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Report No: 21048-RW

PROJECT APPRAISAL DOCUMENT  
ON A  
PROPOSED CREDIT  
IN THE AMOUNT OF SDR 37.2 MILLION  
(US\$48 MILLION EQUIVALENT)  
TO THE  
REPUBLIC OF RWANDA  
FOR A  
RURAL SECTOR SUPPORT PROJECT  
IN SUPPORT OF THE  
FIRST PHASE  
OF THE  
RURAL SECTOR SUPPORT PROGRAM (APL)

March 1, 2001

**Rural Development 2  
Africa Regional Office**

## CURRENCY EQUIVALENTS

(Exchange Rate Effective January 31, 2001)

Currency Unit = Rwanda Francs (RWF)  
RWF 431.4897 = US\$1  
US\$1 = SDR 1.29181

FISCAL YEAR  
January 1 - December 31

## ABBREVIATIONS AND ACRONYMS

ADB	African Development Bank
AMT	Appropriate Means of Rural Transport
ARMD	Agricultural and Rural Market Development Project
ATT	Arterial Trails and Tracks
BNR	Banque Nationale du Rwanda
CAS	Country Assistance Strategy
CCOAI B	Conseil d'Appui des Organisations d'Appui aux Initiatives de Base.
CDC	Commune Development Committees
CEPEX	Central Project and External Finance Bureau
CETSE	Commercial Enterprises and Technical Support Entities
CRDP	Community Reintegration and Development Project
DCA	Development Credit Agreement
DEM	Directorate of Extension and Marketing
DPM	Direction de la Politique Monétaire
DRSA	Direction Régionale des Services Agricoles
ERC	Economic Recovery Credit
EMES	Extension, Monitoring and Evaluation Specialist
FASDO	Farmer Agricultural Services Delivery Organizations
FEWS	Food Security Early Warning System
FY	Fiscal Year
GDP	Gross Domestic Product
ICR	Implementation Completion Report
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy and Research Institute
ISAR	Institut des Sciences Agronomiques du Rwanda
LACI	Loan Administration Change Initiative
MED	Monitoring and Evaluation Division
MINAGRI	Ministry of Agriculture, Animal Resources and Forestry
MINALOC	Ministry of Local Administration and Social Affairs
MINECOFIN	Ministry of Finance and Economic Planning

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Country Director:	Emmanuel Mbi
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Task Team Leader:	Ousmane Badiane

MININTERE	Ministry of the Interior, Communal Development and Resettlement
NGO	Non-governmental organization
PA	Project Agreement
PAC	Program Advisory Committee
PASDO	Private Agricultural Services Delivery Organizations
PFP	Policy Framework Paper
PIM	Project Implementation Manual (also named as Project Implementation Plan)
PNAS	Programme National d'Actions Sociales
PP	Procurement Plan
PRA	Participatory Rural Appraisal
PRGE	Poverty Reduction and Growth Facility
PRSP	Poverty Reduction Strategy
PSCU	Project Support and Coordinating Unit
PSD	Private Sector Support Project
RSSP	Rural Sector Support Project
RWF	Rwanda Francs
SFA	Subsidiary Financing Agreement
SIM	Système d'Information sur les Marchés
SLO	Specialized Local Organizations
UBP	Union des Banques Populaires du Rwanda
UNDP	United Nations Development Program
USAID	United States Agency for International Development



**RWANDA**  
**RURAL SECTOR SUPPORT PROJECT**

**CONTENTS**

<b>A. Program Purpose and Project Development Objective</b>	<b>Page</b>
1. Program purpose and program phasing	3
2. Project development objective	4
3. Global objective	4
4. Key performance indicators	5
<b>B. Strategic Context</b>	
1. Sector-related Country Assistance Strategy (CAS) goal supported by the project	8
2. Main sector issues and Government strategy	9
3. Sector issues to be addressed by the project and strategic choices	11
4. Program description and performance triggers for subsequent loans	12
<b>C. Program and Project Description Summary</b>	
1. Project components	21
2. Key policy and institutional reforms supported by the project	25
3. Benefits and target population	25
4. Institutional and implementation arrangements	26
<b>D. Project Rationale</b>	
1. Project alternatives considered and reasons for rejection	33
2. Major related projects financed by the Bank and other development agencies	33
3. Lessons learned and reflected in proposed project design	35
4. Indications of borrower commitment and ownership	36
5. Value added of Bank support in this project	36
<b>E. Summary Project Analysis</b>	
1. Economic	38
2. Financial	39
3. Technical	39
4. Institutional	40
5. Environmental	41
6. Social	44
7. Safeguard Policies	46

F. Sustainability and Risks	
1. Sustainability	47
2. Critical risks	47
3. Possible controversial aspects	49
G. Main Credit Conditions	
1. Effectiveness Condition	50
2. Other	50
H. Readiness for Implementation	51
I. Compliance with Bank Policies	51
Annexes	
Annex 1: Project Design Summary	52
Annex 2: Detailed Project Description	66
Annex 3: Estimated Project Costs	79
Annex 4: Cost Benefit Analysis Summary, or Cost-Effectiveness Analysis Summary	80
Annex 5: Financial Summary for Revenue-Earning Project Entities, or Financial Summary	93
Annex 6: Procurement and Disbursement Arrangements	94
Annex 7: Project Processing Schedule	104
Annex 8: Documents in the Project File	106
Annex 9: Statement of Loans and Credits	107
Annex 10: Country at a Glance	108
Annex 11: Environmental Assessment	110
Annex 12: Letter of Rural Development Policy	119

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IBRD 25927R

RWANDA  
RURAL SECTOR SUPPORT PROJECT  
**Project Appraisal Document**

Africa Regional Office  
AFTR2

<b>Date:</b> March 1, 2001 <b>Country Director:</b> Emmanuel Mbi <b>Project ID:</b> P064965 <b>Lending Instrument:</b> Adaptable Program Loan (APL)	<b>Team Leader:</b> Ousmane Badiane <b>Sector Manager:</b> Joseph Baah-Dwomoh <b>Sector(s):</b> AY - Other Agriculture <b>Theme(s):</b> Poverty Reduction; Private Sector <b>Poverty Targeted Intervention:</b> N
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<b>Global Supplemental ID:</b> P070700  <b>Supplement Fully Blended?</b> No	<b>Team Leader:</b> Ousmane Badiane <b>Sector Manager/Director:</b> Joseph Baah-Dwomoh <b>Sector(s):</b> VY - Other Environment
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Program Financing Data							
APL	Indicative Financing Plan				Estimated Implementation Period (Bank FY)		Borrower
	IDA US\$ m	%	Others US\$ m	Total US\$ m	Commitment Date	Closing Date	
APL 1 Loan/ Credit	48.00	90.6	5.00	53.00	03/29/2001	12/31/2005	Government of Rwanda
APL 2 Loan/ Credit	55.00	91.7	5.00	60.00	03/31/2006	12/31/2011	Government of Rwanda
APL 3 Loan/ Credit	50.00	90.9	5.00	55.00	03/31/2012	12/31/2017	Government of Rwanda
<b>Total</b>	153.00		15.00	168.00			

**Project Financing Data**  
 Loan     Credit     Grant     Guarantee     Other:

**For Loans/Credits/Others:**  
**Amount (US\$m):** 48

**Proposed Terms:** Standard Credit

<b>Grace period (years):</b> 10	<b>Years to maturity:</b> 40
<b>Commitment fee:</b> 0.5%	<b>Service charge:</b> 0.75%

<b>Financing Plan:</b>	<b>Source</b>	<b>Local</b>	<b>Foreign</b>	<b>Total</b>				
BORROWER		1.08	0.00	1.08				
IDA		27.87	20.13	48.00				
LOCAL COMMUNITIES		1.10	0.00	1.10				
GLOBAL ENVIRONMENT FACILITY		3.59	1.41	5.00				
<b>Total:</b>		<b>33.64</b>	<b>21.54</b>	<b>55.18</b>				
<b>Borrower/Recipient:</b> GOVERNMENT OF RWANDA								
<b>Responsible agency:</b> MINISTRY OF AGRICULTURE, ANIMAL RESOURCES AND FORESTRY (MINAGRI)								
Address: Kigali, Rwanda								
Contact Person: Alfred Mutebwa, Director, Planning and Agricultural Statistics Division, MINAGRI, Kigali								
Tel: (250) 85053 Fax: (250) 85057 Email:								
<b>Estimated disbursements ( Bank FY/US\$M):</b>								
<b>FY</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>				
<b>Annual</b>	10.72	13.05	12.04	12.19				
<b>Cumulative</b>	10.72	23.77	35.81	48.00				
<b>Project implementation period:</b> 2001-2005								
<b>Expected effectiveness date:</b> 06/30/2001 <b>Expected closing date:</b> 12/31/2005								

OCS APL PAD Form Rev. March, 2000

## **A. Program Purpose and Project Development Objective**

### **1. Program purpose and program phasing:**

1.1 Agricultural growth in Rwanda has slowed down significantly over the last two decades, leading to a continuous increase in the level of poverty. The annual growth rate of aggregate production has dropped to -2.0 percent by the early 1990s from 0.8 percent in the early 1980s. The civil war and genocide in 1994 have contributed to a sharp deterioration of the situation, having caused a significant decline in agricultural production. Rwanda's population, 92 percent of which is rural, is expanding rapidly, resulting in increasing pressure to raise agricultural output and employment to an expanding labor force. Accordingly, the main purpose of the Rural Sector Support Program (RSP) is to help the Government of Rwanda achieve its strategic goal of revitalizing the rural economy and thereby increasing rural incomes, reducing poverty, and reinforcing national stability. The program is guided by the recognition that the most effective way to reduce poverty, and thus achieve the stability goal, is to raise the productivity and expand the employment of resources that the rural poor own or depend on for their livelihood, primarily land and labor. The challenge of poverty reduction, therefore, goes beyond the improvement of overall sector performance over a certain period or that of given crops or sub-sectors in a more permanent manner. Significant poverty reduction is to be achieved through sustained and broad-based growth in the portions of the economy where poor people tend to be employed. Consequently, the efforts under the proposed program would have to extend beyond the agricultural sector to include support for off-farm productive activities in the rural areas.

1.2 The proposed Rural Sector Support Program would seek to achieve the above objective through transfer of adequate financial and technical resources to provide the technology, infrastructure, support services, and institutional capacity that are required for faster growth in the rural economy. It would take long-term efforts to effect any significant progress towards these objectives. For instance, Rwanda would have to start almost from scratch to develop support systems for productive activities in rural areas. Furthermore, the necessary transition from subsistence-based agriculture, in which the large majority of Rwandese farmers are currently involved, to market-oriented production would require the adjustment of production and consumption patterns as well as current technical practices. As productivity and output would grow and farmers would move from household consumption to production of surpluses for the market, distribution systems would unfold, inducing new production and consumption choices for both agricultural and consumer goods, thereby creating productive opportunities for economic agents within and outside of the agricultural sector. These institutional and technological changes represent evolutionary processes, the pace and structure of which are not fully predictable, given that the dynamics of Rwanda's rural sector, much like that of many other developing countries, are not well understood and documented. Moreover, clear and proven models and approaches of intervention to effect the implied transitions are not available. All these limit the possibility of detailed ex-ante planning and design of the program of intervention. Hence, the strong need for a long-term orientation, flexibility and adjustability in terms of the time frame and structure of the support to be provided.

1.3 Accordingly, the proposed support program would cover a time period of 14 years and would be implemented in three main phases:

- **Phase I: 2001-2005:** The emphasis during this initial phase would be on building the institutional and technical capacities that are needed to support the generation and adoption of efficient cropping and post-harvest technologies and hence launch the intensification process.
- **Phase II: 2006-2011:** During the intermediary phase, the program would deepen and broaden its

support in order to accelerate the pace of intensification and commercialization of agricultural production.

- **Phase III: 2012-2017:** The final phase of the program would seek to utilize the stimulus resulting from faster growth in agricultural production to promote the diversification of economic activities in the rural areas and expand the productive employment of available resources.

1.4 The proposed staggered approach would allow the program to expand its activities as experience is accumulated, the understanding of the working of the different systems in the rural economy expands, and the targeted beneficiaries develop new skills, adjust to new challenges, and exploit new opportunities. The incremental approach reduces risk and raises the likelihood of successful outcomes, as subsequent phases of the program are designed and implemented on the basis of lessons learned and results achieved from preceding activities.

## **2. Project development objective:** (see Annex 1)

2.1 The development objective of Phase I of the program is to equip farmers, other target private sector operator groups, and the relevant government institutions with the basic institutional and technical capacities that should lay the groundwork for subsequent productivity-raising interventions in the areas of: (a) agricultural services delivery systems; (b) small-scale rural infrastructure development and maintenance; (c) rehabilitation of marshland and hill-side farming; (d) promotion of traditional and alternative export agriculture, and (e) diversification of economic activities in the off-farm sector of the rural areas. Although capacity-strengthening will be the focus of the first phase, activities will be initiated in each of the above five areas in order to support ongoing economic recovery strategies and provide the opportunity for hands-on learning.

## **3. Global objective:** (see Annex 1)

3.1 The primary objective of the related GEF operation of the RSP is the conservation and sustainable use of natural resources through the integrated management of critical ecosystems, with emphasis on:

- Wetlands/watershed management;
- Dryland ecosystem management; and
- Reducing pressure on the Protected Areas through community-based management of the buffer zones (which presently only exist around Nyungwe Forest) and areas adjacent to the protected areas (mountain ecosystems).

3.2 This objective would be accomplished through:

- the development of an enabling environment for sustainable resource use. GEF resources would initially focus on the conservation and wise use of wetland ecosystems. During the implementation of the RSSP and the GEF-supported components, policy, regulatory and institutional gaps and requirements for the conservation and sustainable management of other critical ecosystems, particularly dryland and mountain ecosystems, would be identified;
- development and implementation of community-based integrated management plans for critical ecosystems (wetland, dryland and mountain ecosystems). The promotion and introduction of better land husbandry techniques, including improved cropping and livestock systems, soil and

water conservation, and integrated plant nutrient systems will be important elements of the management plans;

- creation of an Environment Information System (EIS) and a program for monitoring physical, ecological, and socio-economic changes in critical ecosystems of Rwanda; and
- capacity-building and institutional strengthening at Central, Prefecture, and Local levels in integrated natural resources management.

#### **4. Key performance indicators: (see Annex 1)**

4.1 Indicators of progress towards the achievement of the program's objectives would document the effectiveness of program activities in reducing poverty through intensification and commercialization of agricultural production and diversification of the rural economy. There are two groups of indicators: a first group, that applies to the entire life of the program; and a second, that consists of complementary indicators that are added as the program activities are expanded and intensified over its three phases. The first set of indicators would include: (a) the change, compared to the baseline, in the average level of household incomes; (b) the change in the percentage of population under the poverty line; (c) the change in the average level of crop yields per hectare; and (d) and the change in the average returns per labor unit in the project areas.

4.2 The additional set of indicators is presented in Table 1 below. For Phase I, the indicators would document the extent to which the program has succeeded in strengthening the institutional and technical capacities of beneficiary groups and targeted central government services and local administrations. They would include: (a) the number of farmer organizations [(Farmer Agricultural Services Delivery Organizations (FASDO))] that have been created and that operate satisfactorily; (b) the number of Private Agribusiness Services Delivery Organizations (PASDO) that have been promoted; (c) the total area of rehabilitated and adequately exploited farmed-marshlands and hillsides; (d) the number of production, post-harvest, and marketing infrastructure units that have been created; (e) the total units and types of Appropriate Means of Rural Transport (AMT) that are introduced and disseminated under the project; (f) the numbers of production and post-harvest units that have been created; and (g) the quantities of exported non-traditional export crops.

4.3 At the beginning of Phase II, another sub-set of indicators would be added to capture the impact of program activities on production performance. They would include the change, against the baseline, in: (a) the quantities of modern inputs used per capita and per hectare; (b) the quantities and shares of marketed crop output per household; (c) the level of average crop yields on rehabilitated farmed marshland and hill-sides areas; (d) the unit costs per hectare of export crops targeted by the program; (e) the level of output of export crops targeted by the program. A final sub-set of indicators would be added to Phase III of the program and would document the success that has been achieved in diversifying productive activities in the rural areas of Rwanda. They would include: (i) the change against the baseline of the number of people employed in off-farm activities; and (ii) the change in the level of incomes generated through off-farm activities in the rural areas.

**Table 1: Program Performance Indicators**

PERFORMANCE INDICATORS	TARGET INDICATOR VALUES			MONITORING AND EVALUATION
	<i>Phase I: 2001-2004</i>	<i>Phase II: 2005-2009</i>	<i>Phase III: 2010-2014</i>	
	<i>Create institutional, technical, and infrastructural capacities that are needed to support the generation and adoption of efficient cropping and post-harvest technologies.</i>	<i>Accelerate the intensification and commercialization of agricultural production.</i>	<i>Promote the diversification of economic activities in rural areas and expand the productive employment of available resources.</i>	(a) Quarterly project progress reports; (b) Supervision reports; (c) Evaluation reports; (d) Reports based on updates of the baseline rural household survey at the end of Phases I, II, and III.
1. Number of supported farmer organizations (FASDOs)	500	1,000	1,000	
2. Number of supported Private Agribusiness Services Delivery Organizations (PASDOs)	80	60	40	
3. The total area of rehabilitated farmed marshlands	4,000 (ha)	8,000 (ha)	8,000 (ha)	
4. The total area of rehabilitated farmed hillsides	2,000 (ha)	5,000 (ha)	5,000 (ha)	
5. The total units of marketing facilities that have been constructed	18	20	20	
6. Appropriate Means of Rural Transport (IMT)	Successfully pilot tested	Disseminated	Broadly adopted	
7. The increase in the quantities of modern inputs used per capita and per hectare	[50 (%)]	100 (%)	200 (%)	

8. The increase in the quantities and shares of marketed crop output per household	[50 (%)]	100 (%)	200 (%)	
9. The increase in the average crop yields on farmed marshland / hillsides	[50 (%)]	100 (%)	200 (%)	
10. The decrease in the unit costs per hectare of export crops	[10 (%)]	25 (%)	50 (%)	
11. The increase in quantities of coffee and tea exports	[25 (%)]	50 (%)	25 (%)	
12. The increase in the exported quantities of alternative crops	[100 (%)]	[50 (%)]	50 (%)	
13. The increase in the number of people employed in off-farm activities	[10 (%)]	[20 (%)]	50 (%)	
14. The increase in the incomes generated through off-farm activities	[10 (%)]	[20 (%)]	50 (%)	

**Note:** Square brackets indicate that the indicators would be computed for the corresponding phases but would not weigh strongly in the evaluation of these phases. The reason is that the time lag in the response of the productive sectors to the policies, incentives, and technical and institutional support that are provided under the program is expected to delay their full impact until later stages in the life of the Program.

