

**REPUBLIC OF RWANDA**  
**Ministry of Agriculture and**  
**Animal Resources**  
*P.O Box 621 Kigali*

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*National Agricultural Policy*

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## Abbreviations and acronyms

ASSOPTHE	:	Associations of tea growers
APP	:	African Pig Pest
CBPP	:	Contagious Bovine Pleuro-pneumonia
CECDP	:	Cash and Export Crop Development Project
CEPEX	:	Centre of Projects Execution
CLCS	:	Comprehensive Living Conditions Survey
COOPTHE	:	Cooperative of tea growers
DMU	:	Decentralisation Management Unit
EEC	:	European Economic Community
EWS	:	Early Warning System
FAO	:	Food and agriculture organization
FMD	:	Foot and Mouth Disease
GDP	:	Gross Domestic Product
GIS	:	Geographical Information System
HIAL	:	High Institute of Agriculture and Livestock
HIV	:	Human Immuno-virus
IDB	:	Gross Domestic Index
IOE	:	International Organisation for Epizootics
KIST	:	Kigali Institute of Science, Technology and Management
LSD	:	Lumpy skin disease
MIFOTRA	:	Ministry of Public Service, Labour, Human Resource Development and Professional skills
MIGEPROFE	:	Ministry of Gender and Family Promotion
MIJESPOC	:	Ministry of Youth, Culture and Sport
MINAGRI	:	Ministry of Agriculture and Animal Resources
MINALOC	:	Ministry of Local Government, Community Development and Social Affairs
MINEDUC	:	Ministry of Education, Science and Technology
MINICOM	:	Ministry of Commerce, Industry, Investment Promotion, Tourism and Cooperatives
MINIPLAN	:	Ministry of Planning
MINITERE	:	Ministry of Lands, Environment, Forestry, Water and Natural Resources
MIS	:	Market Information System
NEPAD	:	The New Partnership for African Development
NES	:	National Extension System
NGO	:	Non Governmental Organisation
NIS	:	National Investment Strategy
NPK	:	Nitrogen, Phosphorus, Potash
NUR	:	National University of Rwanda
NURC	:	National Unity and Reconciliation Commission
PADEBL	:	Projet d'appui au développement de l'élevage bovin laitier
PRSP	:	Poverty Reduction Strategy Paper
RBS	:	Rwanda Bureau of Standards
RIAS	:	Rwanda Institute for Agronomic Sciences
RIPA	:	Rwanda Investment Promotion Agency
RPSF	:	Rwanda Private Sector Federation
RSSP	:	Rural Sector Support Project
RWF	:	Rwandan Francs
STABEX	:	
USA	:	United States of America
VT	:	Village Tea
WHO	:	World Health Organisation
WTO	:	World Trade Organisation

# INTRODUCTION

## ***1. Basis of agricultural policy***

Rwanda agricultural sector contributes to the GDP for about 46% in real terms (2001), and counts for 87% of employments and for 80% of exports. Agriculture is the main national source of foreign currency and survival for the population. Being aware of the importance of agriculture in the national economy and of its necessity to ensure food and nutrition security to the whole population, the Government has started to formulate her policy and strategies in order to contribute to the achievement of food security for her population and to boost the Country's economy.

Agricultural policy must be coherent with other policies relative to rural development. It is also in line with major development orientations as outlined in:

- Vision 2020 where Government has indicated the start of modernisation of agriculture taking into consideration that it would employ 50% of the population. The entire Rwanda population would have access to substantial income allowing everyone to meet his needs;
- National Investment Strategy (NIS) in 2010 horizon which comprises two phases namely the **primary growth phase**, from 2002 to 2006 and the **strengthening phase**, from 2007 to 2010;
- Poverty Reduction Strategy Paper drafted in the context of long-term vision of the development of Rwanda clearly stated in the document of Vision 2020. It comprises the following aspects: good governance; democratisation; national reconciliation; political stability and internal security; participation of the local population in development and decision-making; comprehensive economic system that would be enable all social and economic categories to be self-dependent and that would create a participatory economy; macro-economic stability; creation of an environment favourable to boost the private sector; reduction of the role of the public sector in the economy while at the same time strengthening efficiency of the Nation and productivity of the public administration;
- Speech of the Right Honourable Prime Minister of the 7<sup>th</sup> November 2003 whereby he delivered the programme of the Government and which set up the following objectives over 7 years in agriculture and livestock: rational utilisation of soils and control of soil erosion; promotion of coffee production and improvement of its quality; privatisation of tea-processing units and tea plantations; promotion of pyrethrum; promotion of modern and innovative farming; fighting epizooty, enzootics and plant pathology; setting up of mechanisms to facilitate access to agricultural loan; adding value on farm and animal products; increase the number of storage facilities and unities to process agricultural and animal produces; water conservation;

- Survey on food security of 2000/2001 in Rwanda that gathers detailed information on production of food crop, based on a sub-sample of households derived from a large sample utilised for the Households Living Conditions Survey (HLCS) which is related to previous surveys conducted earlier in the 80's and the 90's;
- Final results of the General Census of the Population and Housing of 2002;
- National policy on housing expected to set free more arable lands for their better utilisation;
- National Decentralisation Policy in which institutions at grassroots level are expected to participate and to play a major role in the implementation of policies;
- Political will to have an updated law on lands that addresses the current situation;
- The Round Table of 2003 on progress in implementation of the Strategy to Fight Poverty;
- Development objectives for the millennium in which reduction of hunger and poverty are among priorities;
- The New Partnership for African Development (NEPAD), whose objectives include restoration of agricultural growth, rural development and food security. It focuses mainly on implementation of key recommendations on food security, poverty reduction and sustainable use of natural resources adopted in recent international conferences, such as the Johannesburg World Summit on Sustainable Development, the World Food Summit, 5 years later and the recent Maputo Declaration of July 2003;
- The line of resolutions of national commitments taken in conferences and summits organised by United Nations agencies on food security and sustainable development since many decades.

## ***2. General context***

### **2.1. Geographical context**

Rwanda is a landlocked Country with a total area of 26.338 sq.kms. The annual growth rate of the population is estimated at 2.9%. According to the provisional estimates of the Census of 2002, Rwanda population is estimated at 8,162,715 inhabitants. It is believed to be 15 millions by the year 2020 and 20 millions by the year 2030. Rwanda, with her 310 inhabitants per sq.kms, is among the Countries of Africa with the highest population density. About 46% of the Country's area is cultivated land divided up into small farms. Marshlands cover approximately 165,000

ha out of which 112,000 ha are composed of small marshlands (less than 200ha) and 53,000 ha composed of bigger marshlands. The total marshland area under exploitation is estimated at 94,000 ha or 57% of the total area of the marshlands and represents 8% of lands suitable for cultivation.

The climate is temperate tropical type with an average temperature of 19°C and an annual rainfall ranging between 900 and 1,600mm. The Country experiences a short rainy season from September to November and a long rainy season from February to May. The short dry season runs from December to January and the long dry season from June to mid-September.

Rwanda is divided into three topographical zones:

- Lowlands having less than 1,500 m of altitude and which cover the whole eastern part of the Country; it stretches from Akagera National Park (ANP) in Umutara up to Bugesera region via the Gisaka region;
- Midlands (1,500 – 1,900m) stretching on both sides of the Congo-Nile Ridge;
- Highlands (above 1,900m) that cover the highlands of the Congo-Nile Ridge and the Volcanoes.

## **2.2. Political context**

Between 1990 and 1994, Rwanda has suffered a civil war followed by the genocide. The Country is still suffering from the aftermaths of these events that have deeply affected the livelihood of all Rwandans. Up to a million people were killed and three millions other went into exile in neighbouring countries. Housing and assets have diminished to a great deal at household level as well as at small business level. Some of the Country's regions are today facing severe lack of infrastructures following their destruction during the war and due to the shifting of the population to areas formerly under-populated.

Since the end of the genocide, the Country is involved in the process of reconciliation and rehabilitation of the social welfare, prerequisite to reconstruction. Reconstruction here means reinsertion of isolated groups, returnees, widows and orphans. Similarly, the Government is striving to rehabilitate social links between rural and urban areas so as to bring about social cohesion and viable agricultural marketing.

Since 1994, security and political stability have been restored. Decentralised political and administrative structures that encourage the participation of the population in rural development have been established on local level. Economic growth was important during the years of reconstruction and an important programme of political and economic liberalisation has been set up.

On May 26, 2003, Rwanda held a referendum on the New Constitution that opened the way to multiparty. Multiparty presidential elections were organised on August 25, 2003. Election of members of the Parliament and the Senate took place on 29<sup>th</sup> September 2003. These elections marked the end of 9 years of political transition.

