Rwanda Agricultural Sector and its Impact on Food Security and Economy

Workshop on Asian Lessons and Agriculture Transformation in Rwanda

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Outline

- Country background
- Agriculture Sector background
- Policy reforms and Capacity Building
- Sector mission, development & key milestones/targets
- Research priorities for Agriculture Development
- Sector contribution to the Economy
Rwanda background

✓ Rwanda’s economy is still largely agrarian
  • ~ 10.5 mill people
  • >80% of population depend on agriculture
  • ~34% contribution to the national GDP

✓ Total Land area = 24,700 sq. km

✓ Population density = 407 persons/ sq. km

✓ Arable land = 91% of land (2,294,390 Ha)

✓ Cultivated land (Cash and Food Crops) = 1,735,025 Ha

✓ Cultivated land (Food crops; 2011 B) = 935,176 Ha
Agriculture sector-background

- Agriculture in Rwanda remains the trade sector that holds potentials for expansion
- However, agricultural growth was 0.5% in the 80’s and –3.9% in the 90’s
- Low agricultural growth lied at the central core of under-performing economy in the 80’s pictured limitation in resources base, declining soil fertility and exceptionally low utilization of modern agricultural inputs
- Since the beginning of the year 80, highly growing population was becoming more and more obviously a negative impact on lands occupation: overexploitation and soil erosion leading to decline soil fertility
Sector background (…)

- Intensive agriculture has then been considered, and necessary measures were undertaken (introduction of chemical fertilizers, soil erosion control, interest in organic manure, etc.)

- These efforts did not however result in expected outcomes because they were mainly directed to self-sufficiency and did not lead to the creation of monetary income to farmers.

- Other hindrances were overlooked, such as:
  - Agricultural tools were rudimentary and did not receive much attention;
  - Control of water and especially water for irrigation was little ensured;
  - Animal husbandry was not sufficiently developed, hence less productive.
From this background, agriculture and livestock have become a major concern of the Government in the reconstruction period after the Genocide.

The goal was to reverse the trend and bring about well-being of the population through identification of a liberalized and market-oriented agricultural economy, food security and poverty reduction.

Research was then set to be an important backbone for this policy.

Hence, elaboration of the agricultural policy and related strategies to implement it were initiated favoured participatory approach.
The SPAT II has been developed in response to the need for an updated strategy for agriculture (SPAT I).

The SPAT II bringing it fully into consonance EDPRS, prospective, long-term Vision 2020 and the National Investment Strategy.

The SPAT II serves to elaborate and develop the programmes, sub-programmes and activities that should lead agricultural development, and so will guide implementation as well as forming the basis for a Sector-Wide Approach (SWAp) in agriculture.
Policy reforms & CB: SPAT 2 framework

1. Intensification and development of sustainable production systems
   - Natural resources, water and soil conservation
   - Crops and livestock development
   - Marshland development
   - Irrigation development
   - Supply & use of ag. inputs
   - Food security management

2. Support to the professionalisation of the producers
   - Promotion of farmers’ organisations and capacity building for producers
   - Proximity services for producers (extension)
   - Research

3. Promotion of commodity chains and agribusiness development
   - Creating an enabling environment
   - Development of traditional and non-traditional exports
   - Value addition
   - Infrastructure
   - Rural finance

4. Institutional development
Under the EDPRS process, four major programs were defined for the period 2008-2012, which together represent Rwanda’s priorities across the four CAADP Pillars.

Government sees implementation of EDPRS as strategy to achieve and exceed the 6% CAADP growth target

Government committed to implement Maputo-declaration (10%)
Sector mission and priorities

✓ The mission: to insure food security for the Country through increasing productivity of Agriculture and Livestock

✓ Resources available: water, marshlands, land, soil and people to our advantage and sustainably
Diversification and intensification of plant, animal and fish production
Diversification of income and employment sources for rural populations
Linking products to national, regional and International markets
Sustainable management of natural resources, particularly soil and water
Organization, mobilization and capacity-building for producers
Capacity-building for service providers and private-sector development
Creating an enabling environment for investment in agriculture
Promoting gender and youth approach in agriculture sector
Crop Intensification Program

