

## Intensification and Development of Sustainable Production Systems

### EDPRS: Agricultural Sector Goals and Programmes

The Government of Rwanda plans to implement the Economic Development and Poverty Reduction Strategy (EDPRS), which includes an agricultural development and investment programme, from 2007-2011. As defined under the EDPRS, the overall agricultural sector goal is to achieve sustainable economic growth and social development, leading to the increase and diversification of household incomes and ensuring food supply and food security for the entire population. The specific objectives are:

- Annual growth rates of 7, 8, and 6 percent for agricultural GDP, agricultural export output, and food-crop production, respectively, against a 2001–2005 baseline value of 4.2 for the former and 2006 baseline values of 7 and 0 percent for the latter two;
- Average real per capita income increase of 8 percent in agriculture, against current trends of 4 percent;
- 20 percent increase in off-farm employment in all districts compared to 2005–2006, particularly for women;
- Reduction of the population below minimum food requirements to 16 percent from 20 percent in 2006.

### EDPRS: Agricultural Sector Investment and Development Programmes

The Strategic Programme for Agricultural Transformation / Programme Stratégique pour la Transformation de l'Agriculture (PSTA) will serve as the operational framework for the implementation of the EDPRS agricultural investment programme. Its strategic objective is to achieve the targets defined in the larger planning frameworks of the EDPRS, CAADP, and Vision 2020. The PSTA focuses on the following key programmes:

1. **Intensification and Development of Sustainable Production Systems<sup>1</sup>**
2. Support to Professionalisation of Producers
3. Promotion of Commodity Chains and Development of Agribusiness
4. Institutional Development.

### Outcomes and Objectives

The projected outcome for the **Intensification and Development of Sustainable Production Systems Programme** is to achieve sustainable and intensified production systems in the cropping and animal resources sectors through combined interventions to improve the management of natural resources, raise the level of competitiveness and diversification of domestic sectors, and achieve greater food security among vulnerable segments of the population.

### Cost

Under an unconstrained resources scenario, the estimated cumulative investment costs for the programme would be 437 billion FRw. Assuming a continuation of current levels of resource allocation to the sector, cumulative investment costs would amount to 155 billion FRw.

### Activities

The activities to be carried out and the targets to be realised to achieve the above development objectives are organized

into six subprogrammes. The baseline year is 2006 and the target year is 2011.

### SUBPROGRAMMES

#### 1. SUSTAINABLE SOIL CONSERVATION

*Target:* To increase the total area protected against soil erosion from 40 percent to 100 percent.

*Activities:*

- i. Construct and rehabilitate progressive and radical terraces, covering a total of 13,000 ha of existing and 30,000 ha of new terraces, to raise the overall share of protected land to 64 percent.
- ii. Promote agroforestry technologies and establish tree nurseries in each "secteur" to plant 42 million trees annually to achieve 30 trees per household.

*Cost:* 232 billion FRw.

#### 2. MARSHLAND DEVELOPMENT

*Target:* To develop and increase sustainable farmed marshland areas from 11,105 ha for year-round utilisation to produce

<sup>1</sup>This brief summarises the specific objectives, activities, and funding requirement for **Programme I: Intensification and Development of Sustainable Production Systems**.

high-value crops, particularly rice.

*Activities:*

- i. Continue government investment in marshland development, but increasingly promote community participation and encourage the private sector to invest in the area.
- ii. Develop and strictly apply guidelines, including mandatory Environmental Impact Assessments, for the adoption of environmentally sound practices for marshland cultivation.

*Cost:* 121 billion FRw.

### **3. IRRIGATION DEVELOPMENT**

*Target:* To increase the share of area under irrigation from 1 percent to about 5 percent, and to increase the area under hillside irrigation from 130 ha to 3,200 ha.

*Activities:*

- i. Develop and promote irrigation systems, including small-scale systems for hillsides and lowlands, as well as water-harvesting systems and other water-collection techniques, plus construct at least 1,000 microdams to cover around 200 ha annually.
- ii. Promote diverse irrigation technologies, including surface irrigation, pumping, and sprinkler irrigation.
- iii. Build about 800 community water-harvesting structures (community ponds) with a capacity of 500 cubic meters, from the baseline of 40 meters.

*Cost:* 27 billion FRw.

### **4. SUPPORT FOR THE SUPPLY AND UTILISATION OF AGRICULTURAL INPUTS**

*Target:* To increase the rate of application of improved seed from 3 percent to 20 percent, and of fertilisers from 8kg/ha to 20kg/ha.

*Activities:*

- i. Promote the production and utilisation of improved foundation seed from 3,000 mt to 15,000 mt, and train farmers in seed multiplication and utilisation.
- ii. Facilitate bulk purchases and provide financial support to the private sector through special lines of credit to raise fertiliser imports from 14,000 mt to 56,000 mt annually.
- iii. Train 70 percent of farmers' associations in the use of both inorganic and organic manure, compared to the current 20 percent.

*Cost:* 6 billion FRw.

### **5. IMPROVEMENT AND DIVERSIFICATION OF ANIMAL PRODUCTION**

*Target:* To promote livestock production among poor households, improve the genetic potential of livestock, strengthen animal-disease control and veterinary services, and increase output in diversification subsectors such as fisheries and honey production—to reach the following levels of supply,

measured in 1000 mt against 2006 baseline in parentheses: milk: 290 (120); meat: 61 (49); fish: 17 (7); eggs: 3.3 (2.5); and honey: 4.25 (1).