### 2.3. Macro-economic context

Rwanda is one of the poorest countries in the world and has a GDP per capita of 210US\$. More than 60% of the population lived below the poverty line in 2001. Agriculture is the main source of foreign currency and provides subsistence income for the population. Still young, the secondary sector is mainly composed of manufacturing and construction industries and counts for 16.6% of the GDP (2001). The tertiary sector counts for 37.4% of the GDP. The latter includes commercial (77%) and non-commercial services (23%). The GDP is estimated at 1.8 Billions US\$. Some important dates in the Country macro-economic development are:

- 1970 : Rwanda recorded relatively high economic growth rate, 5% per year in average, coupled with general financial stability and very low inflation rates.
- 1980 : Rwandan economy began to show signs of weakness and financial set backs because of negative evolution of price of primary goods on world market and deterioration of the terms of trade.
- 1983 : The government adopted austerity policies on budget and monetary system, as it was putting in place measures aiming to limit imports by increasing custom duties and banning some imported goods, in order to protect national production. In the same year, Rwanda Franc broke away from the Dollar. The economy improved for a short while following a good price of coffee on world market.
- 1987 - : The economic situation kept on deteriorating and showing internal and  
1990 external financial imbalances.
- 1990 : The Government was obliged to launch economic policy reform in order to mitigate distortions of the economy, to restore foundation to sustained economic growth and to improve macro-economic framework to attract private investment.
- 1994 : Economic and financial programme put in place with the assistance of Breton-Woods Institutions was discontinued due to war and genocide.
- 1996 : Start up of a new programme called "**Shadow Programme**" to address emergencies and reconstruction of the Country. As a result, the GDP that had declined to 50% in 1994 was revived by 34% in 1995 and 16% in 1996 and continued to grow unabated at the rates of 13% in 1997 and 10% in 1998. The said programme lasted for two years (1996 – 1998)
- 1998 : Supported by Breton-Woods Institutions, Rwanda undertook a programme of reform for the period of 1998 – 2001. This programme marked the beginning of the process of sustainable development.
- 2000 : Elaboration and launch of the National Poverty Reduction Plan (NPRP) in the framework of Vision 2020.
- 2001 : The Interim Poverty Reduction Strategy Paper was finalised. The major objective of the Strategy, in line with Vision 2020, is to reduce the number of households living below the poverty line, from 60% in 2001 to 25% in 2020 and to increase income per capita from 210US\$ to 600US\$ (2000 constant terms), during the same period. The National Investment Strategy in 2010 horizon backs the PRSP and Vision 2020.



## 2.4. Diagnostic assessment of food security

### 2.4.1. Availability of food and nutritional requirements

Food crop counts for 92% of cultivated lands. Banana under its different forms (fruit and beer) are by far the dominant crop and occupies more than a quarter of area under cultivation (28%), followed by beans (21%), sorghum (10%), sweet potatoes (12%) and cassava (8%). Cash crops (coffee and tea) follow with respectively 6.3% and 1.6% of the cultivated area. Evolution of the main food crop production for the period of 1990-2001 has been marked by important variations.

Since the 80's, Rwanda is facing problems of insufficient agricultural production and food insecurity. This trend has been exacerbated by the genocide of 1994. About 87% of the population live in rural area in small farms not bigger than 1 ha. Their productivity is low due to continued land degradation by erosion and to low utilisation of agricultural inputs. Land problems are so severe that about 43% of families depending on less than 0.75ha to make their living. In after-war period, the proportion of the poor and landless rural people has increased continuously. Agriculture that counts for 60% of the total area of the Country relies almost exclusively on rain and takes place mainly on hillsides with crops such banana, bean, sorghum, cassava, sweet potatoes in the low and midlands and with climbing bean, wheat, maize and Irish potatoes in highlands.

Rwanda cannot meet the food needs for her population with the mere national production. In fact, taking into consideration of daily needs for one person (2,100 Kcal, 59g of proteins and 40g of lipids), satisfaction rate is only 83%, 73% and 17.5% respectively in 2001. This data is an indication of alarming situation in lipid consumptions where deficit has become recurring since many years. Imports of food and food aids partially satisfied food needs for about 25.5% and 6.5% of the total needs required in 2001, hence contributing significantly to food supply.

As for nutrition situation, 7% of the children suffer persistent malnutrition, according to the results of the Demographic and Health Survey carried out in 2000. A meal is generally made of beans and tubers and/or banana. Basic meal supplements are vegetables, oil and rarely fruits. Milk is taken by 4 to 5% of families and only 1 to 2% families regularly eat meat, fish and eggs. Between 7 and 8% of families can afford only one meal a day and only 3% can afford three meals.

Considering only cases of farmer families whose food is mainly produced on own farm, energetic intake that covers only 88% of daily requirements is only composed of 2 to 3% of animal products. The protein intake that covers only 67% of the requirements comprises only 7% of animal proteins, showing important deficit in required amino acids and vitamins requirements. As for lipid intake that covers only 21% of the needs, it comprises only 38% of animal products, showing predictable deficit in some fatty acids essential to human.

### **2.4.2. Poverty and food insecurity**

Access to food is hindered by the prevailing poverty in the Country, which result primarily in food and nutrition insecurity. This situation mostly persistent and linked to smallness of arable lands and absence of off-farm income in rural areas is exacerbated by weather hazards.

In 1985, about 40% of the total population were classified poor; their average income per capita was below the poverty line. In the beginning of the 90's, the fall of agricultural production along with world coffee prices has led to important fall of income per capita. Consequently, 53% of the population lived below the poverty line before 1993. The war and the genocide have caused destruction of goods and properties, contributed to a sharp increase of poverty, resulting in rise in percentage of families living below the poverty line from 53% to 70% between 1993 and 1997. Since then, the situation has been constantly improving. According to the latest estimates (1999), percentage of people living below poverty line is 65%.

### **2.5. Sector context**

In Rwanda, agriculture is the trade sector that holds potentials for immediate expansion. However, agricultural growth was 0.5% in the 80's and -3.9% in the 90's. While statistics of the 90's are biased due to the influence of the genocide, these results show clearly that low agricultural growth lied at the central core of under-performing economy in the 80's, given its important share in the economy. This low economic growth pictured limitation in resources base, declining soil fertility and exceptionally low utilisation of modern agricultural inputs. Though agricultural production per capita and crop yields have kept on declining since the mid 80's, economic policies have not done much to encourage agricultural transformation.

In fact, in the years 60 and 70, development policy was essentially oriented towards Country land use and management and by setting up infrastructures and occupation of available lands. Therefore, agricultural policy was by then dominated by integrated rural development approach. Since the beginning of the year 80, beside the fact that prospects for expansion were becoming rare and basic infrastructure was already in place, the problem to feed a highly growing population was becoming more and more obviously a negative impact on lands occupation: overexploitation and soil erosion leading to decrease of fertility. Since the other sectors of the national economy were underdeveloped and hence could not create significant job opportunities, the sector policy was oriented towards self-sufficiency.

The need for intensive agriculture has then been considered and necessary measures were undertaken to initiate the process (introduction of chemical fertilisers, fighting erosion, interest in organic material and manure through stalling, increased protection of crops, reorientation of projects towards production sector, increased production of quality seeds, support to research, efforts to make extension more performing, 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 that would have enabled people to acquire agricultural inputs.

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 but little ensured;
- Animal husbandry was not sufficiently developed, hence less productive.

Towards mid-80's several famines broke out hitting especially populations whose farms were small in regions where the soil was less fertile. As in that period cash crops markets were declining, particularly that of coffee and quinquina, economic and financial imbalances have risen up, obliging the Country to negotiate a Structural Adjustment Programme (SAP) with Breton-Woods institutions. We shall note that the self-sufficiency policy has not answered basic problems of the national economy at neither micro nor macro-economic level. Concentration of development efforts on agriculture has overshadowed potentials held by other sectors of the economy, also hampered by interventionism of the Nation. As agriculture was expected to support most of the burden of the population growth, internal imbalances grew worse (decrease of farms, overexploitation of soils) and impoverished the rural trapped in a system of production based on autarky, benefiting little from regional comparative advantages (natural agro-bio-climatic conditions) and domestic, regional and international market opportunities. Low monetary income of the majority of growers prevented them from implementing the basic policy of agricultural intensification that requires acquisition of inputs from outside.

On livestock side, Rwanda has 991,697 cattle of which 86% are local breed with low production of milk and meat, against 13% of hybrids and 1% of purebred species. Additionally there are 1,270,903 goats; 371,766 ovine; 211,918 pigs; 498,401 rabbits and 2,482,124 poultry.

More than 50% of cows are located in the Northeast of the Country and in Bugesera. Umutara province comes first with 280,000 cows followed in 2<sup>nd</sup> position by Gitarama and Kigali Ngali provinces with 170,000 and 90,000 cows respectively.