## **B. Strategic Context**

**1. Sector-related Country Assistance Strategy (CAS) goal supported by the project:** (see Annex 1)

**Document number:** IDA\R98-30

**Date of latest CAS discussion:** April 7, 1998

Progress Report: IDA\R99-135/1 dated June 29, 1999

1.1 The CAS goal supported by the project over the transition period is the revitalization of the rural economy to increase rural incomes, reduce poverty, strengthen farming communities, and reinforce national stability. Bank-focused themes relevant to the project include: (a) sustainable increases in agricultural productivity, provision of social and economic infrastructure, and improved operation of rural markets; (b) investment in human resource development and capacity building, and development of a skilled labor force; (c) support policy and regulatory reforms in addition to selected infrastructure investments in order to promote private sector trade and investment, and improve Rwanda's competitiveness; and (d) improve donor coordination and resource mobilization.

### **1a. Global Operational strategy/Program objective addressed by the project:**

1a.1 According to the Ramsar Convention definition, wetlands of international importance are "wetlands which are important for the conservation of global biological diversity and for sustaining human life through the ecological and hydrological functions they perform". The ecology, botany, zoology, limnology and hydrology, and their significance as a habitat for migratory birds are important considerations. Despite its small size, Rwanda is characterized by a large and diverse variety of habitats and species. Some 2,150 species of plant life are thought to exist and, while the number of endemics is not known, it is believed to be high. Many of the continent's rare wildlife species also occur in the country among which are 16 species of primates, including the mountain gorilla (*Gorilla gorilla beringei*), small populations of elephants and black rhino, and a large number of birds. Two of Rwanda's most biologically significant habitats are the montane forests and wetlands. Most of the country's remaining forests are located between altitudes of 1700 to 3000 meters on the divide between the Nile and the Congo basins. One extensive forest is located within the Volcanoes National Park. This Park, in combination with adjacent forests in Uganda and Congo, contain approximately one-half of the world's total remaining population of mountain gorillas. Rwanda's other Protected Areas are the Akagera National Park and Nyungwe Forest Reserve. Nyungwe Forest is vital for the protection of a number of endangered species, including the chimpanzee (*Pan troglodytes schweinfurthi*), the black and white colobes (*Colobus angolensis ruwenzorii*), the guenon (*Cercopithecus spp.*), the leopard (*Panthera pardus*), the serval (*Leptailurus serval*) and some 13 species of endangered orchids.

1a.2 At present, no wetlands outside the Protected Areas are formally protected as reserves. Approximately 60,000 ha of wetlands are located within the Akagera National Park, and some small wetland areas within Nyungwe Forest. A study carried out, for the Ministry of Agriculture, Animal Resources and Forests, by SOGREAH Ingénieurs Conseils in 1989-1992, to develop a Master Plan for the management of the Nyabarongo and Akanyaru Rivers (Etude du Plan Directeur d'Amenagement et de Mise en Valeur des Vallées de la Nyabarongo et de l'Akanyaru, carried out by SOGREAH 1989-1992) identified four zones (six sites) of **global** significance for priority protection because of their richness in flora, fauna and fish biodiversity, important ecological functions such as water regulation and drainage, importance as a habitat for fish spawning and migratory birds (Rwanda is on the African-Eurasian flyway for migratory waterbirds), and/or as an area of exceptional natural beauty. Because of the civil disturbances in 1994, these recommendations have yet to be implemented.

1a.3 The formulation of a National Wetlands Policy (with GEF resources) would be an important step in the conservation and sustainable utilization of Rwanda's wetlands. A policy would:

- provide a broad national framework for the sustainable management of wetland resources;
- reflect a consensus for coordinated action by the various stakeholders;
- serve as a tool for action; and
- ensure government commitment at the political level because it is adopted by Cabinet and Parliament.

1a.4 GEF funds would play a catalytic role in linking sectoral ministries responsible for different aspects of natural resources management, developing an enabling policy and regulatory environment, promoting broad-based stakeholder participation, strengthening human resource and institutional capacities, promoting an integrated ecosystem approach to the management of natural resources, and financing those activities that would provide global benefits. GEF would furthermore provide a critical link between the RSP, ADB Master Plan, and other donor initiatives. Through activities that are oriented towards promoting the sustainable management of upland watersheds, conservation and sustainable use of the wetlands, alleviating land and water degradation and, conserving biodiversity, the project will contribute to the protection of critical ecosystems.

## **2. Main sector issues and Government strategy:**

### **Macroeconomic and Sectoral Strategic Options**

2.1 The Government of Rwanda, with the assistance of the World Bank and the International Monetary Fund, has completed a Policy Framework Paper (PFP) in October 1999, outlining its objectives for the medium-term and laying out the framework for an adjustment program which is being supported by the Bank's ongoing Economic Recovery Credit (ERC), and the Fund's Poverty Reduction and Growth Facility (PRGF). One of the main components of the ERC is the revitalization of the agricultural and rural economy. Furthermore, the Government has recently completed an interim Poverty Reduction Strategy (PRSP), which will guide future Bank and Fund intervention in the country. The rural development component of the PRSP confirms the Government's strategic choice of revitalizing the rural economy through intensification and commercialization of agricultural production and diversification of economic activities in the rural areas. It also confirms its commitment to create and maintain an enabling policy environment for the development of a market-oriented agricultural system through reforms in the institutional, regulatory, and incentives framework as well as its strategy to promote export competitiveness through further liberalization of the trade, exchange, and investment regimes.

### **The Rural Development Problem in Rwanda**

2.2 The rural development problem in Rwanda has been described in great details in the 1998 Bank report on Agricultural Intensification in Rwanda. According to the report, the combination of rapid population growth with limited availability of agricultural land has resulted in the following set of problems in Rwanda's rural sector: (a) increasing labor intensity and declining labor productivity in the agricultural sector; (b) strong subsistence orientation of agricultural production, reinforced by weak commodity and labor markets; (c) the resulting pressure on local off-farm employment and wages; and (d) declining incomes and a fragile food security situation. These problems reinforce each other as limited market orientation reduces the incentives for technology innovation, which is necessary to raise labor productivity and incomes. Using the results from two major household-level studies carried out in the late eighties by the International Food Policy Research Institute (IFPRI) and Michigan State University (MSU), the report

shows that the relative lack of market orientation among Rwandese farmers is due as much to production constraints as it is linked to constraints on the demand side. These constraints emanate from: (i) production conditions which encourage household consumption over market transaction, given the low opportunity cost of labor and the fact that most food crops can be grown in many parts of the country; (ii) a production structure which includes very few cash crops that are grown over wide areas and, therefore, fails to stimulate a broad supply of marketing services or foster the integration of smallholders into the market process; (iii) a low rate of urbanization, which means that there are few significant deficit areas to generate the excess demand to stimulate supplies from potential surplus areas; and (iv) insecure access to markets, which undermines trading as a reliable measure to cope with food insecurity and encourages a tendency to autarchy as a rationale response.

### **The Strategic Objectives and Choices for Accelerated Rural Growth**

2.3 The Bank report also suggests that the supply-side measures that build the core of the government strategy, such as raising the average farm size, decreasing the person-to-land ratio, or promoting access to fertilizer, would not by themselves lead to sustained increases in the rate of intensification, even though they are an important part of the solution. The level of investment in technical innovation that is necessary for sustained intensification and productivity increases depends on the rate of commercialization, i.e., the pace at which additional output can be absorbed through local and foreign markets to yield returns that are high enough to induce continued investment in better technologies. Hence, it is impossible to achieve such high rates of growth without greater market participation by Rwandan smallholder farmers. The strategic choices for Rwanda's agricultural sector should, therefore, be guided by the need to: (a) reduce the incentives among smallholders for autarchy by encouraging production for the market and reducing the risk of relying on the market to satisfy food consumption needs; (b) alleviate the domestic demand constraints associated with the current production structure and trading systems; and (c) raise the rate of adoption of improved inputs.

2.4 The challenge to implement a market-based rural development strategy in the context of an essentially subsistence-oriented agricultural sector is considerable. However, it is evident that increased commercialization of agricultural production and greater export orientation are the best ways to achieve sufficiently high growth rates, not only in agriculture, but also in the rest of the rural sector and the overall economy, and, thereby, achieve sustained poverty alleviation in Rwanda. The Bank's 1998 Poverty Assessment Report estimates the per capita growth rate that would be necessary to bring poverty down to its level of the mid-eighties by the year 2012 at 5 percent. With a growth rate of 7 percent, the level of poverty would be cut by about half. There is ample evidence in the development literature, which indicates that the maximum achievable long-term rate of growth under subsistence agriculture is between 1 percent and 2 percent. As a comparison, the rate of growth of the index of agricultural production in Rwanda was 0.8 percent between 1975 and 1984, falling to -2.2 percent between 1985 and 1989 and -6.7 between 1990 and 1996. Increased market orientation is, therefore, seen by the Government of Rwanda as the central element of its rural growth and poverty alleviation strategy.

### **3. Sector issues to be addressed by the project and strategic choices:**

3.1 The analysis of the rural development problem in Rwanda suggests that the entry points of the strategy to foster broad-based growth in Rwanda's rural sector over the next 10-15 years should be: (a) expansion of existing industrial crops (coffee and tea); (b) promotion of alternative high-value smallholder crops; and (c) intensification of existing food crop systems. The above should be accompanied by the following subsidiary short-term objectives (within 5 years): (i) to restore competitiveness in the production and trading systems in the coffee and tea sectors; and (ii) to expand domestic and foreign outlets for high demand elasticity crops as well as existing potentially tradable food crops, such as rice, horticulture, and floriculture. In the medium- to long-run, non-farm productive sectors should be promoted to exploit the stimulus effect arising from a revitalized and faster growing agriculture sector.

3.2 The Ministry of Agriculture has recently completed extensive work on the formulation of its agricultural strategy. The strategy reflects a clear shift from the past narrow approach of food self-sufficiency towards greater market-orientation, underpinned by intensification in input use, diversification and specialization in agricultural production. In general, the agricultural strategy includes the following major components: (a) investment in the rehabilitation of productive infrastructure; (b) rebuilding of the institutional structure of agricultural extension and research; (c) complete restructuring of the input provision services; (d) support to farmer groups to become stronger partners in the generation and dissemination of cropping technologies and in improving the operation of input distribution and output marketing systems; (e) promotion of regional specialization in production; (f) rehabilitation of traditional export crops and diversification of exports; (g) restoration and conservation of soil fertility; and (h) promotion of peri-urban agriculture.

3.3 Because of the tremendous population pressure, there is hardly any undeveloped land outside the Protected Areas and wetlands. The rural population has had no choice but to cultivate increasingly larger areas of these wetlands, which has been done in a haphazard manner with little regard for ecological balance and has caused adverse environmental impacts. There have also been numerous reports about changes in micro-climates of some of the watersheds after the natural vegetation has been cleared. Even the large wetland areas, thought to be of international significance because of the important ecological role they play in water regulation and as important habitats and sources of biodiversity, are under threat. These areas, although not formally protected as reserves, were considered to be somewhat impenetrable because of their size and inaccessibility. Recent events, however, have led to encroachment into the fringes of these wetlands and, in some cases, incursions into larger areas that were previously considered inaccessible. If these developments continue at their current pace and unregulated manner, in addition to the tremendous loss of biodiversity, they pose a serious threat to national and international water resources.

### **Issues Being Addressed under the Ongoing Agricultural and Rural Market Development Project**

3.4 The Agricultural and Rural Market Development Project (ARMDP), which became effective on December 30, 1999, was prepared to address the constraints related to the deficiencies in local input distribution and output marketing systems, including the access to credit for modern farm inputs. ARMDP's main objective is to contribute to the revitalization of Rwanda's agricultural and rural economy by successfully identifying policies and institutional mechanisms to: (a) promote efficient, private sector-based local agricultural input distribution and output marketing systems in order to: (b) raise modern farm input use among farmers. It does this by testing alternative approaches to: (i) facilitate access by farmers to credit for modern farm inputs; (ii) provide technical advisory services to farmers on the use of modern farm inputs; (iii) encourage the emergence of a sustainable modern input import and

distribution system; and (iv) encourage investments by private traders in marketing services in rural areas. The project is organized in two major components, each of which is made up of sub-components regrouping mutually reinforcing sets of activities. The first component focuses on the demonstration of effective and replicable mechanisms to: a) significantly and sustainably raise modern farm input use among farmers; and b) expand and strengthen the nascent private sector-based input import and distribution systems. The second component seeks to: c) provide an incentive framework as well as technical advisory services that are conducive to greater market orientation among small-holders; d) encourage private sector investment in marketing services; and e) provide the technical and institutional support to raise the efficiency and reduce unit costs in rural marketing systems.

### **Issues to be Addressed under the Proposed Rural Sector Support Program**

3.5 The above project (ARMDP) is a pilot activity and deals primarily with the market-related constraints of the rural development problem. The existence of efficiently operating input distribution and output marketing systems is a critical precondition for the solution of the technological and sustainability issues that are associated with the government's long-term objectives of intensification, commercialization, and diversification. ARMDP became effective more than a year ago and will have been active for about two years by the time the implementation of the currently proposed project begins. It is anticipated that it will have produced initial impacts on the quality of local market operations as well as provided workable solutions as to how to eliminate the remaining deficiencies in this area. Moreover, ARMDP deals predominantly with food crops. The proposed Rural Sector Support Program (RSP) would: (a) expand ARMDP's successful activities with respect to the removal of the remaining market-related constraints; and (b) extend its interventions to include traditional and alternative export crops. RSP would also address other dimensions of the rural development equations that were not being targeted under ARMDP, that is: (c) the development of demand responsive and sustainable agricultural services systems in order to sufficiently generate and effectively disseminate adequate cropping and post-harvest technologies; (d) the rehabilitation of marshland and hill-side areas that are currently under farming in order to fully exploit the productivity potential and ensure sustainability of farming practices in these areas; (e) remove the bottlenecks in local transport systems, which in the medium terms are expected to pose significant constraints to the expansion of output and increase in the intensification of agricultural production; and finally (f) foster the development of non-farm productive activities in the rural areas.

## **4. Program description and performance triggers for subsequent loans:**

### **Overview of Overall Program**

4.1 The proposed overall program would consist of three consecutive phases to be implemented over a period of 14 years. The initial phase would go from Year 1 to Year 4 and is described in greater detail in Section C. Phase 1 would focus primarily on building the institutional and technical capacities that are needed to support the generation and adoption of efficient agricultural production and post-harvest technologies. The strengthening of these capacities would lay the groundwork for subsequent program activities. The institutional and technical support that is provided during this phase would be coupled with initial investment activities to provide the opportunity for hands-on learning and experimentation on the side of the target beneficiary groups and institutions. It would, therefore, include financial assistance through matching grants to promote investment in agricultural production and other agribusiness activities. Based on the results of Phase 1, the second phase of the program, from Year 5 to Year 9, would extend and deepen the institutional and technical support and raise the investment activities in order to accelerate the pace of intensification and commercialization of agricultural production. Once the pace of agricultural growth starts accelerating, the third and final phase of the program, which would go from Year 10 to Year

14, would implement activities to promote the diversification of economic activities in the rural areas and expand the productive employment of available resources.

4.2 The initial phase of the program would concentrate on strengthening the institutional and technical capacities of the primary target groups and institutions that will participate in the implementation of program activities. These include: (a) farmer groups, (b) private sector operators that intervene in agribusiness and other areas of rural development; (c) private R&D institutions; (d) local administrations and community groups; and (e) the lead research and extension institutions. The objective of this phase is to lay the necessary groundwork for the introduction of expanded activities in subsequent stages of the program to: (i) establish effective and sustainable agricultural services delivery systems; and (ii) develop practical infrastructure improvement and maintenance arrangements. These two sets of activities would build the core of the program to which targeted sub-sector-specific interventions would be added to: (iii) improve and sustain the efficiency of production in currently farmed marshlands and hill-side areas; (iv) raise the competitiveness of the export crop sector; and (v) stimulate employment and income generation in the off-farm sector. The entire Phase 1 of the program would be composed of seven components, including a program support and coordination component with an integrated monitoring and evaluation unit.

4.3 Phase One would include the following components, with the following main objectives:

**Rehabilitation of farmed Marshland and Hillside Areas:** The objective under this component would be to empower: (i) beneficiary farmers to efficiently manage marshland/hill-side cropping and livestock activities and promote the adoption of improved soil, water and fertility conservation techniques; and (ii) private operators to intervene in land and water infrastructure construction and maintenance;

**Integrated Management of Critical Ecosystems:** The Program's objective under this component would be to strengthen the capacity of local communities to effectively manage critical ecosystems. This component would be a GEF-funded activity to be prepared and implemented by MINITERE;

**Promotion of Commercial and Export Agriculture:** This component would seek to develop export crop agriculture through facilitation of access to investment capital and strengthening of capacities of farmers and exporters in order to raise the productivity and competitiveness of Rwanda's export sectors;

**Support to Agricultural Services Delivery Systems:** The Program's objective under this component is to strengthen the capacities of agricultural research and extension systems in order to generate and extend improved technologies to farmers and enhance the delivery of services; given the very weak capacities in the research systems, the first phase would include the: (i) rebuilding of ISAR's research and analytical capacities; (ii) training of scientists; and (iii) building the capacities of lead research and extension services to involve farmers and private operators in the generation and dissemination of cropping and post-harvest technologies;

**Small-scale Infrastructure Development:** This component's objective is to strengthen the capacities of: (i) local communities to prepare and supervise small-scale infrastructure sub-projects; (ii) private sector operators to construct and maintain such infrastructure; (iii) farmers and other private sector operators to acquire transport equipment and post-harvest infrastructure; and (iv) water management infrastructure to improve agricultural productivity.

**Promotion of Off-farm Productive Activities in Rural Areas:** The activities under this component should lead to higher levels of off-farm employment and incomes in the program areas, in particular, and in rural areas, in general. During the first phase of the program, the objective would be to develop strategies and implement pilot activities during the first phase, which can be scaled up in subsequent phases to generate higher levels of off-farm employment and incomes in the program areas, in particular, and in rural areas, in general;

**Program Support and Coordination:** Given the decentralized and participatory mode of implementation that is proposed for the Program, the main objective under this component would be to: (i) ensure effective monitoring and evaluation of program activities throughout the implementation of the program; and (ii) ensure effective coordination between, and support to, the various implementing agencies and beneficiary groups given the decentralized and participatory mode of implementation that is proposed for the Program.

