborative Networks	2.35 Create and nurture collaborative networks to leapfrog technologies in a fast and cost-effective way and tap into resources and capabilities possessed by domestic and international research institutions;	MINAGRI, MINALOC	2018-2024

		<p>2.36 Encourage Rwandan scientists and researchers to access national and international research facilities and undertake exchange visits to develop regional/international research networks.</p> <p>2.37 Allocate funds to acquire patents and licenses through research networks. In that way, technologies developed in other countries will be availed in Rwanda easily for the good of sector beneficiaries;</p> <p>2.38 Ease the technology testing in Rwanda</p> <p>2.39 Establish “Research-into-use platforms” to improve dialogue and links between research and extension.</p>		
Innovation and skills	Promote Innovation	<p>2.40 Establish a mechanization centre to prototype and test mechanization technologies</p> <p>2.41 Promote mechanization at the farm-level and across the value chains.</p> <p>2.42 Create mechanization service centres to support operation and maintenance of the equipment</p> <p>2.43 Foster labour-saving technologies, especially to reduce women’s workload and allow them to allocate more time to other productive activities and child feeding and care.</p>	MINAGRI, MINALOC, MIGEPROF	PSF, 2018-2024
Extension Services	Promote Extension Service	<p>2.44 Broaden the public extension services to include business orientation, nutrition, gender and savings, using weather and climate information, IPM and climate smart agriculture</p> <p>2.45 Promote effective knowledge dissemination and feedback mechanisms</p> <p>2.46 Promoting private sector involvement in extension services</p> <p>2.47 Upgrade institutional frameworks: enforcing a performance evaluation and incentive system to improve the level and accountability of the advisory services delivered.</p>	MINAGRI, MINALOC, PSF	Continuous

Promote Skills Development	Enhancing the skills and capacities of farmers	<p>2.48 Use institutional structures such as a multi-stakeholder oversight and monitoring committees to help ensure coordination and market-responsiveness in curricula development and teaching.</p> <p>2.49 Include food industries and provision of services to farmers (e.g. mechanic repairs, masonry etc.) in TVET and cover skills like management, marketing, product packaging and labelling.</p>	MINAGRI, MINISTRY OF EDUCATION, MINICOM	Continuous	
	Youth	<p>2.50 Pilot a new approach where private sector professionals will teach content to out of school youth, through multi-media programs.</p> <p>2.51 Ensure that learning curricula is also accessible and relevant to women and young people with minimal formal education.</p>	MINAGRI, PSF	Continuous	
	Women	<p>2.52 Provide targeted support to women to access suitable financial products for income-generating on-farm and off-farm activities.</p> <p>2.53 Support access to start-up funds for women to start or grow their agribusiness enterprises.</p>	MINAGRI, PSF	Continuous	
<b>Pillar 3: Productivity and Sustainability</b>					
<b>Outcome: increased productivity, nutritional value and resilience through sustainable, diversified, and integrated crop, livestock, and fish production systems.</b>					
Increasing Productivity Sustainably	Land	Increase on-farm productivity sustainably	<p>3.1 'Horizontal zoning' of crops and livestock based on their comparative advantage and on an evidence-based understanding of local conditions (soil, climate etc.);</p> <p>3.2 Promote the adoption of integrated soil fertility management which combines agri-environmental practices, resource recovery and reuse of fertilizer-enriched products through incorporating manure, crop residues and composting in current farming systems;</p> <p>3.3 Support the increase in organic fertilizer production and utilization training as part of ISFM practices in conjunction with the gradual liberalization of fertilizer supply;</p>	MINAGRI MINALOC MoE	Continuous

		<p>3.4 Promote Integrated Pest Management technologies to control pests and diseases. Natural pest control mechanisms are promoted to the extent possible, with the least possible disruption to the agro ecosystem, and train farmers in safe pesticide handling and risks associated with pesticide use;</p> <p>3.5 Build local private sector led seed systems by facilitating access to irrigation, seed conditioning and storing capacity;</p> <p>3.6 Support production and use of soil specific fertilizer blends;</p> <p>3.7 Facilitate access to inputs by promotion of use of seed and fertilizers by increasing agro-dealership networks;</p> <p>3.8 Promote saving for input mechanisms and value chain integration;</p> <p>3.9 Promote and support production of high value commodities.</p>		
	Address land fragmentation	<p>3.10 Zoning and protecting agriculture land, which requires close coordination at decentralized levels. This will be based on detailed land-profiling to determine use and potentials of the land.</p> <p>3.11 Gazetting agriculture land using the Agriculture Land Information System (ALIS), by ensuring plots to be registered and entered on the ALIS platform.</p> <p>3.12 Encourage farmer cooperation and cooperatives to improve productivity, increase production and commercialisation and address the challenge of land fragmentation.</p> <p>3.13 Develop policy interventions on strengthening the legal and enabling environment in order to improve (formal) land market participation in rural areas, especially through leasing.</p> <p>3.14 Encourage consolidation of smaller plots to increase scope for service delivery and mechanisation.</p> <p>3.15 Promote sustainable land husbandry practices to address soil erosion and degradation.</p>	MINAGRI MINALOC MINILAF	Continuous
	Promote sustainable land husbandry practices to	3.16 Continue efforts on terracing while involving the local communities;	MINAGRI MINALOC	Continuous