The sub-sector of livestock is supposed to contribute by 10% of protein needs to the population, i.e. 6 grams per person per day (according to FAO/WHO standards calculated for Rwanda). However, this proportion has never been reached and the most significant outcomes were obtained in 1989 when animal produces contribution was estimated at 4 grams per person per day.

As far as cattle farming method in Rwanda is concerned, it is a family model and we observe extensive and intensive cattle farming, temporary and permanent stalling.

As for small livestock, beside its poor genetic characteristics, their sizes are still small compared to the needs of the population. This type of livestock is mainly practiced by small farmers.

Pig keeping is generally done under temporary stalling. For poultry, traditional animal husbandry makes the major part of national production, whereas rabbits are kept per group of about 10 individuals. Fish farming is generally practiced for local needs.

For animal health, offspring resulting from hybrid between purebred species and improved breeds remain highly vulnerable to various diseases caused by viruses, bacteria and parasites. They also suffer many deaths due to malnutrition problems.

Agriculture and livestock are now a major concern of the Government which has the goal to reverse the trend and bring about well-being of the population, mainly farmers, through identification of a liberalized and market-oriented agricultural economy, food security through the increase of production and revenues, fight against poverty particularly among rural people and commitment to reduce the number of people living under malnutrition.

Commodity-based intervention is the methodology of the Government in order to reinforce professionalism and specialisation of agriculture. Research will be an important backbone for this policy, as it will intervene at every stage of commodity development. Promotion of export products will benefit special attention from the Government.

### **3. Consultations conducted**

Elaboration of the agricultural policy and related strategies to implement it has favoured participatory method. To this end were held:

1. A seminar for representatives from the agro-industry, traders and exporters of agriculture produces which has put in place a focal team of six private operators who are to carry out regular consultations with MINAGRI in order set up a framework of collaboration and to create partnership between stakeholders involved in markets dynamic;
2. A seminar bringing together officers of MINAGRI and its partners (MINECOFIN, DMU, Labour Intensive (HIMO), CDF, Prefects of provinces, Mayors of districts etc.);
3. A meeting between MINAGRI with the main actors of rural development cluster;
4. Seminars to validate the agricultural policy organised for:
  - Partners of MINAGRI;
  - Prefects of provinces and Directors of agriculture, animal resources and forestry in provinces;
  - Donors;
  - The private sector community.

## I. EXECUTIVE SUMMARY OF AGRICULTURAL POLICY

- **Vision**
- **Political implications**
- **Strategic approach**
- **Challenges to the implementation of agricultural policy**

### ***1.1. Vision of agricultural policy***

The vision of the Government in agricultural policy is oriented towards the following major axis:

- Food security through the creation of an environment favourable to income generation;
- Modern, professional, innovative and specialised agriculture;
- A strict market oriented agriculture (domestic, sub-regional, regional and international);
- Fair distribution of benefits from all products resulting from different stages of processing;
- Integrated and diversified agriculture:
  - Agriculture integrated in animal husbandry;
  - Agriculture and livestock integrated in rural development.
- Agriculture friendly to the environment.

### ***1.2. Political implications***

The vision of agricultural policy comprises implications, most important of which are:

- Food security different from self-sufficiency: farmers must produce for the market and generate income required to meet their needs of food and others;
- Agriculture would better integrate the national economy and consequently contribute to macro-economic stability and economic growth;
- Major role of extension and research: they will be oriented towards the needs of the market, innovation, modernisation and transfer of appropriate rural technologies;
- Turning agriculture into a professional, profitable, non-seasonal and income generating activity;
- Selection of commodities must be economically rational and strictly based on comparative advantages;
- Selection of commodities must be flexible and dynamic in time and space; agriculture should adequately respond to market signals;
- It will be necessary to devise policies and procedures for certification (origin tracing), sanitary assessment, hygiene and quality of agricultural products;
- Setting up mechanisms enabling to shift from subsistence agriculture to market-oriented agriculture;
- Institutional framework must be revised (administration, relationship between partners, investment climate, legal framework), to facilitate the implementation of agricultural policy.

### ***1.3. Strategic approaches***

As for strategic approach, the Government encourages:

- Commodity-based intervention focussing strengthening of professionalism and agricultural specialisation;
- Selection of a limited number of priority crops, which number will decrease gradually as we move from national to sector level (Umurenge);
- Promotion of cash crops and their regional mapping in order to reduce production costs and optimise comparative advantages;
- Partnership between public and private sectors allowing the latter to take active part in the process of agriculture transformation.

### ***1.4. Agricultural potentials in Rwanda***

A certain number of advantages can help the rwandan agriculture to take-off:

- Willingness and motivation of authorities and the staff of MINAGRI;
- Abundant manpower in agriculture (87% of the population);
- Good volcanic soils in the Northwest and acidic soils of Congo-Nile Ridge suitable for a number of crops (tea);
- Availability of organic fertilisers and calcium amendments (lime, travertine);
- Existence of two cropping seasons A and B and season C in dry season taking place in marshlands and lowlands;
- Dense hydrographical network (135,000 ha of rivers and lakes);
- 165,000 ha of marshlands (94,000 under cultivation; 5,000 ha managed);
- Diversity of agro-bio-climatic zones;
- Existence of decentralised structures intervening in agriculture;
- Existence of internal, regional and international markets.

### ***1.5. Challenges to policy implementation***

A number of factors are likely to make a handicap to policy implementation:

- Absence of linkage between extension and administration services of MINAGRI;
- Malfunction of extension and training services;
- Misinterpretation of the policy by various actors;
- Imbalance between research and transfer of technologies;
- Lack of a clear extension system;
- Insufficient training and information for a certain percentage of the population (ubujiji);
- Long practice of subsistence farming;
- Shortage of financial resources;
- Etc.

## II. AGRICULTURAL POLICY

- Overall objective;
- Key sub-sectors;
- Related fields

### ***2.1. Global objective of agricultural policy***

*To create conditions favourable to sustainable development and promotion of agricultural and livestock produces, in order to ensure national food security, integration of agriculture and livestock in a market-oriented economy and to generate increasing incomes to the producers.*

### ***2.2. Key sub-sectors***

- Agriculture;
- Animal Resources;
- Soil and water Management

#### **2.2.1. Specific objectives**

##### **A. Agriculture**

Specific objectives of this sub-sector are as follow:

- To set up measures aimed at increasing utilisation of agricultural input in intensification, implementation of regional and personal specialisation, professionalism of agriculture, improvement of measures to protect and conserve water and soils, marketing, conservation and transformation of agricultural produces;
- To improve quality and increase quantity in production of traditional export crops namely coffee, tea, pyrethrum in order to be competitive on international market;
- To diversify export crops through development of horticulture and introduction of new speculations easy for marketing;
- To encourage the private sector through incentive measures to enable it to participate intensively in production, processing, conservation and marketing of agricultural products;
- To promote professionalism in agriculture which consist of acquiring thorough techniques for production, marketing and processing agricultural produces.

## **B. Animal Resources**

The specific objectives of animal production sub-sector are the following:

- To create favourable conditions for the increase of livestock produces (milk, meat, eggs, honey, fish) through genetic improvement, feeding and animal health;
- To organise marketing circuits for livestock produces;
- To contribute to the increase of monetary income for farmers;
- To contribute to environmental protection through conservation and protection of soils.

## **C. Soil and water Management**

Specific objectives defined for the sub-sector of soil and water conservation are:

- To work all available lands susceptible to cultivation through optimum development of marshlands and lowlands subject to flooding using adequate water management infrastructures;
- To promote the management and optimum utilisation of water in agriculture;
- To improve soil fertility through implementation of measures that promote the use of more fertilisers either mineral or organic;
- To modernise production equipment through the development of animal traction farming and agricultural mechanisation suitable to the real conditions of a particular area.

### **2.2.2. Constraints to the development of agriculture in Rwanda**

After the diagnosis of agricultural sector, challenges to the three sub-sectors have been identified:

#### **A. Agriculture**

- Smallness of farms due to high population pressure;
- Low productivity of lands resulting from excessive use of land and low application of inputs including fertilisers, improved seeds and pesticides;
- Low level of commercial exchanges in agriculture;
- Absence of well defined extension system with clear orientations and suitable for the Country;
- Lack of awareness about market dynamics by the farmer;
- Difficulties to get access to agricultural credit;
- Too academic research whose findings are not extended to the population.



## **B. Animal Resources**

- Poor animal feeding in quality and quantity;
- Persistence of various enzootics and epizootics, some of which are transmissible to human (brucellosis, tuberculosis, rabies etc.);
- Low genetic performance of local breeds;
- Lack of conservation system (cold chain) causing degradation of animal products;
- Lack of adequate extension system;
- Lack of organised marketing circuit for animal products;
- Difficulties to get access to agricultural credit;
- Too academic research whose findings are not extended to the population.