#### **Performance Trigger for Subsequent Loans**

4.4 The Rural Sector Support Program is designed to cover a time period of 14 years and to be implemented in three main phases. The transitions from one phase to the next will be determined based on the performance of the program during each phase. The performance can be represented by a set of indicators which will be monitored and evaluated during the course of the program. These evolutionary processes are expected to allow the program to expand its activities as experience is accumulated, the understanding of the working of the different systems in the rural economy expands, and the targeted beneficiaries develop new skills, adjust to new changes, and exploit new opportunities.

#### **Assessment Criteria and Trigger Indicators**

4.5 The assessment criteria for transition to the subsequent credits and measurable triggers would be as follow.

4.6 **Rehabilitation of Farmed Marshland and Hill-side Areas.** The overall performance criteria under this component is the effectiveness in: (i) establishing ownership and achieving full participation in project implementation on the part of local administrations; (ii) building trust between the latter and beneficiary groups around project activities; and (iii) strengthening farmer capacities to efficiently exploit the rehabilitated areas. It is expected that the program implementation would demonstrate by the end of Phase I and maintain throughout Phase II:

- (a) effective commitment on the part of local administrations to work with the Program Coordination and Management Unit to implement project activities; and
- (b) adequate capacity of beneficiary farmers to maintain and manage water and soil management infrastructure and adopt new technologies to raise and sustain cropping efficiency on marshlands and hill-side areas.

Consequently, the triggers for subsequent credits under this component would be:

- (i) the total area of rehabilitated farmed marshlands reaches 4,000 ha and 8,000 ha at the end of phases I and II, respectively;
- (ii) the total area of rehabilitated hill-side areas reaches 2,000 ha and 5,000 ha at the end of

phases I and II, respectively; and

- (iii) the average crop yields on rehabilitated marshland/hillsides are 100 percent higher than the baseline at the end of Phase I.

4.7 **Integrated Management of Critical Ecosystems (GEF Component).** The RSP provides an opportunity for restoring some of the key functions of wetlands and the associated catchment areas. The catchment areas not only replenish water to the wetlands but also serve as a repository for renewable natural resources and sanctuary for biodiversity, including some of the rare and endangered species. This calls for catchment area/ecosystem approach to ensure that all the key factors which are likely to influence production are included in the project implementation process. Such a process would also ensure that the key stakeholders are involved in the implementation process. Critical ecosystem can be defined in two ways. The overall performance criteria under this component is the effectiveness in: (i) maintaining the critical ecosystems which support other production systems; (ii) improving the buffering capacity of the critical ecosystems, such as watersheds, so as to ensure steady water flows throughout the year. This will in turn guarantee continued productivity of the rehabilitated hillsides and the marshlands; and (iii) maintaining those ecosystems that support part of the lifecycle of endangered or globally threatened species of flora and fauna. It is expected that the program implementation under this component would demonstrate the following:

- (a) restored capacity of the wetlands and hillsides for production while enhancing other ecological and environmental benefits;
- (b) negative effects on transboundary water resources minimized;
- (c) bio-diversity conservation in both natural and modified environments enhanced; and
- (d) increased capacity and commitment of the relevant institutions to effectively monitor the state of the critical ecosystem.

The specific indicators to measure the above and thus trigger for subsequent credits are that:

- (i) the percentage of the catchment area which is set aside or designated as buffer zones;
- (ii) the stability of water flows improved by X percent and maintained at Y percent higher than the baseline;
- (iii) species diversity and richness X percent higher than the baseline by the end of phases I and II; and
- (iv) the number of people who practice sustainable resource use are X percent higher than the baseline in phase I.

The above component would be implemented by MINITERE and MINAGRI through a GEF grant. The RSP would serve as a baseline for the GEF operation. The above activities and indicators would be finalized by MINITERE, who would work with MINAGRI to complete the preparation of the operation by the time RSP becomes effective. The exact indicator values will be specified at that stage.

4.8 **Promotion of Commercial and Export Agriculture.** The overall performance criteria under this component is the effectiveness of the financial and technical support that is provided in: (i) filling the gap created by the withdrawal of OCIR-THE and OCIR-CAFÉ; and (ii) encouraging the production of alternative export crops. The support would be demonstrated during Phase I and would continue to demonstrate during Phase II:

- (a) adequate financial and technical results by Commercial Enterprises and Technical Support Entities(CETSEs); and
- (b) capacity of export crop farmers to adopt improved cropping practices and achieve better output results.

The specific indicators to measure the above and thus the triggers for subsequent credits under this component are that:

- (i) crop incomes of farmers assisted by CETSEs are 20 percent and 50 percent higher than the baseline by the end of phases I and II, respectively.
- (ii) the unit cost per hectare of export crops among beneficiary farmers are 10 percent and 25 percent lower than the baseline by the end of phases I and II, respectively; and
- (iii) the total output of export crops in the project areas is 25 percent and 50 percent higher than the baseline by the end of phases I and II, respectively.

4.9 **Support to Agricultural Services Delivery Systems.** The overall performance criteria under this component is whether demand-responsive agricultural research and extension systems have been successfully established. To that effect, the Program would demonstrate by the end of Phase I and sustain throughout Phase II:

- (a) adequate capacities of lead agricultural research and extension services to meaningfully involve farmers and private operators in the generation and dissemination of farming and post-harvest technologies;
- (b) adequate capacity of farmer organizations and private sector operators to efficiently participate in the delivery of agricultural services; and
- (c) satisfaction of beneficiary farmers with the performance of FASDOs and PASDOs.

The following indicators would be used for verification and would constitute the triggers for subsequent credits under this component:

- (i) the number of FASDOs supported under the project reaches 1,000 and 3,000 at the end of phases I and II, respectively; and
- (ii) the number of PASDOs supported under the project reaches 80 and 60 at the end of phases I and II, respectively.

4.10 **Small-Scale Rural Infrastructure Development.** The overall performance criteria under this component is the effectiveness of the institutional and financial support that is provided in raising the quality of post-harvest and transport infrastructure and equipment among beneficiary communities. The performance criteria at the end of Phase I and throughout Phase II are, accordingly, the continued demonstration of:

- (a) adequate capacity of Local Administrations (LAs) to successfully plan and supervise the construction and maintenance of transport infrastructure; and
- (b) effective utilization of matching grant funds by farmer organizations to acquire Appropriate Means of Rural Transport (AMTs).

The corresponding indicators to be used as triggers for subsequent credits under the component are, therefore, the following:

- (i) the total number of constructed marketing facilities reaches 18 and 20 at the end of phases I and II, respectively; and
- (ii) Appropriate Means of Rural Transport (AMT) have been successfully introduced under phase I and disseminated under phase II.

4.11 **Program Monitoring and Evaluation.** The overall performance criteria under this component is the effectiveness of the activity monitoring and evaluation mechanisms. The transition to subsequent credits would be considered on the basis of:

- (a) the timeliness and quality of evaluation reports; and
- (b) the maintenance of a well documented M&E data base.

The associated triggers for subsequent credits under this component are the following:

- (i) adequate frequency of evaluation throughout phases I and II; and
- (ii) availability of up-to-date output and outcome indicators for all project activities at the end of phases I and II.

## Performance Triggers for Subsequent Loans

**Table 2: Performance Triggers for Phases II and III**

Assessment Criteria	Trigger Indicators	Means of Verification
<p><b>1. Rehabilitation of Farmed Marshland and Hill-side Areas</b></p> <p>Effectiveness in:</p> <p>1) Establishing ownership and achieving full participation in project implementation on the part of local administrations;</p> <p>2) Building trust between the latter and beneficiary groups around project activities; and</p> <p>3) Strengthening farmer capacities to efficiently exploit the rehabilitated areas.</p>	<p>i) The total area of rehabilitated farmed marshlands reaches 4,000 ha and 8,000 ha at the end of Phases I and II, respectively;</p> <p>ii) The total area of rehabilitated hillside areas reaches 2,000 ha and 5,000 ha at the end of Phases I and II, respectively; and</p> <p>iii) The average crop yields on farmed marshland/hillsides are 100% higher than the baseline at the end of Phase II.</p>	<p>a) Updated Baseline Rural Sector Survey at the end of Phases I and II</p> <p>b) Impact study at the end of Phases I and II</p> <p>c) Evaluation reports</p>
<p><b>2. Integrated Management of Critical Ecosystems</b></p> <p>1) Increased capacity of critical ecosystems to support production while enhancing other ecological and environmental benefits;</p> <p>2) Increased capacity and commitment of the relevant institutions and local communities to effectively monitor the state of the critical ecosystem.</p> <p><i>1/ This component is to be implemented under the GEF operation which is currently being finalized by MINITERE in collaboration with MINAGRI. The indicator values will be specified after completion of the preparation of the operation.</i></p>	<p>i) The percentage of rehabilitated wetlands which are designated as buffer zones;</p> <p>ii) The stability of water flows improved by x%<sup>1/</sup> and maintained at y% higher than the baseline;</p> <p>iii) Species diversity and richness x% higher than the baseline by the end of Phases I and II;</p> <p>iii) Number of people who practice sustainable resource use x% higher than the baseline in Phase I.</p>	<p>a) Updated baseline survey of critical ecosystems</p> <p>b) Impact studies at the end of Phase I</p> <p>c) Evaluation reports</p>

<p><b>3. Promotion of Commercial and Export Agriculture</b></p> <p>1) The financial and technical support effectively: (i) fills the gap created by the withdrawal of OCIR-THÉ and OCIR-CAFÉ; and (ii) encourages the production of alternative export crops.</p>	<p>i) Crop incomes of farmers assisted by CETSEs are 50% higher than the baseline by the end of Phase II;</p> <p>ii) The total output of export crops in the project areas is 50% higher than the baseline by the end of Phase II.</p>	<p>a) Updated Baseline Rural Sector Survey at the end of Phases I and II</p> <p>b) Impact study at the end of Phases I and II</p> <p>c) Evaluation reports</p>
<p><b>4. Support to Agricultural Services Delivery Systems</b></p> <p>1) Establishment of demand-responsive agricultural research and extension systems.</p>	<p>i) Number of Farmer Agricultural Services Delivery Organizations (FASDOs) reaches 1,500 and 1,000 at the end of Phases I and II, respectively; and</p> <p>ii) Number of PASDOs supported under the project reaches 80 and 60 at the end of Phases I and II, respectively.</p>	<p>a) Updated Baseline Rural Sector Survey at the end of Phases I and II</p> <p>b) Impact study at the end of Phases I and II</p> <p>c) Evaluation reports</p>
<p><b>5. Small-Scale Rural Infrastructure Development</b></p> <p>1) Effectiveness of institutional and financial support to raise the quality of post-harvest and transport infrastructure and equipment.</p>	<p>i) The total number of constructed marketing facilities reaches 18 and 20 in Phases I and II, respectively; and</p> <p>ii) Alternative Appropriate Means of Rural Transport (AMT) have been successfully pilot-tested during Phase I and disseminated during Phase II.</p>	<p>a) Updated Baseline Rural Sector Survey at the end of Phases I and II</p> <p>b) Impact study at the end of Phases I and II</p> <p>c) Evaluation reports</p>

<p><b>6. Promotion of Off-farm Productive Activities in Rural Areas</b></p> <p>1) Readiness of beneficiary CDCs to implement off-farm sector development strategies.</p>	<p>i) The number of people employed in off-farm activities is y% higher than the baseline at the end of Phase II;</p> <p>ii) The income generated through off-farm activities are y% higher than the baseline at the end of Phase II.</p>	<p>a) Updated Baseline Rural Sector Survey at the end of Phases I and II</p> <p>b) Impact study at the end of Phases I and II</p> <p>c) Evaluation reports</p>
<p><b>7. Program Monitoring and Evaluation</b></p> <p>1) Effectiveness of adopted monitoring and evaluation mechanisms.</p>	<p>i) Existence of a well documented, up-to-date, and operational database of output and outcome indicators;</p> <p>ii) Publication of all monitoring and evaluation reports as specified in the Project Implementation Manual (PIM).</p>	<p>a) Updated Baseline Rural Sector Survey at the end of Phases I and II</p> <p>b) Impact study at the end of Phases I and II</p> <p>c) Evaluation reports</p>

## C. Program and Project Description Summary

1. **Project components** (see Annex 2 for a detailed description and Annex 3 for a detailed cost breakdown):

1.1 *Rehabilitation of Farmed Marshland and Hill-side Areas.* The specific objective of this component would be to establish effective mechanisms to: (a) facilitate the adoption by beneficiary farmers of efficient and sustainable technologies and practices to profitably manage marshland and hill-side crops; and (b) encourage and develop the skills of private operators to intervene in land and water infrastructure construction and maintenance. Currently, about 50 percent of the 165,000 ha marshland in Rwanda are being farmed. Of these, only 5,000 ha have had any type of improved infrastructure. Figures from MINAGRI indicate that the infrastructure on 4,000 ha out of the 5,000 ha is in serious need of rehabilitation. The objective under this part of the program would be to rehabilitate and develop the infrastructure on 25 percent of the currently farmed marshland, about 20,000 ha, over the 14-year period. The component would include five sets of activities:

- financing of small-scale drainage and irrigation infrastructure on farmed marshlands;
- financing of R&D and infrastructure for soil and natural resources conservation on marshlands and hill-sides;
- advisory services on cropping and water management technologies;
- training of farmer groups and other target private sector operators in construction, management, and maintenance of land and water conservation infrastructure;
- institutional support to producer organizations and community groups; and
- soil fertility restoration measures.

1.2 *Integrated Management of Critical Ecosystems.* The Program would, under its various components, introduce better land husbandry, including appropriate land use, crop-livestock practices, improved integrated plant nutrient techniques and make required inputs more accessible to stakeholders. Since soil fertility problems and land resources degradation have been identified as major reasons for encroachment into the Protected Areas (PAs) and Forest Reserves (FRs), increased access to inputs and the introduction of improved soil and water management measures are expected to result in reduced encroachment. The project will also promote off-farm productive activities in rural areas, which could alleviate pressure on the land, particularly in critical habitats and areas adjacent to the PAs and FRs. In addition to the above, the specific objective that is targeted under the current component is to promote the adoption of improved soil, water and fertility conservation techniques by beneficiary farmers and strengthen the capacities of local communities to effectively manage critical ecosystems. The component would include the following set of activities:

- development of an enabling environment for sustainable resource use: policy framework, regulations, institutional support;
- development and implementation of community-based integrated management plans for critical ecosystems (wetlands, drylands, and mountain areas);
- creation of an Environmental Information System (EIS);
- capacity building and institutional strengthening to support a decentralized integrated management of natural resources.

The component would be further developed by MINITERE in collaboration with MINAGRI into a parallel GEF operation that would be supported by the RSP Program as its baseline operation. The preparation of

the GEF activity would be completed by the time RSP becomes effective.

1.3 *Promotion of Commercial and Export Agriculture.* This component would seek to empower traditional export crop farmers to take over the management of all commercial and technical activities that are currently the responsibility of the two parastatals in the tea and coffee sectors, respectively, OCIR-Thé and OCIR-Café. The private operators who would eventually acquire the currently state-owned, but soon to be privatized, factories in the two sub-sectors, are not expected to render the same services without compromising the commercial independence of private farmers and, hence, future profitability of tea and coffee production. In addition to tea and coffee, there are ongoing efforts by private operators to develop new export crops, primarily in the horticulture sector. The efforts to promote commercialization of agriculture would also target crops that are traded domestically and in regional markets. Under the current component, support would be provided to farmers that are willing to invest in the production of these new crops. The support would consist primarily of technical support to farmers on cropping and post-harvest technologies and facilitation of access to resources for investment in processing and commercial activities. The planned activities under RSP would focus on:

- provision of advisory services on production and post-harvest technologies to farmers and other private sector operators;
- financing of post-harvest R&D and infrastructure;
- financing of technical assistance and grants to strengthen the capacities of farmer organizations; and
- facilitation of access to financing of productive technologies; and
- financing of technical assistance and capital investment to establish farmer-owned Commercial Enterprises and Technical Support Entities (CETSE).

1.4 *Support to Agricultural Services Delivery Systems.* The capacities of current research and extension institutions to generate and disseminate agricultural technologies are quite weak and need to be strengthened substantially. The capacity strengthening would be carried out while taking into consideration: (a) the government's option for adaptive research; (b) the need to decentralize the system of services delivery; and (c) the necessity for considerably greater involvement of beneficiaries in the design and dissemination of farming technologies. Technology generation through adaptive research requires a minimum level of qualified researchers. There is, accordingly, a need for a critical mass of adequately trained scientists, covering a sufficiently broad range of disciplines and capable of constituting a sound interface with International Agricultural Research Centers and Sub-Regional and Regional networks. This would call for a restructuring of the personnel of the agricultural services institutions with a "rightsizing" objective. A rapid external evaluation of ISAR has been carried out by appraisal and will be expanded to other lead R&D institutions and updated regularly during project implementation. The rapid evaluations would determine the necessary training and re-deployment of existing staff or the recruitment of new staff to enable the institutions to adequately meet their responsibilities.

Against this background, the program, under the current component, would seek to: (i) restructure and build the capacities of the lead institutions to acquire internally or externally and adapt relevant technologies; (ii) strengthen the capacities within the current extension services system to integrate farmer organizations and private sector operators in the design and implementation of technology dissemination policies; (iii) empower farmer associations and reinforce the skills of private sector operators involved in rural development in order to enable both groups to effectively participate in the delivery of research and extension services. To achieve these objectives, the following activities would be carried out under the current component:

- financial and technical assistance to strengthen the capacities of private and restructured lead public R&D institutions to borrow, adapt, and disseminate improved cropping, conservation, and post-harvest technologies;
- financial support and training of farmer organizations on techniques of participatory research and extension services delivery; and
- technical assistance to private operators willing to invest in services delivery activities.

1.5 *Small-scale Rural Infrastructure Development.* Reducing the unit cost of moving goods across space and over time is as important to the objectives of commercializing and increasing the competitiveness of Rwanda's agriculture as is the reduction of production costs. Although they do not constitute yet the most serious obstacle to agricultural output expansion and intensification in Rwanda, it would not be long before the quality of local transport systems would become a major constraint to efforts of accelerating growth in the agricultural sector. Hence, the first objective of the current phase would be to upgrade and expand small-scale transport infrastructure in the rural areas. In addition to poor infrastructure, the rarity of adequate transport equipment would also significantly limit the potential to stimulate agricultural production as well as other economic activities in rural areas. Finally, moving crops over time can be as important as transporting them across space. Current estimates indicate that as much as 25 percent to 30 percent of harvested quantities are lost due to inadequate post-harvest technologies. Therefore, the component's second objective would be to facilitate the access to adapted post-harvest infrastructure and Appropriate Means of Rural Transport (AMT). Given its local specificity, the necessary development and improvement of transport infrastructure would have to be planned and implemented at the local level. Furthermore, it would be important to ensure that the AMTs and post-harvest infrastructure that are introduced can be serviced locally in a technically satisfactory manner. Consequently, the third objective would be to create the capacities among local communities and in the private sector to construct and/or maintain the transport equipment and infrastructure in question. Four activities are planned under this component:

- institutional and financial assistance to support the local administrations to plan, implement and/or supervise the conservation and transport infrastructure development and maintenance activities;
- technical assistance to private operators willing to invest in conservation, post-harvest, and transport infrastructure construction and maintenance activities;
- financial assistance to farmer groups for the acquisition of post-harvest infrastructure and AMTs; and
- technical assistance to private operators for the construction and/or maintenance of AMTs.