	address soil erosion and degradation	3.17 Encourage use of a wide range of cost-effective erosion control solutions such as structures: check dams, soils/water detention trenches, cut off drains, waterways; erosion control measures: tree belts, contour belts, grass strips, contour bunds, planting of fodder grasses on bunds/ridges, use of permanent, perennial vegetation on contours, etc.; and agro-forestry: intercropping, integration of trees on farm plots, tree belts, protective forests, food production and nitrogen fixing, erosion control, etc.	Private sector MoE	
	Promoting Irrigation and Sustainable Water Management	3.18 Increase the area under irrigation 3.19 Promote private sector- led models of irrigation scheme management. Establish maintenance fee collection for irrigation schemes 3.20 Attract Private sector and external finance through the Public Private dialogues 3.21 Support efforts to increase the capacity of on-farm water harvesting, storage and usage; develop groundwater use and improve drainage and flood management.	MINAGRI RDB MINALOC Private sector MoE	Continuous
	Promote high-value diversified agriculture	3.22 Promote labour-intensive yet high-value sector development e.g. horticulture; and diversified high value crops 3.23 Expand the range of traditional export crops (coffee and tea) by diversifying into specialty crops for export.	MINAGRI Private sector	Continuous
Increasing Animal resources productivity	Livestock Development	3.24 Support farmers to engage in mixed farming systems to enhance nutrient recycling and to reinforce pest and disease management; 3.25 Train producers to design their production system including housing and feed management suited to their own context; 3.26 Promote fodder banks at community/household level as well as the production of seasonal grasses/perennial fodder trees in community forest and fallow lands;	MINAGRI MINALOC MINISANTE Rwanda council of veterinary doctors Private sector Civil Society	Continuous

		<p>3.27 Promote availability of fodder seeds and planting materials to improve communal feeding schemes and commercial improved fodder production;</p> <p>3.28 Incentivise private sector investment in animal feed processing;</p> <p>3.29 Scale up the Sustainable Intensification Decision Support System (SIDESS) planning tool for existing ruminant livestock to national level<sup>76</sup>;</p> <p>3.30 Enhance the capacity of the veterinary services for disease surveillance, vaccination, diagnostic capacity, and early warning and rapid response;</p> <p>3.31 Promote one health system to reduce the impact of disease emergence events on humans and livestock;</p> <p>3.32 Introduce an animal tagging system and livestock database to facilitate disease management and financial products for livestock farmers;</p> <p>3.33 Support community breeding practices and animal selection to improve animal genotype;</p> <p>3.34 Strengthen artificial insemination (AI) in livestock by capacity building of farmers, community animal health workers, and extension workers;</p> <p>3.35 Establish breeding centres;</p> <p>3.36 Promote small stocks;</p> <p>3.37 Promote private sector investment and management of logistical facilities for quality enhancement of animal products;</p> <p>3.38 Promote processing of animal products and the quality assurance.</p>		
	Fisheries and Aquaculture Development	<p>3.39 Support community level, and private sector fingerling production and restock lakes and ponds with appropriate breeds</p> <p>3.40 Build the capacity and incentivise quality fish feed production,</p> <p>3.41 Promote private sector investment in cage fish farming</p>	<p>MINAGRI</p> <p>Private sector</p> <p>MINALOC</p>	Continuous

<sup>76</sup> SIDESS tool is currently being implemented in Rwanda by the World Bank and Princeton University

		<p>3.42 Promote marketing of fish and aquaculture products through establishment of appropriated infrastructures (cold room and cold truck)</p> <p>3.43 Support value addition of fish and aquaculture products</p>		
	Apiculture development	<p>3.44 Provide training and improved access of inputs, specifically improved hives.</p> <p>3.45 Regulate coexistence of honey production and disease control crop in crop production systems</p> <p>3.46 Promote value addition and agro-/eco-tourism</p> <p>3.47 Capacity building in honey and apiculture products market standards and requirements</p>	<p>MINAGRI</p> <p>MINALOC</p> <p>Private sector</p>	Continuous
Building resilience in farming communities	Effective response to disasters for farming communities	<p>3.48 Build and communicate risk management framework addressing current and future risks</p> <p>3.49 Develop the capacity to respond to food and agriculture threats and crises (tools for prediction, rapid needs assessment and response, development and updating of preparedness plans and linking relief and rehabilitation to sustainable development).</p>	<p>MINAGRI</p> <p>MoE</p> <p>MIDMAR</p> <p>Meteo</p> <p>MINALOC</p>	Continuous
	Weather and climate services and early warning	<p>3.50 Develop and implement an early warning and disaster response system (seasonal forecasting and monitoring).</p> <p>3.51 Coordinate weather and climate services in partnership with MoE and Meteo Rwanda, with capacity building and data collection, processing, analysis, and communication.</p>	<p>MINAGRI</p> <p>MIDMAR</p> <p>MoE</p> <p>Meteo</p>	2018-2024
	Agriculture Insurance	3.52 Develop and Implement crop and livestock insurance strategy	MINAGRI	2018/2019
	Asset building of vulnerable groups	<p>3.53 Broaden the focus from cows to distribution of small livestock;</p> <p>3.54 Strengthen the linkages between existing agricultural support and the VUP social protection programme.</p>	<p>MINAGRI</p> <p>MINALOC</p> <p>Private sector</p>	Continuous