## **C. Water and soil Management**

- Shortage of personnel qualified in rural engineers on decentralised entities ;
- Conservation of water and soil not integrated in agriculture and livestock;
- Shallow knowledge about water management by the farmers;
- Agricultural mechanisation nearly absent and less operational;
- Delay in the promulgation of the law on lands;
- Use of fertilisers ignoring soil composition;
- Marshlands badly and less exploited.

### **2.2.3. Strategies**

Strategies aiming to lift challenges pointed out in agriculture are the following:

#### **A. Agriculture**

##### **Strengthening research and extension**

Strengthening research and extension of research findings as well as promotion of any mechanism in sensitising the rural are of paramount importance. This will ensure the development of the sector by giving particular attention to new technologies and by ensuring most adequate means for their diffusion and uptake by the rural people. The basic principle for actors lies in their participation, which must allow all stakeholders to be both partners and associates, based on the real needs of the rural world. Extension will allow farmers to receive training and information on a regular basis in order to help them improve their production systems.

##### **Intensification**

Intensification aims to increase land and crop productivity through increased use of inputs (selected seeds, organic and mineral fertilisers, pesticides etc.) and improved agricultural techniques bearing in mind to first improve water supply (irrigation, runoff water collection etc.);

Commodities identified as priority and hence promising are: rice, maize, bean, Irish potato, Soya, coffee, tea, horticulture, pyrethrum and wheat), but this list is dynamic,

i.e. susceptible to change in time and space. Developing these crops must be accompanied by an appropriate technological package.

### **Agricultural marketing**

Intensification that requires increased use of inputs and regional specialisation will allow producers to take advantage of agro-bio-climatic conditions in various ecological zones to maximise production. This justifies the necessity to integrate agriculture in market economy to secure benefit to farming enterprises through high income and improved market.

Development of markets will provide adequate motivation to increase production and revenues to the producers. This will be achieved through marketing, strengthening of production capacities, and development of market, transportation and communication infrastructures in rural areas. Development of markets will also require storage and processing facilities for farm produces.

A particular attention will be drawn to traditional export crops, which are coffee, tea, pyrethrum as well as other promising commodities previously identified. Information on domestic, regional and international markets will improve marketing procedures.

It is important to increase production for these crops while ensuring quality of the products for more significant added value and hence increase the price to the producer.

### **Diversification and regional specialisation**

Crops will be developed in favourable agro-bio-climatic zones. Some crops are indeed more adapted than others according agricultural regions. Producers should diversify their crops, develop particular specialisations in which they can make more money and benefit from comparative advantages to maximise income.

## **B. Animal Resources**

### **Strengthening research and extension**

Strengthening research and extension would give priority to innovations and specialisations offering economic and financial benefits as well as adding value to previous achievements. Main axis of development the research should emphasises are related to:

- Evaluation and establishment of rational feeding systems;
- Production of basic fodder species;
- Efficient models of animal husbandry;
- Adaptability of imported purebred animal and hybrids obtained between different crossings according to ecological zones of Rwanda;
- Information on quality of local breeds;
- Animal health;
- Genetic improvement;
- Use of biotechnologies, etc.

## **Intensification and integration of agriculture/livestock**

Integration of livestock with agriculture appears to be the cornerstone to sustainable integration process. Most of efforts to be deployed in developing productivity would target family farms. In order to initiate and establish sustainable intensification of animal production, themes to be implemented are the following:

### **a. Improvement of zootechnical conditions**

Major points making the central core are:

- Promotion of stalling;
- Preparation, allotment and exploitation of modern pastures;
- Improvement of feeding and watering conditions;
- Management of reproduction and practice of basic zootechnical interventions;
- Maintaining training of technicians in livestock improvement.

### **b. Improvement of sanitary conditions**

Improvement of sanitation is based on two orientations with complementary principles of interventions:

- Implementation of disease prevention measures (compulsory or not, collective or not);
- Setting up of effective curative system. Animal health and any action having direct or indirect link with this theme will be implemented in innovative way, associating producers, and respecting the privatisation policy and development of the private sector. However, a number of prerogatives will remain in the hands of the Government such as epidemiological surveillance, veterinary inspection etc. Legal texts related to public health protection will be updated.

### **c. Genetic improvement**

A programme of genetic improvement is necessary given the limited potentials of local breeds. To this end, these orientations are privileged:

- Continuation and reinforcement of imports of improved breeds;
- Use of biotechnology in animal reproduction (artificial insemination, embryo transfer).

Implementation of these strategies must be channelled through re-launching of basic principles for shape-based selection, reinforcement of institutions whose mandate is confined in these fields and progressive disengagement of the Government.

## **Commodity-based approach and regional specialisation**

The success of this approach requires implementation of social programmes in charge of coordinating all activities of the branch on national level: technological and thematic research, extension/diffusion of technological progresses, regular training etc.

It will be necessary to revise roles of different actors in the sub-sector of livestock, the basic principle being to keep as far as possible Governmental services away from implementation. They will be reoriented on conception, implementation of laws, promotion and coordination of development of priority commodities.

Reorganisation of extension system based on deep study of the area and diversity of speculations according to local specialities cannot be overlooked.

### **Diversification**

In order to diversify sources of income to populations and minimise risks pertaining to market fluctuations, the Government intends to promote diversification of animal breeds. This strategy will contribute to the availability of a range of animal products on different markets.

### **Marketing of animal products**

Viability of measures undertaken in intensification is only achievable in the context of integration of livestock in the market economy and hence in the existence of marketing networks well organised.

A particular importance will be put on organising and developing circuits of collection, processing and marketing of animal products and sub-products. The Government will keep on getting out from production, processing and marketing to the benefit of the private sector.

Associations of producers will be promoted and strengthened in the perspective of helping them to preserve their interests. It will also be necessary to adopt measures for easy access to agricultural credit. Moreover, structures of collection, processing, distribution and quality control will be reinforced.

## **C. Soil and water Management**

### **Marshlands management**

Irrigation and marshlands drainage are very expensive. Selection of actions to undertake will then depend on assurance that investment is profitable. At this juncture, the Government will undertake:

- Implementation of small-scale infrastructures development, mobilisation and organisation of target groups as well as technical assistance through participation in the management and exploitation of marshlands;
- Organisation of committees on marshlands exploitation and management;
- Update of the Master Plan for the Management of Marshlands, watershed protection and soil conservation, which is essential to planning and investment programming.

### **Water conservation and soil fertility management**

It is well known that water is a key factor in agriculture. When it is not supplied adequately, farmers are less likely to invest in other inputs. Consequently, in the perspective of water conservation and soil fertility management, the Government will target:

- Integration of various effective techniques to control erosion, restoring and improving soil fertility as adapted to the environment and socio-economic conditions of the beneficiaries;
- Rainwater collection with the aim to keep it on the farm and gather it in root zone so as to maximise satisfaction of crops in water needs;
- Set up integrated management plan on the level of watershed taking into account particularities of family farms;
- Management of drainage zones (talwegs) which will allow limiting speed of water run-off to favour its diversion on the occasion of heavy rain and hence stabilise downstream infrastructures.

### **Integration of erosion control and soil management in the technological package to extend to the farmer**

Actions undertaken in the field of agriculture and livestock will be incorporated into a set of measures aiming to first sensitise and mobilise the farmer to better protection of soil on his farm and secondly, to try to come up with a step-by-step programme of an overall management of the hills.

### **Agricultural mechanisation**

Considering the precariousness of agricultural mechanisation in Rwanda, a number of options are envisaged. These are:

- Development of animal traction farming;
- Development of motorisation adapted to steep gradient of the Country;
- Development of post-harvest technologies (processing, conservation etc.).

### **Land law and land reform**

The existing land tenure system faces different constraints among which is excessive land sharing, scattered traditional settlement, duality of legal right and traditional right and of land law. This situation impedes with investment in land management and prevents mortgaging. The Government intends to adopt a law on land allowing implementation of agricultural development strategy whose objective is to contribute to food security.

## 2.2.4. Priority commodities

### 2.2.4.1. Criteria for selection

- Products susceptible to play an important role in national economy by capitalising rural people through domestic, sub-regional, regional and international markets (comparative advantages);
- Existence of transport, storage, conservation and processing infrastructures;
- Response to markets dynamic;
- Nutritional aspects;
- Yield.

### 2.2.4.2. Categorisation

For organisation ends, priority commodities are grouped into three categories. These will be dynamic in time and space, a commodity being able to change the category according to its behaviour towards the market.

#### A. Agriculture

##### A.1. First category: Export Products

###### 1. *Coffee*

Although the price of coffee has fallen on world market, the importance of coffee remained important due to:

- Its great contribution to monetary income to the population;
- The stimulation of internal commerce.