1.6 *Promotion of Off-farm Productive Activities in Rural Areas.* The objectives behind the promotion of off-farm productive activities are threefold: (a) the creation of additional employment and incomes and thus a direct contribution to the poverty reduction objective; (b) the expansion of the effective demand for food and other agricultural goods and, hence, the stimulation of production; and (c) greater responsiveness of the supply of locally produced off-farm goods. The latter objective is important in order to avoid a situation in which the increased demand for these goods, that would result from higher agricultural productivity and incomes, would be translated into higher prices, which, in turn, not only would reduce the real value of added agricultural incomes but also ultimately lead to higher agricultural wages. Both would have negative implications in terms of slowing down the pace of intensification and commercialization of agriculture. The activities through which these objectives would be realized are:

- preparation and piloting of local off-farm development strategies;
- financing of R&D for selected off-farm production activities;

- training in enterprise development and management; and
- provision of seed-funding and facilitation of access to rural investment credit.

1.7 *Program Support and Coordination.* The component's objective would be to achieve effective implementation and coordination of all program activities. Given the local nature of many of its proposed interventions, the various phases of the program would be implemented in a decentralized way in order to ensure relevance and sustainability. The support to be provided under this component would hence include the necessary technical and institutional support to beneficiary groups and local communities. Close monitoring and regular evaluation of program activities are of critical importance for any project, but more so for one that is based on decentralized implementation. Four sets of activities are planned this component:

- establish a Project Support and Coordination Unit, including a Monitoring and Evaluation Division;
- design and implement a mechanism to effectively coordinate the program activities
- design and implement a mechanism to effectively monitor and evaluate the program activities;
- carry out a Baseline Rural Sector Survey (BSSR) in the first year and to be updated by the end of year 4 of Phase One;
- carry out impact studies at local and beneficiary levels.

#### 1.8 Indicative Project Costs (Phase I)

Component	Sector	Indicative Costs (US\$M)	% of Total	Bank financing (US\$M)	% Bank financing	GEF financing (US\$M)	% GEF financing
1. Rehabilitation and Development of Marshlands and Hill-sides	Irrigation & Drainage	16.19	29.0	14.62	30.5	0.00	0.0
2. Integrated Management of Critical Ecosystems	Other Environment	5.00	8.9	0.00	0.0	5.00	100.0
3. Promotion of Agricultural Exports	Agro-Industry & Marketing	10.68	19.1	10.53	21.9	0.00	0.0
4. Support to Agricultural Services Delivery Systems	Agricultural Extension	9.66	17.3	9.59	20.0	0.00	0.0
5. Small-Scale Rural Infrastructure	Rural Roads	10.10	18.1	9.81	20.4	0.00	0.0
6. Promotion of off-farm productive activities in rural areas	Small Scale Enterprise	0.34	0.6	0.34	0.7	0.00	0.0
7. Program Support and Coordination Unit	Unidentified	3.91	7.0	3.11	6.5	0.00	0.0
Global Components		0.00	0.0	0.0	0.0	0.00	
<b>Total Project Costs</b>		<b>55.88</b>	<b>100.0</b>	<b>48.00</b>	<b>100.0</b>	<b>5.00</b>	<b>100.0</b>
<b>Total Financing Required</b>		<b>55.88</b>	<b>100.0</b>	<b>48.00</b>	<b>0.0</b>	<b>5.00</b>	<b>100.0</b>

## **2. Key policy and institutional reforms supported by the project:**

2.1 There is only one major policy or institutional reform issue that is of critical importance to the success of the proposed program. It relates to the creation of a transparent legal framework for access to and utilization of farmland, in general, and marshlands, in particular. A draft land law has been under preparation for sometime. Its finalization and adoption to provide the legal protection and incentives for long-term investment in marshland farming is in progress. Existing land legislation includes a leasehold policy but the length of individual leases can vary with respect to farmed land. Consequently, the evidence of leases to beneficiaries for periods sufficiently long enough to allow them to efficiently and sustainably carry out subprojects activities will be a criteria for subproject eligibility under the component on rehabilitation of farmed marshlands and hill-side areas. Furthermore, the adoption of the land law under revision to include provisions that would ensure farmer access to and use of rehabilitated farmland through transferable leases of at least 20 , before the end of the first Phase (2005) will be a trigger condition for Phase II (2006-2011) of the Program.

## **3. Benefits and target population:**

3.1 The primary goal of the program is to raise productivity and accelerate growth in the agricultural sector. In the long run, faster growth in agriculture would yield significant multiplier effects which, cumulatively, would not only reduce poverty in the rural areas but would also have considerable positive ramifications at the national and macroeconomic levels. In the short- to medium-run, the main target populations and institutions would derive the following benefits:

- *Farmers* in the project communes would benefit from improved agricultural support services, which would give them greater access to better cropping and post-harvest practices. The resulting higher productivity and incomes would provide the basis for further investments in productivity enhancing technologies, thereby fostering the process of growth, the accumulation of wealth, and the reduction of poverty among rural population, which constitute the largest group among the country's poor.
- *Private Entrepreneurs* would benefit from the technical and financial support to better manage and expand their activities. They would also benefit from higher productivity and incomes in the agricultural sector, which would raise demand for the goods that they produce. This group would, therefore, derive benefits both from the supply and the demand sides.
- *Consumers*, which include the targeted farmers and private entrepreneurs, would benefit from the increases in farm productivity, which would reduce the level or slow down the pace of growth of food prices. Given the share of food costs in household expenditures, both in rural and urban areas, higher farm productivity growth and the associated price effects would have considerable income effects for the majority of the Rwandese population.
- *Local Communities* would benefit from the improvement of local infrastructure. They would also benefit from the diversification of the local economy and the creation of new employment opportunities.
- *Targeted Institutions*, which include the lead research and extension institutions, private R&D institutions, central, prefectural and district-level administrations would benefit directly from the technical support and other capacity-building activities that would be carried out under the

project.

#### **4. Institutional and implementation arrangements:**

##### **Implementation Period**

4.1 The Program would be implemented as a 14-year APL, including an initial phase of expectedly four years and two subsequent phases of 5 years each. The ultimate length of individual phases would depend on the progress made towards achieving the respective outcomes and meeting the stipulated triggers. Subsequent phases would be designed in line with the program goals, taking into consideration, as necessary, adjustments that would be dictated by the outcomes from the preceding phase(s) as documented by the evaluation that is carried out at the end of each phase.

##### **Implementation and Coordination Principles**

4.2 Two main options made by the Rwandese Government would guide the implementation of the proposed program:

- (a) *Decentralization.* With the Presidential Decree 37/01 in 1998 and the subsequent Ministerial Directive 02/0704/1 in 1999, the Government of Rwanda has launched a process to create the legal framework for political and administrative decentralization. A policy paper is currently under completion which, once adopted by Government, would provide the guidelines for the implementation of the decentralization policy. The Ministry of Local Administration has been created in 1998 and significant measures have been taken to restructure the local administrations and initiate a process of consultations with local communities.
- (b) *Adaptative Research and Participatory Extension Systems.* Given the limitation of resources and the need to rapidly develop improved cropping technologies, Rwanda has opted for an adaptative approach to technology generation. Instead of developing technologies from scratch, the research system would seek to effectively exploit the stock of available know how in the regional and international research systems. Wherever possible, it will acquire and adapt existing technologies to solve the technical constraints facing Rwandese farmers. Furthermore, in order to ensure the adequacy and speed up the diffusion of new technologies, the research and extension systems would be integrated and opened to effective participation from beneficiary farmers.

4.3 Among others, the current decentralization policy paper foresees the transfer of policy making competence to local governments in the following areas: (i) agriculture, veterinary, forestry, and all other extension services; (ii) local trade; (iii) small-scale industries; (iv) land title, registration, and resettlement; (v) tourism and environmental protection; (vi) cooperatives and associations; and (vii) local roads. Furthermore, the Community Reintegration and Development Project (CRDP) has been piloting a decentralized approach to designing and implementing development activities. The project is due to close less than a year after the expected effectiveness of the proposed Program. Its mid-term review is to take place in March 2001. The project has been implementing activities that constitute a subset of the activities that are proposed under the planned Program. Moreover, it has been quite successfully developing participatory implementation arrangements. It is, therefore, logical to: (i) seize the opportunity provided by the proposed Program to complement CRDP's activities in the communes where it is already active; (ii) expand its activities to new communes, while (iii) using the same implementation arrangements that have

been already successfully piloted. These arrangements would ensure the following implementation principles:

- (a) definition, choice, management, and monitoring of public infrastructure activities and ecosystem management plans by local administrations;
- (b) full participation of beneficiary farmers in the planning, implementation, and evaluation of: (i) research and extension services; (ii) marshland and hill-side rehabilitation activities; and (iii) the management of the physical infrastructure associated thereto;
- (c) execution of public works by local private sector contractors, artisans, and beneficiary groups;
- (d) transparency and accountability at all levels; and
- (e) gradual mainstreaming of support and coordination activities at the level of the respective implementing ministries and government agencies.

### **Program Coordination and Management**

4.4 The implementation arrangements would follow the structure of decentralization and reflect the option for participatory research and extension systems. Local administrations at the prefecture and district levels would collaborate closely with local beneficiary groups to plan and implement farmed marshland and hill-side rehabilitation as well as rural infrastructure development and improvement activities. Together they would prepare the respective sub-projects and apply for funding. Similarly, activities to support the provision of agricultural services would be implemented whenever possible, and called for, in a tri-partite format that would bring together the lead institution (research and extension), beneficiary farmer groups, and private R&D institutions, including research institutions and SLOs that intervene in the area of rural development. In both cases, sub-projects would be designed and implemented such as to ensure transparency, accountability, replicability, and sustainability.

#### Executing Agencies

4.5 **The Program Advisory Committee.** The oversight and orientation of Program activities would be the responsibility of a Program Advisory Committee (PAC) under the presidency of the Minister of Agriculture, Animal Resources, and Forestry. In addition to MINAGRI, its members would include at least representatives from the Ministries of: (i) Finance and Planning; (ii) Local Administration and Social Affairs; (iii) Land, Human Resettlement, and Environment; (iv) Public Works, Transportation, and Communications; and (v) Commerce and Industry. Farmer organizations would also be represented in the PAC, as would the private agribusiness sector. The Project Coordinator would serve as PAC's Secretary

4.6 **The Program Support and Coordination Unit.** A Program Support and Coordination Unit (PSCU), which would be established within MINAGRI, would serve as the technical arm of the Program Steering Committee. The PSCU, led by the Project Coordinator, would be responsible for overall management and coordination of Program activities, including the facilitation of support to implementing local agencies and beneficiary groups. In particular, it would be responsible for: (i) the coordination of the preparation and implementation of the different project components; (ii) the consolidation of annual work programs and budgets; (iii) the establishment of a decentralized monitoring and evaluation system, including the creation of a Monitoring and Evaluation Division (MED) to implement M&E activities in

collaboration with local administrations and beneficiary groups; and (iv) financial and administrative management of project activities. The PSCU staff would be recruited in accordance with the Bank's guidelines for the recruitment of consultants. In addition to the Project Coordinator (PC) and the usual support staff, the PSCU team would include a Chief Financial Officer (CFO), a Project Accountant (PA), and a Procurement Officer (PO). The MED staff would include a Monitoring and Evaluation Coordinator (MEC), an Information Technology Specialist/Statistician (ITS). PSCU will also include a technical division comprising an agronomist/natural resources specialist, agricultural economist, and a rural engineer.

4.7 Given the technical characteristics of some of the project activities and the need to ensure future mainstreaming of support and coordination functions into the activities of ministries and other implementing agencies, PSCU would collaborate closely with relevant technical departments outside of MINAGRI. The format of collaboration and coordination is presented in the diagram below. The terms of reference for individual participating agencies/ministerial departments will be described in the Project Implementation Manual (PIM). It is proposed that PSCU coordinate the implementation of Program activities with the relevant technical directorates of other ministries and agencies as follows:

*Component 1 -*

Rehabilitation of Farmed Marshland and Hill-side Areas - with Directorate of Rural Engineering and Directorate of Agriculture of MINAGRI;

*Component 2 -*

Integrated Management of Critical Ecosystems - with Ministry of Land, Human Resettlement, and Environment (MINITERE);

*Component 3 -*

Promotion of Commercial and Export Agriculture - with Directorate of Agriculture, Directorate of Livestock of MINAGRI and Directorate of Commerce and Directorate of Industry (MIINECOM);

*Component 4 -*

Support to Agricultural Services Delivery Systems - with ISAR and the Directorate of Marketing and Extension of MINAGRI and ISAR;

*Component 5 -*

Small-scale Infrastructure Development - with Directorate of Rural Engineering of MINAGRI and with local administrations;

*Component 6 -*

Promotion of Off-farm Productive Activities in Rural Areas - with Directorate of Agriculture, Directorate of Livestock of MINAGRI, local administrations and Directorate of Commerce and Directorate of Industry (MINECOM);

*Component 7 -*

Program Monitoring and Evaluation - with Directorate of Planning and Agricultural Statistics of MINAGRI, and with CEPEX (MINECOFIN).

4.8 **Local Administrations.** Local administrations would have planning and oversight responsibilities

at the local level, primarily for the implementation of public infrastructure subprojects under the small-scale rural infrastructure component. Participating local administrations would designate RSP coordinators who would serve as liaison between the administrations, PSCU, beneficiaries, the private sector, and other implementing agencies. While a limited number of CDCs are already operational and are receiving support from CRDP or other projects in several communes, there are many CDCs that require support to become effective partners. PSCU would work closely with the Ministry of Local Administration and Social Affairs (MINALOC) to provide the necessary support to CDCs. The expected responsibilities of CDCs under individual project components are listed below. Detailed TORs will be included in the PIM. CDCs would work together with beneficiary groups, PSCU, and other implementing agencies to:

*Component 1:*

participate in the: (i) planning of marshland and hillside rehabilitation activities; (ii) procurement of rehabilitation work; and (iii) development of strategies for long-term utilization and management of rehabilitated areas;

*Component 2:*

(i) prepare management and zoning plans to provide for proper land use in both the hillsides and marshlands; (ii) prepare, adopt, disseminate, and enforce guidelines for sound environmental management; and (iii) develop and enforce environmental standards and an environmental code of conduct to be followed by the contractors and sub contractors implementing the sub-projects;

*Component 3:*

plan, implement, and supervise any public infrastructure work to promote commercial and export agriculture;

*Component 4:*

carry necessary activities to support the operation of agricultural services delivery systems and facilitate the collaboration between lead public research and extension institutions, beneficiary farmers, and the private sector, including SLOs;

*Component 5:*

(i) participate in the planning, implementation, and supervision of marketing and transport infrastructure development and maintenance activities; and (ii) sub-contract with private sector operators to carry out public work related to marketing and transport infrastructure;

*Component 6:*

(i) prepare, in collaboration with other relevant local administrations, local off-farm development strategies; and (ii) pilot test and scale up off-farm sector promotion activities;

*Component 7:*

(i) set up a local monitoring and evaluation system that is linked to the PSCU's M&E system, (ii) prepare regular evaluation report; and (iii) develop a communication and information system to promote transparency and participation in the implementation of project activities.

## Implementation Vehicles

4.9 The proposed decentralized format of implementation requires that appropriate instruments be found to channel financial resources to implementing local agencies and beneficiaries. For that purpose, three types of funding facilities would be set up to provide competitive funding for activities implemented directly by local administrations and beneficiary groups, including farmers and other private sector operators. The clusters of activities under individual components that can be funded through the three Facilities are described in Table 1 of Annex 2. The procedures and eligibility criteria for each of these Facilities are detailed in the PIM. The three facilities are: Local Infrastructure Facility (LIF); Rural Investment Facility (RIF); and Rural Technology Facility (RTF).

**Local Infrastructure Facility (LIF).** The LIF would be the mechanism to transfer financial resources to local administrations and other local beneficiaries to finance: (i) soil and water resources conservation infrastructure on marshlands and hill-sides; (ii) transport infrastructure development and maintenance activities; and (iii) construction of post-harvest and other marketing and export cost-reducing infrastructure.

**Rural Investment Facility (RIF).** The RIF would provide financial incentives through investment cost subsidy to qualified private sector operators, including farmer groups, willing to invest in activities with substantial economic or environmental externalities. For instance, investment by private entrepreneurs in value-adding activities in the processing and conservation sectors would generate collective benefits in terms of alleviating the demand constraint facing the agricultural sector and providing incentives for the intensification of crop and livestock production activities, a major objective of the government's rural development strategy. The RIF would finance sub-projects in the following activity areas: (i) the operation of farmer-owned Commercial Enterprises and Technical Support Entities (CETSE); (ii) processing, conservation, and trading of crop, livestock, and forestry products; (iii) transport infrastructure construction and maintenance activities; (iv) acquisition of appropriate (adapted) means of rural transport (AMT) by farmers to be tested under pilot activities; (v) investment by private operators in the construction and/or maintenance of AMTs and transport infrastructure; (vi) investment by private operators in agricultural services delivery activities, and (vii) selected pilot off-farm productive activities.

**Rural Technology Facility (RTF).** The RTF would be the main vehicle to establish and support participatory agricultural services delivery systems. It would provide matching grants to: (a) building the institutional, commercial, and technical capacities of farmer groups through the establishment of farmer-owned Commercial Enterprises and Technical Support Entities (CETSE); and (b) strengthen the capacities of agricultural research and extension systems in order to generate and extend improved technologies to farmers and enhance the delivery of services. Given the very weak capacities in the research systems, the first phase would include the: (i) rebuilding of ISAR's research and analytical capacities; (ii) training of scientists; and (iii) building the capacities of lead research and extension services to involve farmers and private operators in the generation and dissemination of cropping, animal husbandry, and post-harvest and dairy technologies, in addition to: (iv) institutional support and grants to farmer groups to procure and participate in research and extension services; (v) matching grants to private operators to invest in services delivery activities; and (vi) R&D on selected pilot off-farm productive activities.