*Activities:*

- i. Scale up the “One Cow per Poor Household Programme” to distribute improved breeds to 600,000 households and raise the share of households possessing livestock from 71 percent to 90 percent.
- ii. Facilitate the annual importation of exotic pure breeds to reach 1,700 pure-breed cows and 700 improved small ruminants annually, including 800 improved goats and 2,000 pig rams;
- iii. Promote artificial insemination (AI) and embryo-transfer technology to raise the number of calves born through AI by 50 percent and through embryo transfer to 15,000 annually, thereby raising the proportion of high genetic potential cattle from 14 percent to about 20 percent. AI services will be decentralised to train and locate at least one AI specialist in each secteur across the country.
- iv. Expand animal-disease control and improve extension services, including delivery of vaccines and other veterinary services, to raise the annual level of immunisation against major epidemics such as FMD, tuberculosis, brucellosis, and black quarter from 18 percent to 80 percent and reduce the prevalence of tick-borne diseases among cattle from 80 percent to around 45 percent. A total of at least 25 border disease-control posts and 7 quarantine posts will be established and operational by 2011.
- v. Facilitate private-sector production of high-quality animal feeds with the target of having at least two operational feed-processing units in every district by 2011, in addition to the distribution of at least 1.5 mt of improved forage seeds annually from the national seeds service.
- vi. Promote zero grazing to reach all beneficiaries of the “One Cow per Poor Household Programme” and raise the total number of livestock under zero grazing from 6 percent to about 25 percent of the national herd.
- vii. Intensify fisheries production through integrated management of lakes and restocking with high-quality fish species, build capacity of operators in the industry, and improve the subsector's production, processing, and marketing infrastructure. Promote fish farming and distribution to raise the number of fish-farming units in every district from 10 to 30, and create 5 fish-collection centres around the country and one large-scale cold room in Kigali. Fish production is expected thereby to increase from 7,400 mt a year to 17,500. A total of 1,800 professionals will be operating successfully in the fisheries industry, raising per capita annual fish consumption from 0.9 kg to 2 kg.
- viii. Implement professionalisation campaigns to increase the number of professional honey producers from 360 to more than 13,000, particularly in traditional bee-keeping areas around the natural forests, and raise honey production from 1,000 mt to about 4,000 mt.

*Cost:* 20 billion FRw.

## 6. IMPROVEMENT OF FOOD ACCESS AND VULNERABILITY MANAGEMENT

*Target:* To ensure access to food for the most disadvantaged and vulnerable rural households, mainly through significant increases in the production of key food crops. The output targets to be pursued for each food crop sector, measured in 1000 mt, are as follows (2006 baseline values in parentheses): milk: 178 (96), beans: 306 (250), rice: 86 (35), banana: 3000 (2500), cassava: 1200 (965), potato: 1400 (1150), wheat: 43 (20), soybeans: 27 (21), sweet potato: 1120 (920), and yam: 180 (145).

### Activities:

- i. Introduce special food-security programmes in every district to boost production among vulnerable households.
- ii. Develop additional safety nets and other targeted programs to reduce malnutrition among vulnerable households.
- iii. Establish an effective mechanism to map out and regularly monitor the status and changes in vulnerability among vulnerable households.

Cost: 30 billion FRw.

**Table 1 — Output Targets for Selected Food Crops**

Crop	Baseline 2006 (1,000 mt)	Target for 2011 (1,000 mt)	Crop	Baseline 2006 (1,000 mt)	Target for 2011 (1,000 mt)
Maize	97	178	Wheat	20	43
Beans	250	306	Sorghum	182	22
Rice	35	86	Soybeans	21	27
Banana	2,500	3,000	Sweet-potato	920	1,120
Cassava	965	1,200	Yams	147	180
Irish potato	1,150	1,400			

**Table 2 — Cost of PSTA/EDPRS Programme I: Intensification of Sustainable Production Systems**

Subprogramme	Cost for 2007: Unconstrained Scenario (billion FRw)	Cumulative cost 2007–2011: Unconstrained Scenario (billion FRw)
I.1. Soil Conservation	41.48	232.29
I.2 Animal Production Development	24.50	121.21
I.3 Marshlands Development	5.39	26.97
I.4 Irrigation Development	1.13	6.19
I.5 Inputs promotion	3.01	20.19
I.6 Food Security and Vulnerability Management	3.80	29.89
<b>Programme / TOTAL</b>	<b>79.31</b>	<b>437</b>

**Table 3: Cost of EDPRS/PSTA Programmes under Three Funding Scenarios**

Programme	Budget 2007 <sup>1</sup> (billion FRw)	Cost for 2007 Unconstrained Scenario (billion FRw)	Cumulative Cost 2007–2011		
			Base Scenario (billion FRw)	Medium Scenario (billion FRw)	Unconstrained Scenario (billion FRw)
<b>1. Intensification and Development of Sustainable Production Systems</b>	8.9	79	155	215	437
<b>2. Support to Professionalisation of Producers</b>	2.2	11	13	19	66
<b>3. Promotion of Commodity Chains and Development of Agribusiness</b>	6.7	5	6	11	26
<b>4. Institutional Development</b>	2.1	3	5	8	16
<b>TOTAL – MINAGRI</b>	19.9	98	179	253	545

<sup>1</sup>Budget includes Recurrent Budget, Development Budget, and transfers to districts.