The recent outbreaks of washing stations giving coffee of very high quality more expensive than one produced through usual ways gives hope that this commodity will bring important incomes to the growers and to the Country.

Regeneration of old coffee trees is also a real potential to improve commodity productivity. Improvement of tending techniques and replacing of usual coffee trees by high yielding new varieties are also important.

###### 2. *Tea*

Tea is another important cash crop and the main source of foreign currencies for the Country. The main advantages of tea production are:

- Main source of incomes to the growers;
- Availability of cheap manpower;
- Favourable edapho-climatic conditions;
- Positive impact on physical environment through its harvesting layer that makes a favourable tool for water run-off control on fragile soils;
- World tea market generally high demanding.

For this crop, the Government will maintain its efforts to support tea growers grouped into village tea growers (VT) groups, cooperatives of tea growers (COOPTHE) and in associations of tea growers (ASSOPTHE) in order to increase their production in quality and quantity. The Government will maintain also its programme of privatisation of tea processing units and industrial blocks to ensure efficient management of tea factories and to concentrate on its proper commitment of setting up policies and follow-up of their implementation.

### **3. Horticulture**

#### *a. Pyrethrum*

Pyrethrum is a crop grown in the northwest of the Country. After a period of decline, this crop offers now new opportunities triggered off by its high demand on international markets. The Government is likely to set up mechanisms susceptible to increase its production and its quality. It will also develop access infrastructures as well as promoting this crop in other provinces suitable for it.

#### *b. Roses, exotic fruits (gooseberries, passion fruits, apple etc.) and ornamental plants*

In the purpose of diversifying exports products, some horticultural commodities are gaining momentum. The Government will maintain its efforts towards their promotion because of the economic advantages it renders to the producers and to the Country.

### **A.2. Second category: Domestic market**

#### **A.2.1. Potential exports**

##### *1. Fruits and vegetables*

Fruits and vegetables make an important source of income to the producers and contribute to the improvement of food. This commodity has a clear export potential if we consider the existence of international market. Strategies to be adopted will focus mainly on the organisation of producers and marketing circuit.

##### *2. Bean*

Bean makes an important source of proteins in rwandan meals. Actions considered to increase bean production are the improvement of soil fertility, use of improved seeds and improvement of land use practices.

##### *3. Irish potato*

Irish potato grows mainly in ash soils of high altitude. This crop shows a quick response to fertilisation and becomes an important source of income to the populations because of its high consumption on national and sub-regional levels. The Government will take responsibility to make improved seeds available, to promote the use of organic and

chemical fertilisers and protection of this crop against the main diseases. On the other hand, in order to increase the high value of this product, a particular emphasis will be put on processing conservation and organisation of its market circuit.

### **A.2.2. Potential substitutes to imports**

#### *1. Rice*

The choice of rice is due to its high performance in the marshlands and lowlands. Potential zones for its production are distributed throughout the Country. Rice offers a potential market in the whole Country and the region.

#### *2. Maize*

Maize shows a high response to fertilisers in different agro-bio-climatic zones of Rwanda. This crop is much liked by the population because of the role it played in food shortage periods of after 1994. Maize is also very important in animal feeding.

#### *3. Wheat*

Wheat grows well in the regions of high altitudes of Rwanda. Development and promotion of its industry will enable to put a limit to imports and hence make a source of income to the populations.

#### *4. Soya bean*

Soya bean represents an important source of proteins and becomes an industry likely to generate significant incomes due to its processing (Soya oil, animal feeds, yoghurt etc.).

### **A.3. Third category: new industry of high economic potential**

These crops are susceptible to play a key role in national economy, mostly in the diversification of exports, but their comparative advantages for Rwanda must first be defined by the research before developing promotion programmes on national level.

The Government will develop in any way special support programmes to producers involved in this industry and having already got markets for their products. These crops are: Aloe Vera, vanilla, pepper, paprika, avocado, cassava, sorghum, Japanese apples, ail, ginger, lemon, mango, melon, gombo, papaya, strawberry, tomato, cherry etc.



## **B. Animal Resources**

### **B.1. First category: export products**

#### *1. Hides and skins*

Hides and skins industry should be developed for the high value their bring to livestock together with its contribution to GDP. A particular emphasis will be put on organising the industry, pre-treatment of hides and skins and improvement of marketing circuits.

### **B.2. Second category: products sold on local market**

#### **B.2.1. Export potential**

##### *1. Meat*

To develop meat production in Rwanda, the Government will make its choice on

- Small ruminants (goats and sheep), rabbits and chickens;
- Cows eliminated for their low milk production capacity (reformed cows, beef etc.).

For this industry, it is recommended to make animal producers change from extensive livestock growing system to the semi-intensive system that keeps animals in temporary stalling changing animal husbandry into activity generating incomes and done in a professional manner, bearing in mind marketing of products thus obtained.

##### *2. Eggs*

Promotion and development of eggs industry focuses first to meeting the local demand always increasing. This implies satisfaction of national demand in egg producing hens, technical supervision of chicken farmers, distribution of hens of good source in rural area, promotion of crops used in manufacturing chicken feeds and organisation of marketing circuit for eggs.

The development of beekeeping will mainly target to make modern beehives available, availability of honey extraction and processing material, wax and other products of beehive (propolis, royal jelly, pollen, venom etc.) that are not or badly exploited. There are possibilities to produce special honey in terms of specific quantities for medicinal purposes depending on kind of plants from where honey was collected. These innovations would enable to increase production as well as initiating a certain specialisation to beekeepers.

## **B.2.2. Potential substitute to imports**

### *1. Milk*

The objective is to initiate a milk industry with highly productive cows mainly in permanent stalling in as system of integrated agriculture /livestock.

Rwanda climate is favourable to high capacity milk cows production because rainfall and temperature favour the production of fodder throughout the year. The development of this industry is promising as the demand in milk and milk by-products always increases. For example, while the production milk was 112,463 tons in 2003, the present needs are estimated at 256,559 tons a year.

### *2. Fish*

The policy of Rwanda in fish development industry will target mainly fishery and fishing cultivation of high yields for the actors. This industry offers important development potentials among which:

- The existence of many water plans, such as lakes, rivers, many water ponds and dams and ponds where fish can be sown;
- A local demand in fish, higher than the local supply, often met by partial imports;
- The existence of ecological niches at present empty and where fish can be sown by introducing new fish species;
- The existence of fish technologies relatively simple and easily acceptable by any person likely to practice the carrier of fish farmer.

### *4. Animal feeds*

For animal feeding, the use of concentrated feeds represents a priority in the framework of animal production intensification. The policy in this area will target to promote crops required for their processing, to increase the control of their quality and to develop mechanisms enabling their distribution among the farmers.

## **B.3. Third category: new industry of high economic potential**

These industries are likely to play an important role in national economy, mostly through the diversification of imports, but their comparative advantage for Rwanda must first be confirmed by research before vast promotion programme are undertaken. For industries newly introduced, such as sericulture, producers will work in harmony with researchers before embarking on large-scale promotion.

## **C. Soils and waters Management**

### *1. Erosion control*

Erosion control will receive a particular attention of the Government given that it makes important damages. It will make part of technological package to be extended to the farmers. On the other hand, stern measures will be taken towards farmers who do not control erosion efficiently.

### *2. Marshlands management*

Marshlands management and rational use of waters will remain Government priorities. Speculations practiced in the managed marshlands must make good use of investment done. This will imply a reasonable choice of crops economically viable and which respond well to edapho-climatic conditions of the area.

### *3. Full technological package*

The technological package to be proposed to the farmer will be specific to its promising speculation and must be complete (necessary inputs such as seeds, fertilisers (mineral or organic), pesticides etc.). It will be accompanied by sufficient information on good agricultural or animal production practices and on interlinked themes of agriculture such as erosion control, irrigation, integrated control and integration of agriculture and animal production.

## **2.2.5. Cross-Cutting Issues**

### **2.2.5.1. In agriculture**

#### **1. Agricultural research**

Rwanda Institute of Agronomic Sciences (RIAS), National University of Rwanda and other institutes of higher education conduct agricultural research. These Institutes have constraints linked to the war and genocide of 1994, such as shortage of qualified personnel and technical equipment, which is insufficient. Their bigger challenge relies in taking research findings to the beneficiaries.

#### **1.1. Mandate of agricultural research**

Agricultural research must involve, in determined and intimate manner, rural beneficiary communities, researchers and extension officers in the generation and extension of adopted technologies/innovations. This will enable to promote high standards of productivity for a market-oriented agriculture that contributes to the ultimate objective of improving income and food security to the population, while preserving the environment.