## **Accounting, Financial Reporting, and Auditing Arrangements**

4.10 PSCU would be responsible for financial management of project resources, including establishment of an adequate accounting system, internal control procedures, preparation and submission of periodic financial statements and ensuring that the project's annual financial statements are audited in conformity with IDA requirements. PSCU would also monitor all disbursements to ensure that all expenditures are eligible and incurred for the purposes intended under the project, including those through LIF, RIF, and RTF. PSCU will also set up appropriate procedures for flow of funds to participating CDCs and for CDCs to account for project funds, including submission of quarterly and annual reports on the progress of implementation of their respective subprojects.

4.11 The PSCU staff would include a Chief Financial Officer who will have the overall responsibility for the financial functions indicated above, and an Assistant Accountant. While the establishment of a Financial Management System, acceptable to IDA, will be a condition of effectiveness, the recruitment of the CFO will be funded under PPF and it is expected that he/she will join the PSCU by the time of project Negotiations. Early recruitment of the CFO is emphasized to allow the CFO time to familiarize him/herself with project environment and operations intended under various components as the team goes through the project planning process. It should also give the CFO time to: (i) familiarize him/herself with Bank's current disbursement procedures as well as Bank's new reporting procedures under FINMI (ex-LACI); (ii) initiate the process of establishing financial, accounting and internal control procedures for the Program, which should be in place by the time of project effectiveness; (iii) write up a simple manual to describe the flow of project funds, minimum internal control procedures and, in consultation with the Project Coordinator, establish thresholds and approvals required for various levels of project expenditures; (iv) survey accounting softwares available (including by visits to other IDA-financed projects in Rwanda) and identify one that would be most appropriate for the Program; and (v) assess if consultants would be necessary for any of the above tasks and, if so, make specific proposals for funding such assistance under PPF. It is envisaged that the CFO will remain in close contact with IDA and to ensure that all arrangements for accounting and financial management made by the time of project effectiveness are acceptable to IDA and conform to OP/BP 10.02.

4.12 Under the overall responsibility of the CFO, the project will be required to submit quarterly Project Monitoring Reports (PMRs) as indicated in the Bank's Project Financial Management Manual of February 1999. However, it is almost certain that the project (and the CFO, in particular) will need very close guidance in this task and it is unlikely that the project will be able to produce immediately all the 12 reports required under the new FINMI (ex-LACI) procedures. Emphasis in the initial months will hence be on the preparation of the two key financial reports (Sources and Uses of Funds and Uses of Funds by Project Activity). Depending upon the competence and abilities of the CFO and other staff, the project should be able to generate the complete PMRs within 18 months after project effectiveness.

4.13 The annual financial statement of the project, including expenditures of all project components, will be audited by an independent external firm of professional auditors and under terms of reference acceptable to IDA. In addition to the opinion on project financial statements, the auditors will be required to provide separate opinions on the SOEs and the management and utilization of the Special Accounts and the Decentralized Advance Accounts at provincial levels. In line with general audit practice, the auditors will also issue a management report with practical recommendations for any improvements that may appear necessary in the accounting and project internal control system.

## **Monitoring, Evaluation, and Reporting**

4.14 The proposed APL approach and the decentralized implementation of program activities, both would require a strong Monitoring and Evaluation (M&E) Component. It is proposed to establish within PSCU a Monitoring and Evaluation Division (MED), a sub-unit to monitor activity outcomes and evaluate project impact. The M&E tasks of the sub-unit would also include training of and support to other implementing agencies at the central as well as local levels to establish and implement their own internal M&E systems. The M&E modalities at the different levels would be defined in a Program Monitoring Guide (PMG) and an Impact Evaluation Guide (IEG) that would be prepared before project effectiveness. As part of the impact evaluation activities, a baseline rural sector survey (BRSS) will be carried out at the start of project implementation to provide a basis against which the various program indicators would be measured. The BRSS would include three separate sets of structured surveys on: (i) farm households, (ii) off-farm sectors; and (iii) beneficiary communes. These surveys would be implemented under PSCU supervision and in collaboration with MINAGRI services.

4.15 The PSCU's MED would implement a systematic and detailed monitoring and reporting system focusing on both the outputs and outcomes of the project. The system should allow an effective evaluation of: (a) the effectiveness of the project's delivery mechanisms and procedures; and (b) the impact of project activities on the basis of the stated objectives, the baseline data base, and the input, output, and impact indicators that are identified in the Project Design Summary (Annex 1) as well as the performance triggers. The key tasks under the monitoring arrangements would include, besides the regular monitoring of project activities: (i) updates in year four of the project of the baseline surveys of the farm household and off-farm sectors, and of the beneficiary communes; (ii) analysis of the survey data through qualified and independent research entities (universities, research centers, consulting firms); and (iii) collection of additional information as necessary to document the progress status of project activities. The progress towards project outcomes would be evaluated during its execution and at project completion. A project mid-term review would be carried out by Government to determine, based on the results of M&E as described above, the extent to which the project is performing vis-à-vis its development objectives. At the end of year four, an impact study would be carried out to assess whether the trigger indicators have been met and the program activities be extended into a second phase.

## D. Project Rationale

### 1. Project alternatives considered and reasons for rejection:

1.1 Two alternative approaches to design and implement the proposed program have been considered:

(a) The first alternative would have consisted in a series of smaller and separate sub-sectoral operations, in parallel or in series. These would be smaller in size and more manageable. On the other hand, the interrelated nature of the constraints to intensification, commercialization, and diversification requires an approach that exploits to the maximum the reinforcing complementarity of the activities to be undertaken in the various sub-sectors. The option of separate operations would not allow for a full exploitation of the synergies between these operations. The overall program would, however, not only cost more, but the overall achieved impact per dollar spent on the program would be much less. Under the adopted approach, constraints related to technology, infrastructure, and services delivery are addressed in parallel, exploiting the existing synergies and reinforcing the achieved outcomes from the respective sets of activities.

(b) The second alternative would have consisted in setting up a centrally implemented program which would: (i) support central government services to carry out sets of standardized land and transport infrastructure improvement sub-projects; and (ii) rebuild the current national research and extension systems. Such an approach would have the advantage of faster implementation, easier monitoring, and simpler financial control. However, it would render program activities less responsive to the real needs of beneficiaries, thereby reducing their ultimate impact and jeopardizing their sustainability. By opting for a decentralized format, coupled with a strong coordination and monitoring component, the proposed program would ensure ownership and thus set the conditions for efficient implementation through beneficiary groups and institutions as well as the sustainability of project activities beyond the life of the program.

### 2. Major related projects financed by the Bank and/or other development agencies (completed, ongoing and planned).

Sector Issue	Project	Latest Supervision (PSR) Ratings (Bank-financed projects only)	
		Implementation Progress (IP)	Development Objective (DO)
<b>Bank-financed</b> Support to OCIR café and acceleration of small-holder planting programs in the project area, in addition to strengthening extension services and improving internal and external marketing arrangements.	(1) Cinchona Project (Cr. 656-RW)	S	U
Development of areas opened up by tsetse eradication.	(2) Bugesera East, Gisaka/Migongo Mixed Farming and Rural Development (Cr. 668-RW)	U	U

Build social infrastructure and enhance rural institutions.	(3) Mutara Agricultural and Livestock Development – Phase II (Cr. 937-RW)	S	U
Increased supply of fuel-wood, conservation of national forests, establishment of a long-term program for forestry development	(4) Integrated Forestry and Livestock Development (Cr. 1039-RW)	S	S
Support to OCIR CAFÉ and to food-crop and coffee extension services	(5) Lake Kivu Coffee Improvement and Foodcrop (Cr. 1126-RW)	U	S
Support to rural development in the project area through improved services and infrastructure	(6) Bugesera and Gisaka Migongo – Phase II (Cr. 1283-RW)	U	S
Efficiency of operation and effectiveness of institutional and financial arrangement in the rural water supply sub-sector	(7) First Water Supply (Cr. 1345-RW)	S	S
Long-term development program for agricultural research system	(8) Agricultural Research (Cr. 1546-RW)	U	U
Test of low cost agricultural services delivery models in the Gitarama prefecture and support to planning, monitoring, and evaluation capacity of the Ministry of Agriculture	(9) Gitarama Agricultural Production and MINAGRI Institutional Development (Cr. 1669-RW)	S	U
Management of the environmental and economic effects of the destruction of natural forests	(10) Second Integrated Forestry (Cr. 1811-RW)	U	U
Quality of water operations in rural areas and establishment of a water rehabilitation and maintenance program	(11) Second Water Supply (Cr. 1783-RW)	U	U
Achieving higher agricultural productivity and farm output.	(12) Agricultural Services (Cr. 2026-RW)	HU	HU
<b>Other development agencies</b>			

IP/DO Ratings: HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)

### **3. Lessons learned and reflected in the project design:**

3.1 The evaluation of the following IDA projects in Rwanda has produced valuable lessons that have been taken into consideration in the design of the proposed program:

- One key lesson from the Second Integrated Forestry Project (CR. 1811-RW) is that full recognition needs to be given to the opportunities for beneficiaries and the private sector to participate in the design and implementation of income generating activities. In the case of the above project, the lack of participation has reduced the effective benefit to rural population from the project and subsequently led to the destruction of forest resources it sought to protect. The design of the proposed program has, in contrast, taken into account, very early in the process, stakeholders' views on project objectives and how they are to be achieved. Representatives of local communes were fully involved in the identification of issues concerning them and the environment in which they live, thus strengthening local ownership and reducing risk of project failure.
- Another important lesson that is derived from the Second Water Supply Project (CR. 1783-RW) is that operations in post-conflict situations need to be kept simple and that special attention should be given to institutional and policy reforms. The relatively complex design of the project, which involved a multiplicity of donors, encouraged burden sharing, resulting in a broad-based multi-donor effort. However, tangible effects were not experienced by final beneficiaries because of difficulties to coordinate donor funding and intervention.
- A series of other valuable lessons can be drawn from the Lake Kivu Coffee Improvement and Foodcrop Project (Cr. 1126-RW), the Agricultural Research Project (Cr. 1546-RW), and Gitarama Agricultural Production and MINAGRI Institutional Development Project (Cr. 1669-RW). Most of these lessons are relevant to the program component on agricultural services delivery systems. They include the importance of: (i) clearly defining the interface between the research and extension services systems prior to project start-up and carrying out evaluations of the capacity of research organizations during preparation; (ii) ensuring demand-responsiveness of extension services and thereby adoption of extended technologies; (iii) maintaining an adequate level of research activities through support to recurrent funding in order to strengthen research services; (iv) adequately planning research and training activities, linked to a human resources development plan and a long-term development strategy of the research system, keeping in mind that large increases in research and support staff do not result in increases in research efficiency or productivity; (v) taking full advantage of the technologies generated by regional and international research organizations and concentrating on testing and adapting them to local conditions; and (vi) solving the problem of market outlets prior to making decisions on the generation and extension of improved production techniques.
- In general, projects in Rwanda and elsewhere underscore the need to pay greater attention to capacity building, particularly among lead public institutions. In Rwanda, the role of government in the promotion of rural development initiatives, in particular the provision of public goods such as agricultural services and rural infrastructure, remain essential. Furthermore, because of the local characteristic of such goods, the successful implementation of any project activities in these areas would require strong institutional support to beneficiary groups, the private sector, and local administrations.

- A final set of important lessons is drawn from two ongoing pilot projects: the Community Reintegration and Development Project (CRDP) and the Agricultural and Rural Market Development Project (ARMDP). The emerging evidence from CRDP activities indicates that local communities, when provided with the necessary support, can rapidly develop the capacities to effectively design and implement community-based subprojects. In particular, the project provides valuable lessons with respect to community-based planning and management of local infrastructure. Moreover, participating CDCs have proven that local administrations can acquire the necessary capacity to handle their fiduciary responsibilities and properly follow procurement procedures. The mechanisms that have been put in place and have worked under CRDP would be used under the present program.
- There are two main lessons from the ARMDP project. The first is with respect to the promotion of private-sector based systems of advisory services for small-holder farmers, as complement to existing public extension services. The project uses sub-contracting to exploit the capacities of specialized local organizations (SLOs) that are currently active in the areas of rural development and natural resources management and provide technical and institutional support to small-holder farmers. That format will be followed in promoting demand-driven agricultural services systems, which would ensure effective collaboration between public R&D institutions, private operators, and farmer organizations in generating and extending farming technologies. The other lesson relates to the project's effort to encourage commercial banks and private operators to invest in a key sector of the agricultural economy: the importation and distribution of modern inputs. The project has been able to attract new entrepreneurs into the sector and to create the conditions for local banks to provide financing for these activities. Its formula would be expanded to encourage banks and private entrepreneurs to invest in a broader range of agribusiness activities.

#### **4. Indications of borrower and recipient commitment and ownership:**

4.1 The Borrower has at this stage demonstrated considerable ownership. It has initiated project preparation by commissioning several studies through local consultants using resources provided from a PHRD grant. In addition, it has provided budgetary resources to hire several international consultants to help the project preparation team at MINAGRI to put together proposals for consideration for the World Bank team. Furthermore, it has organized an identification workshop, regrouping all potential beneficiary groups, in which the Minister of Agricultural has personally participated very actively. The Bank and MINAGRI preparation teams worked closely with the unit at the Ministry of Finance that is in charge of coordinating the preparation and implementation of projects (CEPEX). Representatives from CEPEX have joined the identification, pre-appraisal, and appraisal missions and have attended the identification workshop. This is not the first time that the Government has shown real ownership with respect to Bank programs. For instance, it has voluntarily tripled the Government contribution that was requested up-front during the preparation of the ongoing project on Agricultural and Rural Market Development, hired the project team, acquired the financial management software and equipment, and paid for training of the project staff in order to launch project activities several months before credit effectiveness. A similar level of ownership has been displayed with respect to the currently proposed program.

#### **5. Value added of Bank and Global support in this project:**

5.1 IDA has a strong comparative advantage in providing adequate funding and ensuring commitment for a sufficiently long time. Adequate funding and long-term commitment in turn are critical for the learning processes and experiments that are necessary to empower beneficiary groups and local communities to effectively take ownership and ensure sustainability. Furthermore, IDA is bringing

substantial international experience with respect to community-based development activities and support to agricultural services. Moreover, the ongoing IDA project on Agricultural and Rural Market Development is using an approach that systematically involves specialized local organizations in the implementation of its activities and thereby developing local capacities for planning and execution of development projects and the provision of technical advisory services. The proposed program would provide the opportunity to broaden that experience.

5.2 Rwanda is at the beginning of a process of administrative and political decentralization which would benefit strongly from IDA's substantial experience in this area elsewhere in Africa as well as outside of the continent. The proposed decentralized implementation of the program activities would contribute to strengthening the capacities of local administrations to plan and implement infrastructure improvement and other economic development strategies. The financial support to local administrations and communities under the program would also provide the opportunity to strengthen financial management capacities of local administrations as well as promote the establishment of accountability and transparency arrangements.

## **E. Summary Project Analysis** (Detailed assessments are in the project file, see Annex 8)

### **1. Economic (see Annex 4):**

Cost benefit NPV=US\$ million; ERR = % (see Annex 4)

Cost effectiveness

Incremental Cost

Other (specify)

Comparative advantage (DRC)

1.1 There are two critical issues that needed to be looked into very carefully: (a) the long-term viability/profitability of farming on rehabilitated marshlands and hill-sides; and (b) the competitiveness of priority crops, as defined by the Government, particularly maize and rice. The issue in the latter case is not whether Rwanda has or does not have currently a comparative advantage in maize and rice. Given the long-term orientation of the program and the hitherto limited cultivation of the two crops, the analysis focused rather on three interrelated questions: (i) what are the principal factors that determine the competitiveness of these crops; (ii) in case they can be grown competitively, how the level of competitiveness can be sustained; and, (iii) alternatively, if they are not currently competitive, what needs to be done to ensure their competitiveness.

#### **Economic Viability** (see Annex 4)

1.2 The financial and economic viability analysis focused primarily on the rehabilitation of farmed marshlands and hill-side areas. It was based on six different types of rehabilitation model/cropping techniques, two for hill-side farming and four for marshland farming. Results show that the financial and economic indicators are on the high side. Returns per family-day of labor have usually doubled or tripled in the models concerned compared with the reference situation. They range from RWF 1,140 in the Traditional (TT) marshland to RWF 2,790 on the hillside with a cattle unit at the eighth (cruising) year of the project. This is far above the RWF 300 going wage for unskilled agricultural labor. The financial attractiveness of the 6 farm models is confirmed by the IRR which varies from 30 percent in the case of hillside farming to 116 percent in the Traditional (TT) marshland. Net Present Values (NPV) for their part range from RWF 1,359,400 in hillside crop farming to RWF 9,052,600 in the marshland with waterworks Type A (drainage and pedal pumps). Benefit cost ratios average 1.9. Furthermore, switching values/sensitivity analysis show that financial revenues at farm level should fall an average of 40 percent or total costs (investment plus recurrent) increase by 87 percent to reduce the NPV to zero. Net Present Values for the economic analysis range from RWF 1,011,000 for the hillside farm with a cattle unit to RWF 2,795,000 for the marshland vegetable farm with just a simple drain. Corresponding IRRs vary from 34 to 184, while benefit costs ratios for the 6 farms average 2.5. Likewise, switching values are high and further underscore the attractiveness of the investments.

#### **Long-term Competitiveness of Priority Crops** (see Annex 4)

1.3 The estimated DRC coefficients to assess the competitiveness of agricultural commodities suggest that Rwanda enjoys a strong comparative advantage in maize, rice, sorghum and beans when they are produced for consumption in markets close to the production zones. For maize, sorghum and beans, Rwanda's comparative advantage extend well beyond the production zones and reaches Kigali, which is the most important urban consumption center of the country. In contrast to the results of maize, dry beans and sorghum, those of rice show that this commodity loses its competitive edge when it is marketed from the

production zones to Kigali. Several factors converge to hinder the competitiveness of rice in this important urban market: (i) high processing costs, due to high overhead costs, ill-adapted milling equipment leading to significant overcapacity and frequent equipment breakdown; (ii) low quality of milled rice; (iii) very low on-farm productivity levels; and (iv) poor water management. By removing most if not all of the above constraints, the project would significantly boost productivity in the rice sector. Moreover, the sensitivity results show a considerable improvement in competitiveness with modest increases in rice prices and changes in the exchange rate.

## **2. Financial (see Annex 4 and Annex 5):**

NPV=US\$ million; FRR = % (see Annex 4)

2.1 Two issues are to be considered here: (i) the financial viability of the project activities; and (ii) the fiscal impact of the operation, both at central and local government levels.

### **Financial Viability**

2.2 The results of the financial analysis are discussed above with that of the economic analysis. Detailed results are presented in Annex 4.