Irrigation & mechanization infrastructure development

Comprehensive land husbandry

Post-Harvest Handling and storage

Livestock modernization & genetic improvement

Promoting Exports and High-Value Crops

Integrated Research for Development & Technology transfer
Research priorities for agriculture development

- Crop production and protection
  - Development of high yielding and resistant crop varieties
  - Diseases and pests control
  - Tissue culture development for staple food crops, horticulture, coffee and trees.
- Animal resources for enhanced food security
  - Animal genetic improvement (crossing, artificial insemination & embryo transfer), animal nutrition and animal health
- Sustainable natural resources management
  - Soil fertility management and soil conservation
  - Water resources management and irrigation
  - Forestry and agro-forestry systems
  - Agro-meteorology and climate change adaptation
Research priorities for agriculture development

- Gene Bank establishment for plant and animal genetic resources (germplasms) reconstitutions (some have been lost after 1994).
- Tissue culture development for staple food, horticulture, coffee and trees.
- Integration of Research and Extension for development
Agriculture contribution to the National Economy

- 32-34% of Rwanda’s GDP
- 70% of exports
- Employment > 80% of population
- Provides 90% national food needs

Average annual agricultural growth has been 5% over the past 5 years, underpinned by strong growth in production of staple food crops.
Impact to the sector development

Production & productivity increase for key staples

- Land consolidation, inputs provision and proximity extension services through the Crop Intensification Programme have been the main contributors to this growth
Production & productivity increase (…)

Trends in Maize Output

Maize_Season A

Maize_Season B
Production & productivity increase (…)

Trends in Irish Potato

Season A

Season B
21/30 districts vulnerable to food insecurity in 2007 while in 2011, all districts were food secure
Impact to the sector development: poverty reduction

Poverty by province and district

- North
- Eastern
- South
- West
- Kigali

Legend:
- Poverty 2010/11
- Reduction in poverty since 2005/06
New sector strategic orientation (…)

Shifting Towards Private Sector Led Agriculture Growth (SPAT/EDPRS 2013/17)

FROM...

- Guaranteeing Food Availability
- Public Investment...
- Farmers as Passive Recipients
- Government as direct provider

...TO...

- Food Security through Economic Growth
- Private Investment...
- Farmers as Active Market Players
- Government as facilitator

2020 TARGETS

- $1200 GDP per capita
- Average annual sector growth of 8.5% between 2012-2017
- Production of 2,500 kcal/person/day
- 3.2 million off-farm jobs
- 5% of households with Borderline Poor Food Consumption Score (Food Security Indicator)
Currently the GoR is undertaking formulation of EDPRS 2 & SPAT 3 for 2013-2017

EDPRS 2 priorities

- Development of Quality Irrigation & Mechanization Systems (using public & private resources)
- Comprehensive Approach to Land Husbandry (Soil Fertility, Soil Conservation, Water Harvesting & Management, Livestock Feed)
- Increased use of agricultural inputs (organic and mineral fertilizers & improved quality seeds)
- Develop the agricultural post-harvest handling & storage system and farmer capacity
- Develop and target with private sector high-value commodity chains, encouraging innovation
- Livestock modernization
- Agricultural research agenda is strengthened according to demand driven by farmers
## Sector milestones: MDG & Vision 2020

<table>
<thead>
<tr>
<th>Agriculture Sector MDGs Indicator</th>
<th>Target in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP per capita in US dollars</td>
<td>900</td>
</tr>
<tr>
<td>Average real GDP growth rate (%)</td>
<td>8</td>
</tr>
<tr>
<td>Average real growth rate of the Agricultural Sector (%)</td>
<td>6</td>
</tr>
<tr>
<td>Average real growth rate of the Industry Sector (%)</td>
<td>12</td>
</tr>
<tr>
<td>Average real growth rate of the Service Sector (%)</td>
<td>11</td>
</tr>
<tr>
<td>Agricultural production (kcal/person/day)</td>
<td>2,200</td>
</tr>
<tr>
<td>Agricultural population (% of active population)</td>
<td>50</td>
</tr>
<tr>
<td>Use of fertilizers (Kg/ hectare/ year)</td>
<td>15</td>
</tr>
<tr>
<td>Use of chemical or organic fertilizers (% of households)</td>
<td>50</td>
</tr>
<tr>
<td>Land under “modernized” agric (%)</td>
<td>50</td>
</tr>
<tr>
<td>Soil erosion protection (% total land)</td>
<td>90</td>
</tr>
<tr>
<td>Financial credits to the Agricultural Sector (%)</td>
<td>20</td>
</tr>
</tbody>
</table>
## Sector milestones: EDPRS & GoR Program