## 1.2. Implementation strategies

### a. Transformation of agriculture

To transform Rwanda agriculture, it will be necessary to adopt an approach whereby research planning, generation and transfer of technologies, agricultural innovations will be done in a framework of partnership more intimate between researchers, beneficiary communities and other actors of rural development (governmental and non-governmental organizations, private sector, civil society etc.).

### b. Adaptive research

The required resources for agricultural research being limited and also the necessity to produce rapidly solutions to the problems being hard, research will have to be consequently adaptive. Other kinds of research (fundamental and applied) will only be justified in cases of specific problems of Rwanda and will only be done in a framework of an efficient partnership in order to guarantee the chances of success and efficiency.

### c. Commodity research

Contrary to the past whereby research was responding to biophysical constraints of production (new varieties, fertilisation formulae etc.), it would cover from now all the chains of the commodity development (production, post-harvest, marketing).

### d. Decentralisation of research

In order to allow researchers to be nearer and in close contact to beneficiary populations and other partners of the rural development, an effective decentralisation will be born in mind. It will be consequently initiated a commodity of research stations in different ecological regions of the Country.

## 2. Extension

Potentialities existing on extension level are the following:

- A high demand of beneficiary population for extension services;
- Existence of themes and adapted technologies for agricultural production;
- Existence of NGOs and farmers' associations able to get involved in extension;
- Current decentralisation policy that reinforces linkage between extension officers and the population.

Rwanda Government recommends strengthening of agricultural research and extension services in order to increase the know-how of producers. This will ensure the development of the sector by putting much emphasis on new technologies and by mobilising appropriate means to attain the goal.

Participatory approach will allow all concerned actors be associated to the identification of needs and extension themes. Extension will be implemented by agencies of specialised services, by associations or farmers' cooperatives. This will involve the

Government on short-term basis, to put emphasis on the development of human resources through formal and informal trainings. At this juncture, Government will also train the trainers (abakangurambaga b'ubuhinzi) or groups or subgroups or agricultural cooperatives levels. Such farmers' organisations will be sensitised in such a way that they will support training costs; trainers will be evaluated based on the results of their performance.

### **3. Agricultural credit**

Financing of agricultural activities often refers to a credit because most of operators do not always have their proper means to develop their activities. Hence, to invest in production, processing, conservation, storage, transport or other related activity, establishment of a credit system more flexible to the producers will contribute to the development of agricultural sector.

In order to set up an efficient agricultural credit system, some actions will be done:

- Mobilisation of funds by the Government (on long term basis) to be injected in the banks in order to finance the agricultural sector at flexible conditions;
- Setting up enough mortgage funds to allow small holders get access to the credit line and thus reduce risks of the Banks;
- Bonus of agricultural credit;
- Promotion of agro-industry in order to guarantee a market to the producers and avoid worries of the credit institutions;
- Coordinating and harmonisation by MINAGRI of activities of different interveners in financing agricultural sector.

### **4. Public health, animal health and crops protection**

By the fact of important potential risks brought to human health by animals and animal or crop products sold on the market on one hand, and the need expressed by the Government to increase agricultural exports on the hand, it will be essential to set up or strengthen existing policies and standards aiming to the protection of public health, crops and animal protection and improvement of animal health.

Aspects to be developed meanwhile are:

- Control and sanitary inspection of the healthiness of food items;
- Zoo and phytosanitary inspection;
- Issue of certificates during import and export of products ready for human consumption, animal feeds, for pharmaceutical use, surgery, and/or agro-industry.

#### **4.1. Control of epizootics, enzootics and plant pathologies**

Persistence of some epizootic, enzootic diseases together with plant pests is always a big threat, which hinders the expansions of animal and crop productions.

Concerning the control of epizootic and or enzootic diseases, it will be conducted by organising campaigns of vaccination against diseases of economic importance and/or

public health, strengthening of the diagnosis capacity and setting up of paramount epidemio-surveillance system. The control of animal movements (circulation, transfer, marketing and transport) across the boundaries and in the Country will be strengthened. Beside this, the Government will set up measures governing transport and marketing of animals.

Again, a particular emphasis will be put on the system of control and distribution of medical care and veterinary products. Hence, the Government will have to promote free exercise of veterinary profession.

The farmer must absolutely rely on efficient money demanding veterinary medicine (availability and know-how of a practitioner, money demanding access to medicines of quality and of a cost compatible with the possibilities of the farmer) to avoid rapid and irreversible loss of hope.

To enable the sub-sector of livestock to access international marketing, five priority diseases must be eradicated (Foot and mouth disease, CBPP, APP, LSD and fowl typhoid) and two others controlled diseases (diseases caused by ticks and trypanosomiasis). In the framework of public health preservation, four animal diseases easily attacking man will attract a particular attention. These are rabies, tuberculosis, brucellosis and cysticercoids.

For phytosanitary protection, this will be done through channel of integrated control, this is considered as reliable mean to reduce the use of pesticides to minimise their negative impact on the environment and on human health.

The major following problems occur at present while using pesticides in Rwanda:

- Lack of adequate legislation for the use of pesticides and or bad use of these products;
- Uncontrolled distribution of pesticides;
- Bad labelling and packaging of pesticides;
- Lack of system of approval;
- Lack of appropriate laboratories to control quality of pesticides;
- Unawareness of risks in handling and use of pesticides by the suppliers, farmers and the big public;

Policies to protect crops must bear in mind these following major aspects:

- Promotion of integrated phytosanitary management to increase the viability of agricultural production;
- Implementation of efficient strategies to control import, distribution and use of pesticides;
- Training of farmers in techniques of phytosanitary protection.

## 4.2. Hygiene and quality control for animal and crop products

Sanitary security of food represents a priority in public health. Beyond interventions still discreet among the local authorities, there are public structures having or not a laboratory for quality control:

- National Hygiene Service;
- Veterinary Services;
- Bureau of Standards;
- Crop protection service;
- National Police.

These main services are supported by other public structures such as the laboratory of the National University of Rwanda and the National Veterinary Laboratory at RUBILIZI.

At present, the control of sanitary security for food faces a certain number of challenges:

- An incomplete judiciary arsenal, often not adapted or insufficiently harmonised;
- Control structures and laboratories suffering from a shortage of human and financial means;
- Existence of a craft sector of production and distribution making sanitary conditions often not acceptable;
- Maximisation of profits by the suppliers that does overlook regulations and public health standards;
- Existence of illegal slaughtering out of the slaughter houses without any veterinary inspection;
- Irregularity and absence of serious control in processing and distribution of food stuff;
- Absence or irregularity of control on collective restaurant level;
- Non respect of labelling standards (non-respect of expiration time, incomplete mentioning etc.) and storage (rupture of refrigeration chain during transportation and distribution) for some products industrially packed;
- General absence of refrigerated storage facilities susceptible to affect the quality of the products;

In order to compensate for deficiencies encountered in sanitary security of food, some improvements are taken into account to protect public health. These will focus on:

- Regulations and legislation text that must be updated, completed and harmonised;
- Official control structures that must be complementary and linked; their reinforcement by the Government with the help of its partners must be assured;
- Strengthening of capacities of the control laboratories according to their specifications;
- Institutional reform of standards office as negotiator with international partners of WTO namely Codex Alimentarius, I.O.E and FAO;
- Associations of consumers that must be supported enough to complete actions of control services;

- Technical support and appropriate training for different bodies involved in the production, collection, storage and processing of animal or crop foodstuffs in order to guarantee a respect of quality standards and healthiness;
- Establishment of minimum standards of location, management and functioning for abattoirs and slaughterhouses;
- Establishment of sanitary survey plans for foodstuffs with risks (meals sold in public places, fast-food etc.).

## **5. Competitiveness for quality and stability of markets supplies**

In agricultural policy, the Government will promote an agriculture strictly market oriented. Thus, this one will fulfil some conditions like:

- Identification of niches for special products;
- Certification;
- Respect to standards required by the market;
- Conditioning and labelling;
- Storage (silos, cold rooms etc.);
- Conservation (non-stop cold chain).

## **6. Communication**

Modern developments in the field of information and communication technologies allow to make a "technological jump" with reduced costs and to start the development of a real agricultural information management system.

The policy will be to integrate new technologies that can improve performances significantly: transmission of foodstuffs right from the field, processing and analysis, storage and diffusion.

### **2.2.5.2. In economy**

#### **1. Agriculture and gender**

Gender and agricultural production are intimately linked together. Effectively, a woman is regularly asked to fulfil a certain number of tasks of agricultural sector. It happens that extension systems adopted in Rwanda for many years have not taken into account a woman, as a beneficiary and actor in the field of agricultural development.

The national policy will strengthen woman capacities to make her more producing and more economically independent, to facilitate her access to credit, to land ownership, to appropriate technologies, to training and to employment. She will have to be much represented in the decision-making structures. It will be necessary to integrate problems related to gender in policies and programmes of agricultural development.