### **Fiscal Impact:**

2.3 The fiscal impact sums up the changes in expenditure and revenue that central and local government would incur through the implementation of the project. It is difficult to estimate the exact fiscal impact, ex ante, due to the demand-driven approach in the choice of investment activities. The likely direction of changes with respect to fiscal revenue and expenditure is discussed below.

2.4 *Central Government.* The cost to the central government would amount to the transfers to local governments and private sector beneficiaries, including farmers, from the IDA credit. Given its primary focus on productive sectors, the project would raise economic activities, productivity, and incomes. The expected expansion of output in the agricultural, exports, and off-farm sectors would not only raise taxable incomes of currently tax-paying entities in these sectors. It would also expand the tax base by bringing into the formal economy actors that have been operating outside of it and by pulling into the production process resources that have hitherto been idle. These cumulated changes would yield sufficient revenues in the long run to sustain project activities beyond the life time of the Program.

2.5 *Local Government.* Local governments would receive incremental revenues equivalent to the transfers associated with the implementation of small-scale rural infrastructure, marshland/hill-side rehabilitation, and ecosystem management sub-projects. The incremental expenditure at their level would correspond to their respective contributions to the financing of these activities. Initially, local government would contribute no less than 5 percent in cash to the total cost of infrastructure construction and maintenance, plus another 15 percent in terms of material and in-kind. In the second and third phases of the program, the contributions by local government would be raised gradually to ensure sustainability beyond the life of the Program. The increase in productivity and expansion of local employment and incomes would provide the necessary revenues to meet these long-term costs.

## **3. Technical:**

3.1 The key technical issues that needed to be looked into before program implementation revolved around the irrigation and drainage technologies in marshland areas. The other technical issues, particularly those related to small-scale rural infrastructure improvement, would be assessed as beneficiaries make

investment choices and plan individual sub-projects, which would be subject to prior evaluation and approval through the project management and coordination process.

3.2 A technical assessment of marshland and hill-side rehabilitation activities has been carried out. The study specifies alternative hill-side rehabilitation techniques with respective unit costs, advantages, and shortfalls. The marshland part of the study includes: (i) an inventory of potential marshland areas for rehabilitation; (ii) typology of rehabilitation techniques; (iii) alternative irrigation techniques; (iv) the capacity of government agencies and local communities to supervise rehabilitation activities as well as (v) agronomic aspects of marshland and hill-side agriculture. The pedological and hydrological aspects that are in specific individual marshlands and hill-side areas would be evaluated at the time of selection of rehabilitation sites by local beneficiaries.

#### **4. Institutional:**

4.1 There are three main institutional challenges resulting from the need for: (i) effective coordination of the decentralized process of implementing project activities; (ii) management of sub-projects by local communities; and (iii) the currently weak capacity of MINAGRI and ISAR to implement the research and extension activities. The coordination mechanism, including TORs for the main implementing agencies and the beneficiaries, will be described in the Project Implementation Manual (PIM). During implementation and supervision, particular attention would be devoted to the coordination aspect. Regarding the management of sub-projects by local communities, the emerging evidence from the CRDP pilot activities indicate that local communities, with the necessary support, can rapidly develop the capacities to effectively manage these activities. For instance, all participating CDCs under the CRDP are now functional and fully in charge of project management on the ground. On the research and extension services side, a rapid assessment of ISAR's capacities has been carried out during appraisal. Moreover, the institute is currently preparing a strategic program that would be completed before implementation of this project. The results of the assessment and the strategic program would guide the capacity building effort under the project. In addition, the project would use sub-contracting to exploit the large capacities of local specialized organizations (SLO) and encourage other private operators that are active in the rural sector to complement MINAGRI's extension efforts. A recent institutional assessment of these organizations indicate that they are better equipped on average than the government agencies. Many of them have 10-20 years experience of development work. The ongoing pilot project (Rural and Agricultural Market Development Project) is currently being implemented in close collaboration with these organizations. It is expected to provide useful and replicable lessons by the time the current project becomes effective.

##### 4.1 Executing agencies:

4.1.1 The implementation of the project activities calls for close collaboration between different government agencies and between central and local government institutions (see Section 4.1). The Project Implementation Manual will clarify the relationships between individual executing agencies with an objective of ensuring effective coordination and monitoring of program activities. The modalities of collaboration would be specified in the PIM.

##### 4.2 Project management:

4.2.1 In order to ensure effective management of the project activities right at the start, the Project Coordinator and the CFO have been hired before negotiations and well ahead of effectiveness, so that they can familiarize themselves with the requirements and processes of managing and coordinating project activities before implementation. In addition, all key members of PSCU would be recruited in line with Bank guidelines in order to ensure the quality of staff. The required capacities of the project management

team to successfully coordinate and monitor program activities and effectively collaborate with local administrations, beneficiary groups, and other implementing agencies will guide the design of the modalities of coordination and monitoring, which will be specified in the PIM.

#### 4.3 Procurement issues:

4.3.1 The main issue here is how to design and implement a community-based procurement system that is simple enough to be mastered by local beneficiary groups, yet effective enough to ensure proper utilization of the program resources. As indicated earlier, the current project would scale up the pilot CRDP pilot project and hence would use the same procurement arrangements which have proven to be effective. According to a recent aide memoire, the CDCs have proven their ability to handle their fiduciary responsibilities and properly follow the procurement procedures. The same training and other capacity strengthening mechanisms that were used under CRDP to empower local communities would be used to support new beneficiary communes under the proposed Program. To coordinate these activities, PSCU would recruit a procurement specialist.

#### 4.4 Financial management issues:

4.4.1 From the financial management point of view, the main issue would be to establish a financial management system that is compliant with OP/BP 10.02 by effectiveness. The approach that is proposed to establishing such a system is described in C.4.2 above. The issue of community-based financial management emerges here as well. The proposed approach would be the same as in the case of procurement. The mechanisms that have been put in place and have worked under CRDP would be used under the present program.

### 5. Environmental:

Environmental Category: B (Partial Assessment)

5.1 Summarize the steps undertaken for environmental assessment and EMP preparation (including consultation and disclosure) and the significant issues and their treatment emerging from this analysis.

5.1.1 The EA team concluded that in the absence of a project, the current process of degradation on the farmed wetlands will continue due to continued loss of vegetation, accelerated erosion, and poor drainage systems. This in turn would result in reduced water retention capacity, leading to more frequent and damaging floods and loss of biodiversity. Other adverse environmental impacts associated with a no-project option are: (i) non-sustainable land use practices on hillsides, and increased pressure on adjacent wetlands and other marginal systems due to declining soil fertility; (ii) likely increase in nutrient loading and eutrophication due to uncontrolled use of fertilizers and pesticides; and (iii) deteriorating water quality. Consequently, the EA concluded that the no-project option will be costly in both economic, social, and environmental terms. The implementation of the project may generate, however, its own negative environmental impacts. As is apparent from its components, the project aims at promoting broad-based economic growth and reducing poverty by providing a strong support to the activities in which the poor tend to be employed, that is, agriculture and related activities. Since land scarcity is a major constraint in Rwanda, expanding agricultural production through intensification, infrastructure development, and the use of chemical inputs is likely to put a relatively high pressure on the natural resource base.

5.1.2 During the first phase, the project will support agricultural activities in about 4,000 ha of wetlands. Although these are already farmed marshlands, noticeable negative environmental impacts could result from the intensive exploitation if appropriate measures are not taken. In particular, unsustainable exploitation (e.g., uncontrolled removal of remaining vegetative cover, intensive pesticides use, inappropriate drainage systems) of these fragile ecosystems could impair their hydrologic and edaphic characteristics, and possibly result in their drying up. This could affect their productive functions

(agriculture, fisheries, wood, and other products of interest to rural livelihoods), and reduce or eliminate key ecological functions (flood abatement, water erosion control, sediment stabilization and water purification). Unsustainable exploitation could also be detrimental to the flora and fauna species inhabiting the wetlands and their surroundings. The rehabilitation of farmed lands would certainly lead to more people being involved in irrigated agriculture. This could increase the incidence of waterborne diseases such as malaria and bilharzia. Finally, insufficient attention to the cumulative impacts of the rehabilitation/development of some types of rural infrastructure, such as feeder roads and arterial trail tracks, could affect negatively the environment (localized erosion, for example).

## 5.2 What are the main features of the EMP and are they adequate?

5.2.1 In compliance with OP 4.01, an environmental assessment of the project has been conducted. The report recommends a number of measures to be implemented in order to mitigate the potential adverse environmental impacts that could result from the project implementation. Regarding wetland exploitation, an important safeguard is the fact that the project will include wetlands that are already farmed. Wetlands that are non-exploited at this stage will not be put under farming. As recommended by the EA, even for those wetlands under exploitation before the project, a well targeted environmental assessment study will be undertaken prior to intervention on each one of them. In addition, an assessment of the biodiversity of wetlands will be conducted (GEF component) in order to guide the selected development of these ecosystems, and their restoration, as needed. The EA has prepared an environmental screening tool (for all types of investments) that will be integrated in the review of the funding requests emanating from communities and specialized organizations. The project will add the cost of environmental impact mitigation to the total financing made available to communities applying for investment funding. Environmental indicators will be included in the monitoring and evaluation system of the project.

5.2.2 In order to mitigate the potential environmental impact of increased use of pesticides, the project has prepared an extensive integrated pest management (IPM) plan that will train some 2,000 to 2,500 farmers following the "farmer field approach". This plan describes the methods to be used to reduce the adverse effect related to pesticide use, and provides an implementation manual for users. It would significantly reduce the quantity of pesticides used (compared to without IMP scenario). Sensitization of local communities, testing of biological control methods for malaria and bilharzia vectors as well as the re-enforcement of the material means of local clinics will be used to reduce the prevalence of these two most common waterborne diseases among wetland farmers. Capacity building constitute an important component of the environmental management plan. In order to help conduct effective environmental assessment studies and implement mitigation measures, the project will support capacity building at both the central, regional (prefecture), and community levels. Given the relatively low technical capacity in the key institutions involved in the implementation of the project, the Project Preparation Fund (PPF) will finance an intensive training program intended to develop the skills of a core staff to be involved in the implementation of the planned activities. Environmental modules, in particular environmental assessment, are an integral part of this training program. This will be supplemented by longer training sessions during project implementation. The cost of the environmental mitigation, monitoring (including targeted studies), and training (central, regional, and local levels) amounts to US\$750,000. These resources would be mobilized from the GEF and RSP resources, according to the division of responsibility between MINAGRI and MINITERE.

5.2.3 The project will be implemented in a decentralized manner in which the Community Development Committees (CDCs) will play the key role. The project coordination will be assured by a small unit from MINAGRI (MINITERE will coordinate the implementation of the GEF component), but sub-projects will be implemented directly by local communities. The experience of the on-going Community Reintegration

and Development Project (CRDP) shows that when provided with the necessary support, communities are highly efficient and successful in designing and implementing development initiatives, and overseeing contractual arrangements for service delivery. This project will continue using the community development approach developed by CRDP. In addition, the project will use sub-contracting to exploit the capacities of local specialized organizations that seem to be better equipped than many government agencies. The on-going Rural and Agricultural Market Development pilot project is relying on many of these organizations for its operations.

5.3 For Category A and B projects, timeline and status of EA:

Date of receipt of final draft: November 27, 2000

Based on the results of the environmental assessment and the review by AFTE1, the environmental category for the proposed project has been determined as Category B.

5.4 How have stakeholders been consulted at the stage of (a) environmental screening and (b) draft EA report on the environmental impacts and proposed environment management plan? Describe mechanisms of consultation that were used and which groups were consulted?

#### **Environmental Management Plan**

5.4.1 The EA has proposed mitigation measures for effective management of the marshlands and hillsides rehabilitation as well as the implementation of small-scale rural infrastructure investments with cost estimations. The mitigation measures also include a Pest Management Strategy and Plan which will be implemented under the current project. These measures as well as the environment monitoring and evaluation plan are detailed in the PIM. The proposed measures, together with the social mitigation measures would be the centerpiece of the local Environmental and Social Management Plans (ESMP) that would be prepared by the CDCs in the individual beneficiary communities. The measures and environmental aspects are also fully integrated in the criteria for sub-project eligibility in order to ensure compliance by implementing beneficiary groups and partner agencies.

#### **Stakeholders Consultations**

5.4.2 The EA team has traveled extensively in Rwanda to consult with farmers, local administrations, and local organizations that are active in the rural areas during the preparation of the environmental assessment. The EA was carried out in close collaboration with the technical services of the Ministry of Agriculture, Forestry, and Animal Resources and in consultation with the Ministries of Local Administration and Social Affairs, Energy, Water and Natural Resources, and Land, Human Resettlement, and Environment. The consultations have also included the major donor institutions and international organizations that are based in Kigali.

5.5 What mechanisms have been established to monitor and evaluate the impact of the project on the environment? Do the indicators reflect the objectives and results of the EMP?

5.5.1 A mechanism to monitor the environmental impact of project activities would be developed under the project's monitoring and evaluation component and on the basis of the likely adverse environmental impacts that have been identified in the EA as well as the guidelines contained therein for the screening and review of sub-projects. The PCSU's Monitoring and Evaluation Division would carry out the impact monitoring activities in collaboration with MINETERRE and local administrations and beneficiary groups

within the framework of local Environmental Management Plans (EMP).

## **6. Social:**

6.1 Summarize key social issues relevant to the project objectives, and specify the project's social development outcomes.

6.1.1 A social assessment has been carried out, which identified in general a series of social factors affecting the design and implementation of the project. Social factors identified in the SA include:

- a strong tradition of self-help groups, community organizations and farmers' associations, and a strong willingness to contribute to project activities;
- the civil war and its aftermath, resulting in a large number of vulnerable groups, such as, orphans, youth-headed households, landless, widows and elders without assistance, disabled, and HIV/AIDS affected people;
- for the women, the poor and other vulnerable groups, access to markets and credit are the main bottlenecks for the proposed crop intensification and commercialization.

6.1.2 It is, nonetheless, not clear yet either from the social assessment report or from the findings of the field visits undertaken so far, to what degree the Bank's social safeguard policies would be triggered, if any, and what are the mitigating measures to be developed. Consequently, project site-specific communities need assessment in the early phases of the project that would be carried out to provide more information on the target areas' poverty profiles and the project's potential social impacts. Subsequently, social guidelines would be developed, which, together with the environmental guidelines, would be included in the local ESMPs to be used in the screening and monitoring of sub-project activities during implementation. To assure quality at entry, gender issues would be mainstreamed in the project through the participation of women representatives in local and prefectural committees and through the planned involvement of women's organizations in project activities.

6.1.3 Due to the crucial role of women in Rwanda's agriculture, the project envisages training in agricultural techniques adapted to women's daily task schedules. The assessment has identified that women involved in off-farm activities or marketing of farm products would need support in the following areas: technical production, appropriate technologies, credit acquisition, management of women's organizations. The training would also incorporate non-farming topics, such as, health and nutrition and practices on prevention of AIDS, waterborne diseases, malaria, and childcare. Training activities would be conducted in collaboration with MIGEPROFE. SLOs may be the most appropriate channel for this technical assistance. A number of these organizations, that are active in the areas of rural development and natural resources management, have been identified during the preparation and are currently participating in the implementation of the pilot project on Agricultural and Rural Market Development Project (ARMDP).

6.1.4 Access to funding through commercial credit, matching grants, and revolving loan mechanisms for the rural poor would lay the groundwork for strengthening sustainable economic activities for farmers and lending institutions. The availability of funding would also enhance opportunities for profitable off-farm activities.

## 6.2 Participatory Approach: How are key stakeholders participating in the project?

6.2.1 In line with the GOR decentralization strategy, the local population would be incorporated in all phases of the project. By using the same implementation arrangements as under the CRDP, the project would enable local communities and beneficiaries to fully participate in the choice, design, and implementation of sub-projects. Specific capacity-building needs would be identified in close collaboration with local communities and beneficiary groups. Indigenous systems of self-help, resource mobilization and organization would be incorporated in individual sub-project preparation, implementation, and monitoring arrangements. This would be critical in ensuring that the poorest member of the target community are not priced out from the project. Prior to the implementation of project activities, target populations would benefit from information sharing and consultation with PSCU and their respective CDCs on the choice of activities and the type and level of required participation (cash, in kind contribution, and/or labor) as well as future risks and benefits resulting from project activities. For infrastructure sub-projects (marshland and hill-side rehabilitation, small-scale public rural infrastructure, and integrated ecosystem management), farmers and other beneficiary groups would be informed about the costs involved in building (their individual or communal contribution) and maintaining said infrastructure.

## 6.3 How does the project involve consultations or collaboration with NGOs or other civil society organizations?

6.3.1 SLOs would have a significant role to play in training and follow up technical support to project activities. In developing collaborative arrangements, priority would be given to SLOs with strong background and proven track record in marshland development, training in management and marketing, and processing and storage of products. The SLOs would be expected to mainstream most training and participatory self-evaluation activities into the farmers organizations operations, ensuring in this way sustainability and ownership. For the same reason, beneficiary groups and associations would be closely involved in designing and implementing project training activities.

## 6.4 What institutional arrangements have been provided to ensure the project achieves its social development outcomes?

6.4.1 Given the weak capacity of the technical institutions involved, training and other capacity strengthening activities would be a priority. The technicians would need to be sensitized to client-oriented approaches in dealing with rural target groups in a socially sensitive context. The project proposes to mitigate institutional constraints by implementing the following:

- site-specific and communal planning process would be developed through local committees in order to increase community cohesion and to strengthen communal decision-making;
- community members and technical service agents would be trained in participatory methods of project design, implementation, and monitoring.

## 6.5 How will the project monitor performance in terms of social development outcomes?

6.5.1 A participatory monitoring and evaluation system would be developed before effectiveness and beneficiaries trained in M&E processes through the project and in collaboration with qualified SLOs during implementation.

**7. Safeguard Policies:**

7.1 Do any of the following safeguard policies apply to the project?

<b>Policy</b>	<b>Applicability</b>
<b>Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>Natural habitats (OP 4.04, BP 4.04, GP 4.04)</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<b>Forestry (OP 4.36, GP 4.36)</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<b>Pest Management (OP 4.09)</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>Cultural Property (OPN 11.03)</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<b>Indigenous Peoples (OD 4.20)</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<b>Involuntary Resettlement (OD 4.30)</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<b>Safety of Dams (OP 4.37, BP 4.37)</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<b>Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No
<b>Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No

7.2 Describe provisions made by the project to ensure compliance with applicable safeguard policies.

7.2.1 A pest management plan has already been drafted under the ongoing Agricultural and Rural Market Development Project and is to be discussed with government for implementation before effectiveness of the proposed program. Furthermore, as indicated earlier, an environmental assessment has been carried out to ensure that program activities are compliant with the safeguard policies on environment. Finally, although not applicable to this project, the objectives of OP 4.37 have been used as guidelines in preparing the marshland rehabilitation component of the proposed program.