**Pillar 4: Inclusive Markets and Off-Farm Opportunities**

**Outcome: Improved inclusiveness of agricultural market systems and increased value addition and competitiveness of diversified agriculture commodities for domestic, regional, and international markets**

Post-harvest Management and Aggregation	Post-harvest Management	<p>4.1 Enhance all season road connectivity of production sites to agricultural market centres in the districts;</p> <p>4.2 Coordinate with the private sector to minimise post-harvest losses by creating suitable post-harvest handling and storage facilities (drying grounds, warehouses, silos, cold chain facilities, community market structures and collection centres, whole-sale markets, and export logistics facilities such as packing houses;</p> <p>4.3 Promote innovative private sector models for post-harvest handling facility management and value addition.</p>	MINAGRI, MINECOFIN MININFRA PSF	Continuous
	Promote contract farming and Productive Alliances	<p>4.4 Develop the legal framework to ensure transparency in agreements and enforcement in contracts.</p> <p>4.5 Build the capacity and create awareness on the benefits of contract farming</p>	MINAGRI, MINICOM, MINICOFIN, PSF	2019/2020
Promoting off-farm opportunities – especially for women and youth	Supporting entrepreneurship opportunities for Women and Youth	<p>4.6 Develop financial instruments and capacity building for off-farm opportunities related to agriculture.</p> <p>4.7 Coordinate with national programs for employment to have sufficient focus on rural areas;</p> <p>4.8 Develop affirmative actions that promote gender mainstreaming at all levels</p> <p>4.9 Develop projects that support youth in agriculture sector empowerment</p>	MINAGRI, MINICOM MIGEPROF MINECOFIN MINEDUC MIFOTRA MINIYOUTH	2020/2021
Agricultural Products for Healthy	Promoting Nutrition and Healthy Diets	<p>4.10 Develop household nutrition guidelines</p> <p>4.11 Develop practical skills training from their local Community Health staff, extensionists, and Farmer Field Schools.</p> <p>4.12 Expand and revise kitchen garden programmes</p>	MINAGRI, MINISANTE, MINEDUC,	Continuous

Diets and Consumer Markets		<p>4.13 Scale up the availability of bio fortified foods</p> <p>4.14 Coordinate with social protection programmes to asset building mechanisms (distribute small livestock, access to inputs)</p> <p>4.15 Promote local procurement of diversified nutritious foods for school meals;</p> <p>4.16 Mainstreams and coordinate efforts to identify and address specific dietary gaps through district investments in agriculture and rural development.</p>	MIGEPROF MINALOC	
	Promote food stability through enhanced Rwandan Strategic Grain Reserve	<p>4.17 Enhance data collection and analysis to provide early warning for food security.</p> <p>4.18 Decentralize the grains to the district and sector level to enhance food security readiness.</p> <p>4.19 Strengthen collaboration with private sector investors in storing food to be released during a supply shock.</p>	MINAGRI, MINALOC MINECOFIN PSF	Continuous
	Market and Trade Information Systems (MTIS)	<p>4.20 Expand the body of publicly available data on prices and production, and facilitate market linkages between smallholder farmers, cooperatives, traders, and the processing industries, and provides a mobile phone payment gateway to facilitate transactions;</p> <p>4.21 Establish e-auctions for coffee and tea to increase markets for quality coffee and tea. This will extend existing auctions such as Cup of Excellence.</p>	MINAGRI MINICOM PSF	Continuous
	Food Safety and Quality Standards	<p>4.22 Develop and Enforce standards to enable products' access to domestic, regional, and international markets.</p> <p>4.23 Strengthen certification and inspection services.</p> <p>4.24 Develop the capacity and create awareness for the necessity for standards and certification</p> <p>4.25 Develop infrastructural capacity to enforce safety, compliance and standards;</p>	MINAGRI, MINICOM, RSB, PSF, MIFOTRA	2019/2020

<p>Increased Agricultural Production for Export Markets</p>	<p>Increased production for exports</p>	<p>4.26 Brand and promote Rwanda agricultural products to penetrate the speciality markets  4.27 Continue interventions to increase production of coffee and tea;  4.28 Increase efforts to capture local, regional and continental markets  4.29 Ensure collaboration with other government institutions to implement cross-border trade agreements and streamline the coordination mechanism.</p>	<p>MINAGRI, MINICOM, RDB, MINALOC</p>	<p>Continuous</p>
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