## **2. Agriculture and food aids**

In many cases, food aids generally come from outside while most of the time the same foodstuffs are available to the local producers in some parts of the Country. The line to take will be to ask different donors in that field to buy their aids on local markets and refer to foreign markets in case of evident needs.

## **3. Agriculture and HIV/AIDS**

HIV/AIDS has become a serious problem for Rwanda, but what is much alarming is that its victims are young and adult people who fall sick and remain in beds for years, period in which they should be productive. This pandemic is thus attacking the live force of the Nation.

It is practically impossible to make an efficient fight against food insecurity in the families attacked by AIDS if interventions are not focussing specific needs of infected families and do not include measures to prevent the disease and slow down its propagation.

The Government intends consequently to formulate programmes of agricultural development, integrate prevention measures and fight HIV/AIDS among other themes of agricultural extension. This would contribute to reduce propagation and impact of the disease.

## **4. Agriculture and education**

Agricultural education is given by different secondary schools which train technicians on  $A_2$  level, by BUSOGO Higher Institute for Agriculture and Animal Production that train higher technicians on  $A_1$  level, by National University of Rwanda that train professional agricultural officers on  $A_0$  level and other new universities.

At present, outlets for winners from these Institutions are rare and Government or a few NGOs stand for their first opportunity. Hence, enterprises in agro-industry sector are limited and therefore little employments are offered on this side;

It is not easy to see finalists, at the end of their studies, embarked in agricultural production. Attractive measures that will be set up by the Government (credit, mortgage funds, subsidies) will enable these people to invest in this sector.

Beside this, primary and secondary schools can serve as an ideal framework of training extension and promotion of appropriate agricultural technologies by introducing in their curricula programmes and themes of agricultural training.

It is also necessary to mention that education in various disciplines will enable to break the barrier of agricultural sector by offering different employment opportunities.

## **5. Agriculture and the private sector**

The private sector has a big role to play in the development of agricultural sector in Rwanda. The main principle will be to keep the Government away from activities related to production, processing and marketing of farm products to the benefit of private sector, its role being concentrated on conception activities, reinforcement of laws, planning, promotion and coordination of development of agricultural sector.

## **6. Agriculture and non-agricultural rural activities**

To diversify income sources for producers, the Government will take the following orientations:

- Setting up of a programme of labour intensive (HIMO);
- Support to resume extra-agricultural activities that can generate income in the rural area (craft, small and medium-sized enterprises, etc.);
- Development of activities in processing agricultural produces;
- Creation of employments by developing urban centres, tourism (multiplication of services) and infrastructures.

## **7. Cooperatives and farmers' organisations**

Some producers are not grouped with the purpose to defend their interests and to acquire common services. Their cooperatives and farmers organisations make an ideal framework of agriculture extension.

They encounter however problems of organisation due to the lack of technical supervision. The Government encourages these farmers' cooperatives and organisation and takes the responsibility to provide to them a sustainable support in the field of training, information and markets organisation for their farm produces.

### **2.2.6. Fields of particular attention**

Regarding their importance, a particular emphasis will be put in the following fields:

#### **2.2.6.1. Chronic food shortage in some parts of the Country**

Some regions of the Country have a food shortage almost chronic. The Government will develop special programmes by making use of regional potentials in a rational way. This will consist to promote specific crops (high yield, short rotation, less demanding in water, conservable etc.), small stocks on family level and strategic stocks on regional level. It will also be necessary to encourage integration of agriculture and livestock.

#### **2.2.6.2. Soils and water conservation management**

Taking into consideration the importance of this subject, soils and water management needs a particular attention. This will focus mainly on erosion control, irrigation under its entire form, collection and utilisation of rainwater from farming ends.

### **2.2.6.3. Reconstitution of small cattle**

Until now, efforts to re-establish small cattle undertaken by different interveners after the tragic events of 1994 have not yet met the needs felt on the level of beneficiary population. Taking into account economic and nutritional and impact of small cattle on family level and its role in integration of agriculture and livestock, policy in this field will focus on supporting farmers to acquire small cattle. Again, in the framework of extension, a particular emphasis will be put in improving technical know-how susceptible to help the farmers undertake their activities properly.

### **2.2.6.4. Control of animal and crop diseases**

Crop and animal production have a high importance in food security and income generation for a Rwandan farmer. In order to ensure their increase in quantity and quality, the Government will maintain its efforts in controlling main enzootics, epizootics and plant pests.

This will be achieved by strengthening the already existing structures and by involving much more the participation of beneficiaries and private sector.

### **2.2.6.5. Distribution of inputs**

The use of inputs in agriculture in Rwanda is still insignificant. In the context of increasing population, decrease of soil fertility and limited use of manure and other organic matter, the solution relies in increasing the use of fertilisers. In addition, protection of crops and use of animal production inputs make a field of public interest to be encouraged.

To facilitate the increase of inputs use, it is convenient to abolish the bottlenecks existing along the chain of their production, marketing, important extension. Many obstacles in the use of inputs have been retrieved:

- Weak demand by farmers who do not have experience and know-how in the use of fertilisers;
- Difficult access to fertilisers due to financial problems;
- Lack of inputs near the farmers.

To avoid such difficulties, the Government will adopt strategies aiming to stimulate farmers to use inputs by establishing demonstration blocks to build up the demand, to extend geographical commodity distribution and to put up a sustainable supply in a sector already liberalised.

Private operators together with associations and cooperatives will play a key role in import and geographical distribution of inputs.

Government will set up credit lines with bonus, which will provide necessary resources to the importers of inputs and stimulation to sell them on credit basis to farmers.

Again, these credit lines will facilitate to get access to capital for importation of modern inputs to a number of importers sufficiently big to promote competition in this field.

Setting up of inputs marketing service in MINAGRI will allow:

- To analyse tendencies on imports level;
- To ensure that quality control of inputs is done;
- To monitor tendencies on inputs price level and integration of markets;
- To publish inputs prices on wholesale and retail trading.

#### **2.2.6.6. Storage of agricultural products**

Government is involved in developing farm products storage in different regions of the Country. This will prevent farmers to sell their products in the harvesting period only. Similarly, this action will reduce considerably the deterioration of agricultural products following the lack of appropriate storage means and will contribute to giving an added value to sold products.

#### **2.2.6.7. Rural infrastructures**

Rural infrastructures improve agricultural production on more than one title. Thus, supply of inputs is impossible when a transport network is absent to make them reach the users on time and at reasonable costs. Again, once the production is received, one must be able to send it to other marketing centres.

In its policy of promoting easily marketable products, the Government is held responsible to set up infrastructures for transport, storage and conservation of agricultural production. In addition, livestock infrastructures (watering places, kraals, slaughterhouses, veterinary dispensaries etc.) will be promoted. For agricultural and animal products, policy will be to identify and to manage most important sites, and to provide them with necessary infrastructure equipment.

#### **2.2.6.8. Competitiveness, quality and stability of market supplies**

Rwandan agriculture will be have to be competitive, to offer products of good quality and to ensure supplies stability. Hence, it must respond to standards required by markets and take benefice of infrastructures (transport, storage, conservation, processing etc.).

The Government will provide a support to private sector by setting up a permanent secretariat to economic operators in farming sector.

Attractive advantages will be provided according to different categories of priority commodities. Hence, consequent means will be provided in descending order, from first to third category.

### **2.2.6.9. Agriculture and animal production around national parks**

Agro-pastoral activities will have to respect integrity of the National Parks. By collaborating with decentralised entities, the Government will develop special programmes generating income for the neighbouring populations. A certain percentage taken from the generated funds by National Parks will serve to finance these programmes. For example, tea cultivation programme will be implemented around Nyungwe National Park and the Programme of Pyrethrum around Volcano National Park. Around Akagera National Park, a programme to promote livestock infrastructures will be promoted.

### III. POLICIES, PROGRAMMES AND SYSTEMS ACCOMPANYING AGRICULTURAL POLICY

#### ***3.1. Policies***

In accordance with national agricultural policy, specific policies will be developed. Some of these are:

- Policy on agricultural research;
- Policy on biotechnologies;
- Policy on financing agricultural sector (agricultural credit);
- Policy on gender and agricultural development;
- Policy on food aids;
- Policy on irrigation;
- Policy on cooperatives.

#### ***3.2. Priority programmes***

Priority programmes must respond to the global objective of the national agricultural policy that is to generate monetary incomes to the producers and to ensure food security. Identified programmes are:

- Coffee programme;
- Tea programme;
- Pyrethrum programme;
- Roses programme;
- Exotic fruits programme;
- Ornamental plants programme;
- Beans programme;
- Rice programme;
- Maize programme;
- Wheat programme;
- Soya programme;
- Irish potatoes programme;
- Hides and skins programme;
- Honey programme;
- Meat programme;
- Milk programme.