## F. Sustainability and Risks

### 1. Sustainability:

The program would be prepared keeping the following factors in mind, as being critical to ensuring sustainability: (i) demand-responsiveness of program activities; (ii) simplicity of the design of sub-project; (iii) replicability of project activities; (iv) participatory and decentralized implementation; (v) capacity building through experimenting and learning by doing.

### 2. Critical Risks (reflecting the failure of critical assumptions found in the fourth column of Annex 1):

Risk	Risk Rating	Risk Mitigation Measure
<b>From Outputs to Objective</b>		
(i) The evidence of leases to beneficiaries for a period sufficiently long enough to allow them to efficiently and sustainably carry out subprojects activities will be a criteria for subproject eligibility under the component on rehabilitation of farmed marshlands and hill-side areas.	S	(i) The adoption of legal provision that would ensure farmer access to and use of rehabilitated farmland through transferable leases of at least 20 years would constitute a condition of effectiveness for the project.
(ii) The government's privatization is successful, leading to a withdrawal of the current parastatals from the management of the coffee and tea sectors and takeover of factories by private entrepreneurs.	M	(ii) If the privatization program has not been completed by project effectiveness, the first task under the export promotion component would be to work with government to define the future relationship between farmer organizations and the privatized factories before new activities are carried out under the present component of the proposed program.
(iii) The ongoing pilot project (ARMDP) provides workable solutions with respect to the promotion of private-sector based systems of advisory services for small-holder farmers.	N	(iii) The project is progressing satisfactorily and according to plan. Its medium-term review and second year annual evaluation would provide lessons to fine-tune, if necessary, the approach which is being considered for the current program.
(iv) The pilot project (CRDP) provides workable solutions with respect to community-based planning and management of economic infrastructure.	N	(iv) CRDP has been under implementation for a few years now. As part of the program preparation, its modalities would be analyzed and any necessary adjustment reflected in the design of the infrastructure improvement activities under the program.

<p>(v) Low cost technologies exist on-shelf or can be introduced at reasonable costs to promote off-farm productive activities.</p>	<p>N</p>	<p>(v) ISAR and other R&amp;D institutions in Rwanda have developed low technology process and equipment that will be inventoried and adapted, if necessary, for their dissemination under the program.</p>
<p><b>From Components to Outputs</b></p>		
<p>(i) The relationship between farmers and local administrations with respect to access and use of marshlands is transparent and builds trust around project activities.</p>	<p>S</p>	<p>(i) Program would establish a consultative framework that would allow for transparency and accountability with respect to the planning and implementation of program activities. The PSCU would regularly monitor the relationships between the different beneficiary groups and work with them and the government to solve any problems that might emerge.</p>
<p>(ii) The level of unit cost of production is the most important determinant of export competitiveness.</p>	<p>N</p>	<p>(ii) The environment for production and trading would be monitored regularly in order to address in a timely manner any changes that would undermine the competitiveness of the target sector.</p>
<p>(iii) The private sector will find enough incentives and resources to participate significantly in agricultural services delivery.</p>	<p>M</p>	<p>(iii) The incentive environment would be monitored to enable the project coordination and management team to work with government, local administrations, and beneficiaries to remove any policy or institutional distortions that would affect the willingness of the private sector to invest in agricultural services.</p>
<p>(iv) Farmers and other private sector operators are willing to adopt new AMT technologies.</p>	<p>S</p>	<p>(iv) Prospective studies would be carried out to identify the AMT technology in which there is enough interest among potential private investors and end users.</p>
<p>(v) The regulatory framework for marketing and the movement of goods across local markets remains adequate.</p>	<p>N</p>	<p>(v) The internal trading law that has been adopted recently by parliament has been cleared of all the measures that would disrupt the operation of local markets and thus affect the project's outcome. It does not, however, eliminate the possibility of future measures that may conflict with the project objectives. Changes in this area would be monitored and necessary adjustment brought about through dialogue with GOR.</p>

(vi) There are enough entrepreneurs willing to invest in off-farm productive activities in the rural areas.	M	(vi) The response of private entrepreneurs to the incentives offered by the program would be monitored in order to undertake any necessary adjustment and / or design information and education campaigns to motivate private investment.
(vii) There is sufficient idle labor which has the necessary skills and which can be employed in off-farm activities.	N	(vii) Should any critical skill category prove to be deficient, the project would link up with local training institutions to upgrade the skills of concerned beneficiary groups.
(viii) The Program Coordination and Monitoring Unit will have adequate human resources and sound financial management and monitoring systems.	M	(viii) The Unit would use subcontracting with qualified local organizations to augment its capacities to implement project activities that cannot be undertaken at the local level by beneficiaries. The performance of the financial management and monitoring systems would be assessed regularly through close supervision and any necessary measures taken to ensure effectiveness.
<b>Overall Risk Rating</b>	M	In addition to very close supervision, particularly during the first two years of the project, a strong M&E team will be established within the Project Support and Coordination Unit (PSCU). This combination would ensure close monitoring of eventual project risks as well as timely reaction to address these risks.

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N (Negligible or Low Risk)

**3. Possible Controversial Aspects:**

None

## **G. Main Credit Conditions**

### **1. Effectiveness Condition**

- (a) Initial payment of the equivalent of \$50,000 by Government into the Project Account opened at BNR for the project's counterpart funds;
- (b) Establishment of a Project Support and Coordination Unit (PSCU) within MINAGRI and recruitment of staff having qualifications and experience satisfactory to IDA;
- (c) Adoption by Government of a Project Implementation Manual (PIM) that is satisfactory to IDA;
- (d) Signing of a Subsidiary Financing Agreement (SFA) between BNR and Government under terms and conditions satisfactory to IDA;
- (e) Appointment of a Project Auditor under terms and conditions acceptable to IDA;
- (f) Establishment of an adequate Financial Management System (FMS) that is satisfactory to IDA and which ensures proper monitoring and execution of project activities; and
- (g) The furnishing to IDA of a satisfactory Procurement Plan (PP) for the first year of the Project.

### **2. Other** [classify according to covenant types used in the Legal Agreements.]

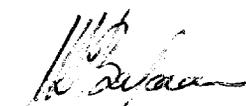
## H. Readiness for Implementation

- 1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation.
- 1. b) Not applicable.
- 2. The procurement documents for the first year's activities are complete and ready for the start of project implementation.
- 3. The Project Implementation Plan has been appraised and found to be realistic and of satisfactory quality.
- 4. The following items are lacking and are discussed under loan conditions (Section G):
  - (a) Subsidiary Financing Agreement (SFA) between BNR and Government; and
  - (b) Adequate Financial Management System (FMS) established.

## I. Compliance with Bank Policies

- 1. This project complies with all applicable Bank policies.
- 2. The following exceptions to Bank policies are recommended for approval. The project complies with all other applicable Bank policies.

OP/BP 10.02 requires that the cost of the annual audit be financed from the operating cost category. The Task Team has, at the Borrower's request, agreed that these costs be disbursed from the consultants' services category.



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**Annex 1: Project Design Summary**  
**RWANDA: RURAL SECTOR SUPPORT PROJECT**

<b>Hierarchy of Objectives</b>	<b>Key Performance Indicators</b>	<b>Monitoring &amp; Evaluation</b>	<b>Critical Assumptions</b>
<p><b>Sector-related CAS Goal:</b></p> <p>Revitalization of the rural economy to increase rural incomes, reduce poverty, and reinforce national stability.</p>	<p><b>Sector Indicators:</b></p> <p>1) Average household incomes among beneficiary farmers are 20%, 50 %, and 100 % higher than the baseline by the end of phase I, II, and III, respectively;</p> <p>2) The share of population under the poverty line among beneficiary farmers are 15%, 20 %, and 50 % lower than the baseline by the end of phase I, II, and III, respectively.</p>	<p><b>Sector/ country reports:</b></p> <p>1) Reports based on updates of the baseline rural household survey at the end of phases I, II, and III;</p> <p>2) Reports based on updates of the 1998 Poverty Assessment at the end of phases I, II, and III.</p>	<p><b>(from Goal to Bank Mission)</b></p> <p>i) Government pursues policies of political and macroeconomic stability and sustains the liberalization of the domestic economy.</p>

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
<p><b>Program Purpose:</b></p> <p>Raise the productivity and increase the employment of resources that the rural poor own or depend on for their livelihood, primarily land and labor, through increased transfer of financial and technical resources.</p> <p><b>Program Phasing:</b></p> <p><u>PHASE I: 2001-2005</u></p> <p>Create the institutional, technical, and infrastructural capacities that are needed to support the generation and adoption of efficient cropping and post-harvest technologies.</p> <p><u>PHASE II: 2006-2011</u></p> <p>Accelerate the intensification and commercialization of agricultural production.</p> <p><u>PHASE III: 2012-2017</u></p> <p>Promote the diversification of economic activities in rural areas and expand the productive employment of available resources.</p>	<p><b>End-of-Program Indicators:</b></p> <p>1) Average crop yields per hectare among beneficiary farmers are 50%, 100 %, and 200 % higher than the baseline by the end of phase I; II, and III, respectively;</p> <p>2) Average returns per labor unit among beneficiary farmers are 20%, 50 %, and 100 % higher than the baseline by the end of phase I; II, and III, respectively.</p> <p>See Table 1 of Section A</p>	<p><b>Program reports:</b></p> <p>1-2) Reports based on updates of the baseline rural household survey at the end of phases I, II, and III.</p> <p>See Table 1 of Section A</p>	<p><b>(from Purpose to Goal)</b></p> <p>ii) The main constraints to productivity growth are of technological and financial nature.</p> <p>iii) The Agricultural and Rural Market Development Project (ARMDP) provides workable solutions with respect to: (a) the development of input distribution and local output marketing systems; and (b) the facilitation of farmer access to credit for modern inputs;</p> <p>iv) The Community Reintegration and Development Project (CRDP) provides workable solutions with respect to community-based planning and management of economic infrastructure;</p> <p>v) Performance triggers for subsequent loans are met at the end of Phase One (see Table 2 of Section B).</p>

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
<p><b>GEF Operational Program:</b></p> <p>Broad national framework for sustainable management of natural resources is in place.</p>	<p>Consensus for coordinated action among stakeholders is achieved.</p>		
<p><b>Project Development Objective:</b></p> <p>Farmers, other target private sector operator groups, and the relevant government institutions have acquired the basic institutional and technical capacities that are needed for: (i) the development of more effective service delivery and infrastructure maintenance systems; and (ii) the efficient management of export crop and marshland/hill-side area farming.</p>	<p><b>Outcome / Impact Indicators:</b></p> <p>1) Marshland / hill-side and export crop farmers have adopted new and improved cropping technologies, including IPM;</p> <p>2) The quantities of fertilizers used per capita and per hectare among beneficiary farmers are 50% higher than the baseline;</p> <p>3) The quantities and shares of marketed crop output per household among beneficiary farmers are 50% higher than the baseline.</p>	<p><b>Project reports:</b></p> <p>a) Quarterly project progress reports;</p> <p>b) Supervision reports;</p> <p>c) Evaluation reports</p>	<p><b>(from Objective to Purpose)</b></p> <p>The ongoing pilot project (ARMDP) provides workable solutions with respect to the provision of advisory services to small-holder farmers.</p>

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
<p><b>Global Objective:</b></p> <p>Conservation and sustainable use of natural resources through integrated management of critical ecosystems.</p>	<p>Adequate policy, institutional, and regulatory framework for sustainable resource is in place.</p>	<p>a) Quarterly project progress reports;</p> <p>b) Supervision reports;</p> <p>c) Evaluation reports</p>	

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
<p><b>Output from each Component:</b></p> <p><b>1. Rehabilitation of Farmed Marshland and Hillside Areas</b></p> <p>Effective mechanisms to empower: (i) beneficiary farmers to efficiently manage marshland / hillside crops; and (ii) private operators to intervene in land and water infrastructure construction maintenance have been established.</p> <p><b>2. Integrated Management of Critical Ecosystems</b></p> <p>Improved soil, water and fertility conservation techniques have been adopted by beneficiary farmers.</p> <p>The capacity of local communities to manage critical ecosystems have been strengthened.</p> <p><i>1/ This component is to be implemented under the GEF operation which is currently being finalized by MINITERE in collaboration with MINAGRI</i></p>	<p><b>Output Indicators:</b></p> <p>1) At least 500 FASDOs have been trained in the management of marshland and hillside crops;</p> <p>2) The total area of rehabilitated farmed marshlands and hillsides have reached 4,000 ha and 2,000 ha, respectively.</p> <p>1) National Strategy and Action Plan for conservation and sustainable use of wetlands are ready and under implementation;</p> <p>2) Ramsar Convention by GOR;</p> <p>3) The shares of participating CDCs that have developed and started implementation of management plans for critical habitats and adjacent areas reach x% and y%, respectively; 1/</p> <p>4) The Environmental Information and database are operational.</p>	<p><b>Project reports:</b></p> <p>a) Quarterly project progress reports;</p> <p>b) Supervision reports;</p> <p>c) Evaluation reports</p> <p>a) Quarterly project progress reports;</p> <p>b) Supervision reports;</p> <p>c) Evaluation reports</p>	<p><b>(from Outputs to Objective)</b></p> <p>i) The prevailing legal and regulatory framework is conducive to increased farmer investment in land and water infrastructure.</p>

### **3. Promotion of Commercial and Export Agriculture**

The capacities of export crop farmers to manage their commercial and technical activities have been strengthened.

1) At least 12 farmer-owned Commercial Enterprises and Technical Support Entities (CETSEs) have been set up;

2) The established CETSEs operate satisfactorily;

3) The unit costs per hectare of export crops among beneficiary farmers are 10% lower than the baseline;

4) The total output of export crops among beneficiary farmers is 25% higher than the baseline.

5) The quantities of tea and coffee exports are at least 25% higher than the baseline;

6) The quantities of exported alternative crops are at least 100% higher than the baseline.

a) Quarterly project progress reports;

b) Supervision reports;

c) Evaluation reports

ii) The government's privatization is successful, leading to a withdrawal of the current parastatals from the management of the coffee and tea sectors and take over of factories by private entrepreneurs.

#### **4. Support to Agricultural Services Delivery Systems**

The capacities of lead public institutions, farmer associations, and specialized local organizations (SLOs) have been sufficiently strengthened to participate in the delivery of research and extension services.

- 1) The lead research and extension institutions have been restructured and strengthened;
- 2) At least 500 farmer organizations [Agricultural Services Delivery Organizations (FASDOs)] have been trained to participate in services delivery;
- 3) At least 80 Private Agribusiness Services Delivery Organizations (PASDOs) have been trained to participate in services delivery;
- 4) At least 80% of FASDO member farmers have adopted improved farming practices, including IPM.

- a) Quarterly project progress reports;
- b) Supervision reports;
- c) Evaluation reports.

iii) The ongoing pilot project (ARMDP) provides workable solutions with respect to the promotion of private-sector based systems of advisory services for small-holder farmers.

**5. Small-scale Infrastructure Development**

Capacities of local communities and private sector operators to construct and maintain transport and post-harvest equipment and infrastructure have been strengthened.

- 1) At least 100 local community organizations have been trained in the maintenance and management of local infrastructure;
- 2) At least 50 private sector operators have been trained in the construction and maintenance of post-harvest and transport infrastructure and equipment;
- 3) At least 18 marketing facilities have been constructed;
- 4) Alternative Appropriate Means of Rural Transport (AMT) have been pilot tested and disseminated during phase I.

- a) Quarterly project progress reports;
- b) Supervision reports;
- c) Evaluation reports.

iv) The ongoing pilot (CRDP) provides workable solutions with respect to community-based planning and management of economic infrastructure.

**6. Promotion of off-farm productive activities in rural areas**

Higher levels of off-farm employment and incomes have been achieved.

- 1) Off-farm Sector Strategies and Development Plans (OSDP) have been prepared and successfully tested in 5 Prefectures by local administrations;

- a) Quarterly project progress reports;
- b) Supervision reports;
- c) Evaluation reports.

v) Low cost technologies exist on-shelf or can be introduced at reasonable costs to promote off-farm productive activities;

**7. Program Support and Coordination**

Effective implementation, coordination, and monitoring of program activities.

- 1) Baseline Rural Sector Survey (BRSS) implemented in Year One;
- 2) Baseline indicator data base available by end of Year One;
- 3) Program Monitoring Guide (PMG) and Impact Evaluation Guide (IEG) available by middle of Year One;
- 4) Adequate level of quality of monitoring and evaluation activities achieved by the end of Year One;
- 5) Timeliness and quality of project and financial management reporting maintained throughout project life;
- 6) Effectiveness in coordinating the activities of various executing agencies and beneficiary communities maintained throughout project life.