<table>
<thead>
<tr>
<th>EDPRS</th>
<th>Current</th>
<th>EDPRS Targets</th>
<th>GoR 2017 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of Arable Land Protected Against Soil Erosion</td>
<td>87.3%</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Marshlands Developed (ha)</td>
<td>23,683</td>
<td>20,000</td>
<td>65,000</td>
</tr>
<tr>
<td>Production of Coffee (MT)</td>
<td>16,373</td>
<td>23,000</td>
<td>34,000</td>
</tr>
<tr>
<td></td>
<td>(2011)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer application (Kg/Ha/Year)</td>
<td>29</td>
<td>12</td>
<td>45</td>
</tr>
<tr>
<td>Number of HH using Improved Seeds</td>
<td>71%</td>
<td>20%</td>
<td>100%</td>
</tr>
</tbody>
</table>
### Sector milestones: EDPRS & GoR Program

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Production 2011 (tons)</th>
<th>EDPRS targets 2012 (tons)</th>
<th>2017 targets (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>472,048</td>
<td>302,130</td>
<td>730,133</td>
</tr>
<tr>
<td>Meat</td>
<td>79,035</td>
<td>98,000</td>
<td>410,808</td>
</tr>
<tr>
<td>Fish</td>
<td>16,924</td>
<td>14,965</td>
<td>112,000</td>
</tr>
<tr>
<td>Eggs</td>
<td>3,921</td>
<td>3,583</td>
<td>6,300</td>
</tr>
</tbody>
</table>
Sector milestones: e.g. dairy development

Production and Consumption with NDS

Thousands of Liters


Milk Production With NDS
Milk Consumption Goal with NDS
Innovations
Innovations: Utilizing regional potential to poverty reduction

<table>
<thead>
<tr>
<th>Land use category</th>
<th>Area (Ha)</th>
<th>Area (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual cropping</td>
<td>228,968</td>
<td>33</td>
</tr>
<tr>
<td>Coffee plantation</td>
<td>185,389</td>
<td>26</td>
</tr>
<tr>
<td>Tea plantation</td>
<td>123,660</td>
<td>18</td>
</tr>
<tr>
<td>Range</td>
<td>139,714</td>
<td>20</td>
</tr>
<tr>
<td>Forest</td>
<td>25,079</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>707,621</strong></td>
<td><strong>100</strong></td>
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There are a number of home-grown programmes and initiatives that have contributed to great changes

1. **PRODUCTION**
   - Land Use Consolidation
   - One Cow Per Poor Family
   - HIMO Approach to Terracing
   - Community-based Marshland Development for Irrigation

2. **VALUE-ADDITION**
   - Drying Grounds and Storage linked to high-production areas
   - Community-based collection centers (Milk, Horticulture etc)

3. **MARKETING**
   - Promotion of Community-based Purchasing
   - One Cup of Milk per Child
   - HIMO Approach for Feeder Road Construction
Home growing solutions: e.g. terracing
Home growing solutions: e.g. irrigation
Home growing solutions: e.g. one cow & one cup
Low involvement of the private sector in agriculture sector: Low investments, weak capacity of local private entrepreneurs in agriculture infrastructure,…

Access to Finance: Reluctance of Financial institutions in lending agriculture

Insufficient skills in key domains such as irrigation, mechanization, breeding, post harvest,…

Public Investment and funding Agriculture vs. Targets