### ***3.3. Special programmes***

Special programmes are developed to respond to the specific problems felt in the fields requiring particular attention. Thus, the following programmes will be developed:

- Special programme for regions suffering from a chronic food deficit;
- Special programme for soils and water conservation management;
- Special programme for animal and crop diseases control;
- Special programme for inputs;
- Special programme for competitiveness, quality and stability of market supplies;
- Special programme for agriculture and livestock in the buffer zones of national parks;
- Special programme for storage of agricultural products.

### ***3.4. Systems***

To handle emergencies (drought, floods, crop and animal diseases etc.), it is convenient to strengthen the systems of forecast, survey and early warning, strengthening intervention capacities for decentralised entities, local communities and farmers' organisations. New methods and technologies to ensure a rapid and efficient information system will be set up. It is imperative to set up a permanent system that can enable to inform and train producers and diffuse research findings according to the needs felt by the beneficiaries.

At this juncture, they will be developed:

- Early Warning and Information System (EWIS)
- National Extension System (NES)
- Market price Information System (MIS)

## IV. INSTITUTIONAL FRAMEWORK

### ***4.1. Inventory of involved bodies***

#### **4.1.1. MINAGRI**

The Government intervenes in agriculture via the Ministry of Agriculture and Animal Resources and the decentralised structures. MINAGRI acts on the level of policies and strategies planning. It ensures also the supervision of producers and the coordination of actions taken by different partners.

The mandate assigned to the Minister of Agriculture and Animal Resources is as follow:

- a. Initiate, follow-up and evaluate policies, strategies and programmes of modernisation of market oriented agriculture and livestock;
- b. Develop appropriate systems of transfer of production technologies, processing, storage and transformation of agricultural products;
- c. Develop strategies and programmes of soil and water conservation management in a sustainable way;
- d. Promote cash crop, particularly coffee, tea, pyrethrum and diversification of other export crops of high benefit such as flowers, wheat, fruits and vegetables etc.;
- e. Promote modern livestock oriented towards milk production, meat, eggs, fish and honey and make use of livestock sub-products;
- f. Develop an appropriate system of research and extension based on real needs of the farmers;
- g. Set up appropriate measures to attract private economic operators to invest in agriculture;
- h. Collect and diffuse necessary agricultural information and coordinate activities of all partners of the agricultural sector;
- i. Develop special programmes to fight hunger in the regions of endemic drought;
- j. Set up a system of early warning on hunger and natural disasters;
- k. Collaborate with other partner institutions to find markets for farm produces.

#### **4.1.2. Other ministries and institutions**

The ministry of agriculture and animal resources collaborates closely with other Ministries in different fields. With MINITERE, the fields of collaboration are environment, water and forests. With MINEDUC and other research institutes, emphasis is put on training and fundamental and applied research. MINAGRI works closely with MINALOC for the success of decentralisation of agricultural services and in the field of rural development. Other Ministries such as MIFOTRA, MINICOM, MIGEPROFE, MIJESPOC and other Institutions like Privatisation Secretariat, CEPEX, RIPA etc. play an important role and participate to the development of rural world in close collaboration with MINAGRI.



### **4.1.3. Decentralised administration**

Nowadays, a lack of coordination between central services of MINAGRI and decentralised structures is obvious. This results in the duplication of activities and lack of a framework for consultation and transmission of information.

### **4.1.4. Donors, NGOs and Civil Society**

The Government have initiated many programmes and projects with the help of multilateral or bilateral donors and NGOs. The programmes of the Government have been initiated according to precise objectives, established based on a political framework that determines short, medium and long terms targeted orientations.

### **4.1.5. Credit organisations**

Specialised institutions showed no interest to agricultural sector due to the past bad experience and the size of credits needed that are often small. Taking into account high interest rates (18%) that limit agricultural investment, the Government is deploying to the producers and other operators easy credit lines to help them increase their productivities and incomes.

### **4.1.6. Farmers and farmers' organisations**

Farmers grouped in associations or cooperatives easily get supervision services. Strengthening of partnership with research and extension services will enable them to be not only beneficiaries but also actors of agricultural development.

## **4.2. Strategies**

Taking into account this situation described in the field of institutional framework, some strategies are considered:

### **a. Coordination of partners in agricultural sector**

In order to ensure a good coordination of all actors operating in the agricultural sector, MINAGRI is committed to:

- Participate actively in group-work on rural development;
- Set up a multidisciplinary unit in charge of needs assessment, resources allocation, coordination of programmes and technical assistance;
- Participate to meetings of consultations on development of policies related to rural world development.

**b. Human resources development**

For human resources, Rwanda knows many problems following war and genocide of 1994 to have enough technical personnel in quality and quantity. Implementation of policy requires human resources suitable for this level and a structure less heavy and more efficient. Therefore, the Government will proceed to the strengthening of capacities for its technicians and producers.

**c. Legal framework**

It is suitable to highlight that many of the existing laws in agricultural sector are disparate and were set up in colonial period. To be in accordance with the new constitution and political orientations of the Government, they will be retrieved, revised and updated.

**d. Financing agricultural policy**

Agricultural policy cannot be put into action without preconditions. Hence, mobilisation of resources is necessary. It will be done through the already existing tools or to be set up (CEPEX, Multidisciplinary unit, Group Work on rural development etc.). On the other hand, it will be necessary to set new orientations for the existing projects that operate in the development of agricultural sector so that they can fulfil their objectives (RSSP, PADEBL, STABEX, CECDP etc.).

## **V. IMPLEMENTATION OF AGRICULTURAL POLICY**

### ***5.1. Partnership***

#### **5.1.1. Partners**

For the success of agricultural policy, MINAGRI will work closely with its key partners, namely:

- Ministries involved in rural development;
- Decentralised entities (Provinces, Districts, Sectors);
- Universities and Research Institutions (RIAS, NUR, KIST, HIAL etc.);
- Civil society;
- Non governmental organisations;
- Donors.

#### **5.1.2. Consultations meetings**

MINAGRI will organise consultations meetings through:

- Group on rural development;
- Consultative council on agricultural research;
- Group of partners of agricultural sector;
- Weekly meeting on implementation of agricultural policy.

### ***5.2. Policy and planning***

#### **5.2.1. Policy coordination and agricultural planning**

MINAGRI will ensure the coordination of implementing agricultural policy and planning. It will be committed to:

- Update and/or develop priority and special programmes with specific objectives;
- Help Provinces and decentralised units in the establishment of action plans on the development of agricultural sector;
- Facilitate mobilisation of resources for identified programmes;
- Coordinate extension services.

#### **5.2.2 Planning**

In agricultural planning, development plans will consider three to five priorities for provinces, two to five for districts and one priority of the sector.

#### **5.2.3. Implementation**

On sectors level, consultative council (Njyanama) will be responsible of coordinating the implementation of agricultural policy. Model sectors will be defined and will be given infrastructures such as clustered villages (imidugudu), banks or micro-finance institutions, erosion control infrastructures for agricultural ends etc.

Farmers who are the main actors in the implementation of agricultural policy will be sensitised to organise themselves in associations and cooperatives to defend properly their interests and become easily accessible.

Trainers will do extension on grassroots level (abakungarambaga), by model farmers, specialised farmers organisations, etc.

Planning will make use of tools such as research through socio-economic survey and adaptation studies. It will also make use of data from agricultural survey, soil map, marshland master plan and the geographical information system (GIS).

### ***5.3. Marketing of agricultural products***

Commodity-based approach proposed by agricultural policy considers the whole chain from production to consumption of the produce. To enable access of agricultural products on market, a partnership between private sectors and public sectors cannot be bypassed.

The public sector will be represented by MINAGRI, RIAS, RIPA, RBS etc.; for the private sector, its representatives will be members of associations of the business community that work in the agricultural sector and are member of Rwanda Private Sector Federation.

These associations will be organised in different commissions representing interests of all actors of the commodity:

- Commission on coffee;
- Commission on tea;
- Commission on horticulture;
- Commission on seeds and cereals;
- Commission on Irish potato;
- Commission on animal production.

The council of agro-business and marketing will be chaired by the Ministry of Agriculture and Animal Resources and will hold regular meetings bringing together MINAGRI, RIAS, RPSF and RSSP. It will also be attended by one member from each commission above mentioned and by representatives of banks and financial institutions.

### ***5.4. National Action Plan***

The Government will proceed on elaboration of short-term national action plan (2005A-2007C). This will combine all action plans developed for each commodity and will highlight activities of different identified programmes together with their budget. It will be followed by a mid-term and long-term action plan (2008A-2012C) that will take into account evaluation of achievements of a short-term plan before its development for indicated period.