- a) Quarterly project progress reports;
- b) Supervision reports;
- c) Evaluation reports

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
<p><b>Project Components / Sub-components:</b></p> <p>1. <u>Rehabilitation of farmed Marshland and Hill-side areas</u></p> <p>1.1 <i>Financing of small-scale drainage and irrigation infrastructure on farmed marshlands;</i></p> <p>1.2 <i>Financing of soil and natural resources conservation R&amp;D and infrastructure on marshlands and hill-sides;</i></p> <p>1.3 <i>Advisory services on cropping and water management technologies;</i></p> <p>1.4 <i>Training of farmer groups and other target private sector operators in construction, management, and maintenance of land and water conservation infrastructure;</i></p> <p>1.5 <i>Institutional support to producer organizations and community groups.</i></p>	<p><b>Inputs: (budget for each component)</b></p> <p>US\$79.00 M <i>(Phase I: US\$13.97 M)</i></p>	<p><b>Project reports:</b></p> <p>a) Quarterly project progress reports;</p> <p>b) Supervision reports;</p> <p>c) Evaluation reports.</p>	<p><b>(from Components to Outputs)</b></p> <p>a) Quarterly project progress reports;</p> <p>b) Supervision reports;</p> <p>c) Evaluation reports.</p>

<p>2. <u>Integrated Management of Critical Ecosystems</u></p>	<p>US\$15.00 M (Phase I: US\$5.00 M)</p>	<p>a) Quarterly project progress reports; b) Supervision reports; c) Evaluation reports</p>	<p>ii) The level of unit cost of production is the most important determinant of export competitiveness.</p>
<p>2.1 <i>Development of an enabling environment for sustainable resource use: policy framework, regulations, institutional support.</i></p>			
<p>2.2 <i>Development and implementation of community-based integrated management plans for critical ecosystems (wetlands, drylands, and mountain areas).</i></p>			
<p>2.3 <i>Creation of an Environmental Information System (EIS).</i></p>			
<p>2.4 <i>Capacity building and institutional strengthening to support a decentralized integrated management of natural resources.</i></p>			
<p>3. <u>Promotion of Commercial and Export Agriculture</u></p>	<p>US\$13.00 M (Phase I: US\$10.53M)</p>	<p>a) Quarterly project progress reports; b) Supervision reports; c) Evaluation reports.</p>	
<p>3.1 <i>Provision of advisory services on production and post-harvest technologies to farmers and other private sector operators;</i></p>			
<p>3.2 <i>Financing of post-harvest R&amp;D and infrastructure;</i></p>			
<p>3.3 <i>Financing of technical assistance and grants to strengthen the capacities of export crop farmer organizations;</i></p>			
<p>3.4 <i>Financing of technical assistance and capital investment to establish farmer-owned Commercial Enterprises and technical Support Entities (CETSEs).</i></p>			

<p>4. <u>Support to Agricultural Services Delivery Systems</u></p> <p>4.1 <i>Financial and technical assistance to private and restructured lead public R&amp;D institutions to carry out adaptative research on cropping, conservation, and post-harvest technologies;</i></p> <p>4.2 <i>Financial support and training of farmer organizations on techniques of participatory research and extension services delivery;</i></p> <p>4.3 <i>Technical assistance to private operators willing to invest in services delivery activities.</i></p>	<p>US\$13.00 M (Phase I: US\$9.59 M)</p>	<p>a) Quarterly project progress reports;</p> <p>b) Supervision reports;</p> <p>c) Evaluation reports</p>	<p>iii) The private sector will find enough incentives and resources to participate significantly in agricultural services delivery.</p>
<p>5. <u>Small-Scale Rural Infrastructure Development</u></p> <p>5.1 <i>Institutional and financial assistance support to Community Development Committees (CDCs) to implement conservation and transport infrastructure development and maintenance activities;</i></p> <p>5.2 <i>Technical assistance to private operators willing to invest in post-harvest, conservation, and transport infrastructure construction and maintenance activities;</i></p> <p>5.3 <i>Financial assistance to farmer groups for the acquisition of post-harvest infrastructure and Appropriate Means of Rural Transport (AMT);</i></p> <p>5.4 <i>Technical assistance to private operators for the construction and/or maintenance of AMTs.</i></p>	<p>US\$22.00 M (Phase I: US\$9.81 M)</p>	<p>a) Quarterly project progress reports;</p> <p>b) Supervision reports;</p> <p>c) Evaluation reports.</p>	<p>iv) Farmers and other private sector operators are willing to adopt new AMT technologies;</p> <p>v) The regulatory framework for marketing and the movement of goods across local markets remains adequate.</p>

<p><b>6. <u>Promotion of Off-farm Productive Activities in Rural Areas</u></b></p> <p><i>6.1 Technical support to Prefectures' ETCs and Commune's CDCs to prepare and pilot-test local off-farm development strategies;</i></p> <p><i>6.2 Financing of R&amp;D for selected off-farm production activities;</i></p> <p><i>6.3 Training in enterprise development and management;</i></p> <p><i>6.4 Provision of seed-funding and facilitation of access to investment credit.</i></p>	<p>US\$10.00 M <i>(Phase I: US\$0.34 M)</i></p>	<p>a) Quarterly project progress reports;</p> <p>b) Supervision reports;</p> <p>c) Evaluation reports</p>	<p>vi) There are enough entrepreneurs willing to invest in off-farm productive activities in the rural areas;</p> <p>vii) There is sufficient idle labor which has the necessary skills and which can be employed in off-farm activities.</p>
<p><b>7. <u>Program Support and Coordination</u></b></p> <p><i>7.1 Establish a Project Coordination Unit.</i></p> <p><i>7.2 Design and implement a mechanism to effectively coordinate the program activities.</i></p> <p><i>7.3 Carry out and regularly update the Baseline Rural Sector Survey.</i></p> <p><i>7.4 Design and implement a mechanism to effectively monitor and evaluate the program activities.</i></p> <p><i>7.5 Carry out impact studies at local and beneficiary levels.</i></p>	<p>US\$4.0 M <i>(Phase I: US\$ 3.77 M)</i></p>	<p>a) Quarterly project progress reports;</p> <p>b) Supervision reports;</p> <p>c) Evaluation reports</p>	

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## **Annex 2: Detailed Project Description**

### **RWANDA: RURAL SECTOR SUPPORT PROJECT**

1. The main purpose of the Rural Sector Support Program (RSP) is to significantly contribute to the efforts of the Government of Rwanda to achieve its strategic goal of revitalizing the rural economy and thereby increasing rural incomes, reducing poverty, and reinforcing national stability. The proposed program and its mixture of interrelated and mutually reinforcing sets of activities are guided by the recognition that the most effective way to reduce poverty, and thus achieve the stability goal is to: (i) raise the productivity and (ii) expand the employment of resources that the rural poor own or depend on for their livelihood, primarily land and labor. The challenge of poverty reduction, therefore, goes beyond the improvement of overall agricultural sector performance over a certain period or that of given crops or sub-sectors in a more permanent manner. Significant poverty reduction can be achieved only through sustained and broad-based growth in the portions of the economy where poor people tend to be employed. Consequently, the efforts under the proposed program would have to extend beyond the agricultural sector to include support for off-farm productive activities in the rural areas. Agricultural intensification and diversification in this context is seen as the centerpiece of a growth process which is carried by the linkages between agriculture and the rest of the rural economy.

2. The above objective is to be achieved through the transfer of adequate financial and technical resources to local communities and economic operators in the rural areas to provide the technology, infrastructure, support services, and institutional capacity that are required for faster growth in the rural economy. These resources would induce the necessary adjustments in production and consumption patterns as well as in current technical practices that should pave the way to increased intensification and greater commercialization of the agricultural sector. Rwanda's potential for long-term rural growth is real, but looking at the level of agricultural technologies, the capacity of public and private R&D institutions, the quality of commercial infrastructure in rural areas, and the level of development of the off-farm sector, one realizes that it would take long-term efforts to effect any significant progress towards the objectives of revitalizing the rural economy. The proposed program, by seeking to mobilize the synergies and linkages between critical productive sectors and promoting rural technologies and building local infrastructure, should pave the way for long-term growth in the rural economy. It is expected that the technological, institutional, infrastructural, and financial support that would be provided through the program would stimulate productivity and output growth. Farmers would be induced to gradually move from producing for household consumption, as they currently predominantly do, to producing surpluses for the growing domestic market. Local distribution systems would respond and expand, providing new and expanded production and consumption opportunities for both agricultural and non-agricultural goods, thereby creating productive opportunities for economic agents within and outside of the agricultural sector. The outlined institutional and technological changes are imbedded in an evolutionary process, the pace and structure of which are not always fully predictable, not in any case in the current context of Rwanda's rural sector, the dynamics of which are not well understood and documented. Consequently, there are no clear and proven models and approaches of intervention to effect the implied transitions. All this limits the possibility of detailed ex-ante planning and design of the program of intervention.

3. Against this background, the proposed program has opted for an approach that reflects the strong need for long-term orientation, flexibility, and adjustability in terms of the time frame and structure of its operations. It would be implemented in three phases covering a total of 14 years. The first phase, which would go from 2001 to 2005, would focus on building the institutional and technical capacities that are needed to support the generation and adoption of efficient cropping and post-harvest technologies and set the stage for an acceleration of the pace of rural growth. The subsequent intermediary phase from 2006 to

2011 would deepen and broaden the program activities in order to accelerate the process of intensification and commercialization of agricultural production. Finally, the third and last phase from 2012 to 2017 would build on the stimulus resulting from faster growth in agricultural production to promote the diversification of economic activities in the rural areas and expand the productive employment of available resources. The proposed staggered approach would allow the program to expand its activities as experience is accumulated, the understanding of the working of the different systems in the rural economy expands, and the targeted beneficiaries develop new skills, adjust to new challenges, and exploit new opportunities. The incremental approach reduces risk and raises the likelihood of successful outcomes, as subsequent phases of the program are designed and implemented on the basis of lessons learned and results achieved from preceding activities.

**By Component:**

**Project Component 1 - US\$13.97 million**

**Rehabilitation of Farmed Marshland and Hill-side Areas - US\$13.97 million in Phase I (US\$79 million overall)**

4. Farmed marshland account for 12 percent of cultivated areas in Rwanda and are part of a production and ecological system that includes neighboring hill-sides. Only about 5 percent of farmed marshlands or 5,000 ha have ever been developed adequately to allow for improved farming practices. Of these, only 20 percent still have a somewhat decent infrastructure. Consequently, priority would be given during the current first phase of the program to the rehabilitation of the remaining 4,000 ha, excluding about 1,500 ha that are being rehabilitated under two IFAD-funded projects. In addition, MINAGRI has another 7,000 ha that have been improved marginally and are, therefore, still being farmed quite inefficiently. Technical assessment of most of the areas of about 9,500 ha has already been carried out and development plans prepared, following the inventory of marshland and watershed areas in 1993. A data bank has been set up, which contains detailed technical data sheets for most of these areas, including geographic location, population characteristics, size, hydrology, agro-climatology, pedology, lithology, and land use patterns.

5. The objective of the present component would be to establish effective mechanisms to: (a) facilitate the adoption by beneficiary farmers of efficient and sustainable technologies and practices to profitably manage marshland and hill-side crops; and (b) encourage and develop the skills of private operators to intervene in land and water infrastructure construction and maintenance. Farmed marshlands account for about 50 percent of the 165,000 ha marshland in Rwanda. The target under the current component would be to rehabilitate and develop the infrastructure on 25 percent of the currently farmed marshland, about 20,000 ha, over the 14-year period. These objectives would be achieved through the following activities: (i) financing of small-scale drainage and irrigation infrastructure on farmed marshlands; (ii) financing of soil and natural resources conservation R&D and infrastructure on marshlands and hill-sides; (iii) advisory services on cropping and water management technologies; (iv) training of farmer groups and other target private sector operators in construction, management, and maintenance of land and water conservation infrastructure; and (v) institutional support to producer organizations and community groups.

6. In the technical assessment that has been carried out during the preparation of the current project, marshland areas have been classified into 5 different types according to the type of small-scale irrigation work that needs to be carried out. The type of work that would be carried out in a given marshland would depend on: (i) the potential to profitably utilize the new infrastructure, which is linked to: (ii) the institutional and technical capacity of beneficiary farmers to grow high value crops; and (iii) their

willingness and ability to invest in infrastructure maintenance.

*Type 1 (Traditional).* This would involve simple infrastructure that is adequate for continued traditional exploitation of marshlands, consisting primarily of calibration works on a central canal to improve outflow of excess water;

*Type 2 (Improved).* Type 2 would include complementary work, normally as part of a multi-stage program to be implemented gradually, which would allow for better management and distribution of irrigation water. The infrastructure would include lateral canals on a traditional type marshland;

*Type 3 (Repair).* This would consist primarily in limited repair and reactivation of existing but damaged irrigation and drainage infrastructure, without adding new infrastructure;

*Type 4 (Rehabilitation).* This type of work would include extensive repair of entire irrigation and drainage systems that have deteriorated significantly over time;

*Type 5 (Modernization).* The final type would involve more elaborate irrigation and drainage infrastructure, including the construction of water harvesting and storage infrastructure to allow for better water distribution and multi-cropping.

7. Rehabilitation work on farmed hill-side areas would include two basic interventions: (i) progressive terracing, and (ii) radical terracing. The former would be considered only on slopes of less than 12 percent. Despite its relatively lower cost, the technical assessment has pointed out a number of disadvantages associated with progressive terracing, which should limit the extent to which the technique would be used. Radical terracing, on the other hand, would be used on slopes that are between 12 percent and 55 percent. Although it is more costly, this technique yields results more quickly and is more sustainable. Moreover, its impact on productivity is far superior. Results obtained under ongoing projects indicate a doubling of yields already during the first year of the establishment of radical terraces. The rehabilitation of farmed hill-sides areas would take place in connection with the rehabilitation of neighboring marshlands. It is expected that 30 ha of hill-side areas would be rehabilitated for every 50 ha of marshlands, yielding a total of 12,000 ha of hill-side areas for the 20,000 ha of marshlands by the end of the 14-year program. For the first phase, with an expected total area of rehabilitated marshlands between 4,000 ha and 6,000 ha, the size of rehabilitated hillside areas would range between 2,400 ha and 3,600 ha.

#### **Project Component 2 - US\$5.00 million**

##### **1.2. Integrated Management of Critical Ecosystems. US\$5 million in Phase I (US\$15 million overall).**

8. The primary objective of the proposed GEF activity, for which the RSP would serve as a baseline operation, is the conservation and sustainable use of natural resources through the integrated management of critical ecosystems, with emphasis on: (a) wetlands/watershed management; (b) dryland ecosystem management; and (c) reducing pressure on the Protected Areas through community-based management of the buffer zones (which presently only exist around Nyungwe Forest) and areas adjacent to the protected areas (mountain ecosystems). This component would be developed further into a parallel GEF operation to be finalized by MINITERE in collaboration with MINAGRI. Its objective would be accomplished through three main clusters of activities:

- (i) Creation of an enabling environment for sustainable resource use. GEF resources would initially focus on the conservation and wise use of wetland ecosystems. During the implementation of the GEF-supported components, policy, regulatory and institutional gaps and requirements for the

conservation and sustainable management of other critical ecosystems, particularly dryland and mountain ecosystems, would be identified. The activities under this sub-component would include: *development of a comprehensive National Wetlands Policy; preparation of a National Strategy and Action Plan for the conservation and sustainable use of wetlands; assessment of the biodiversity of critical wetlands and identification of wetlands of global significance and priority areas/hotspots for specific intervention; ratification by the Government of Rwanda of the Ramsar Convention; and technical assistance and training;*

- (ii) Development and implementation of community-based integrated management plans for critical ecosystems (wetland, dryland and mountain ecosystems). While the policy and institutional framework will be strengthened under the above sub-component, the development of integrated management plans for specific valley-bottoms and watersheds, working at field level in close collaboration with the local communities, would be the focus of this component. Depending on the results of the GEF PDF Block B, other critical ecosystems may be included as pilot activities. The proposed approach would be consistent with OP 12, which facilitates prioritization and sequencing of needed policy reforms and investment and other interventions. The project would also promote inter-sectoral and participatory approaches to natural resources management and planning on an ecosystem scale. The GEF resources would cover the incremental costs associated with controlling land degradation and incorporating biodiversity conservation (including agricultural biodiversity) objectives into the overall project's activities. The introduction of improved management and conservation practices in upland watersheds would provide multiple benefits, including the protection of inland, transboundary and international water resources, conservation of biological diversity, soil and water conservation as well as increase (soil) carbon sequestration. The specific activities under the present sub-component would include: *incorporation of conservation and sustainable management criteria in current land use, agricultural and environmental policies; demarcation and rehabilitation of degraded critical habitats and ecosystems of global significance; introduction of pilot activities testing sustainable resource management technologies to protect biodiversity and arrest land and water degradation; formulation of community-based management plans for critical habitats and adjacent areas; preparation of integrated plans to be implemented at farm and community levels for sustainable land management, soil fertility management, water conservation and management, and erosion control; preparation of one or more watershed-based integrated management plan(s) (development-cum-conservation); and identification of appropriate incentive measures to stimulate and maintain local and community participation and interest.*
- (iii) Creation of an Environment Information System (EIS) and a program for monitoring physical, ecological, and socio-economic changes in critical ecosystems of Rwanda. The specific target under this sub-component would be to develop an integrated environmental database and information system (EIS) which would facilitate the assembling and flow of information and data within Rwanda and internationally. The EIS would enable the creation, analysis, dissemination, and application of environmental data and information relating to natural resource management to meet the needs of decision-makers at national, regional and local levels, and for the benefit of a wide range of users. A reliable database would be used to support more informed and effective management decisions on a wide range of issues, such as sustainable agricultural production systems, wetlands conservation and management, biodiversity conservation, rangeland management, forest management, soil and water conservation planning, monitoring ecological changes and trends, ecosystem planning and management, among others. Potential users include ministries concerned with agricultural development, environmental and natural resources management, regional and local decision-makers, universities, research institutions, NGOs, donor community, and the general

public. Individual activities under the sub-component would include: *creation of a standardized, integrated, environmental information system and database; development of a program to monitor the changing condition of the natural environment, including physical, ecological and socio-economic changes in critical ecosystems of Rwanda; design of a clearing-house mechanism to facilitate information exchange and partnerships among the different stakeholders, including links to the Clearing-house Mechanism (CHM) of the UN Convention on Biological Diversity (CBD).*

- (iv) capacity-building and institutional strengthening at central, Prefecture, and local levels in integrated natural resources management. Since 1997, the Government of Rwanda has been in the process of decentralizing its public sector agencies, including those charged with environmental and natural resources conservation and use. GEF resources under the current sub-component would be used to target the GEF-funded components of the project, and fill gaps in technical expertise and training. Since the training and capacity-building activities of the RSP are still being elaborated, those that will be financed with GEF funds will be identified during the PDF Block B phase and will be closely coordinated with the RSP. Identification of the specific target audience will be dependent on the selection of RSP project sites. Linkages and collaborative training and environmental awareness-raising activities would also be developed with the UNDP GEF Protected Areas project. The specific activities to be carried out are the following: *participatory mechanisms for the sustainable use and management of natural resources; capacity-building and institutional support at the national, Prefecture, and local levels; and environmental and biodiversity awareness-raising/education at all levels.*

**Project Component 3 - US\$ 10.53 million**

**1.3. Promotion of Commercial and Export Agriculture. US\$10.53 million in Phase I (US\$13 million overall)**

9. The main objective under this component would be to raise competitiveness and expand output in the export sectors. The two main export sectors of Rwanda, coffee and tea, are currently going through important institutional changes. Both sectors are producing and exporting well below their potential. In addition, there are several private entrepreneurs who are trying to develop alternative export crops. The program would seek to reinvigorate the tea and coffee sectors and foster growth in the emerging export sub-sectors. This would be achieved through progress on three fronts: (i) higher productivity in production; (ii) lower unit cost and higher quality in the processing sectors; and (iii) greater access to export markets. With the ongoing reforms in the tea and coffee sectors, traditional export crop farmers would face the challenge of taking over the management of all commercial and technical activities that are currently the responsibility of the two parastatals in the tea and coffee sectors, respectively, OCIR-Thé and OCIR-Café. One cannot expect the private operators in these sectors to render the same services without compromising the commercial independence of private farmers and hence future profitability of tea and coffee production. Furthermore, both farmers and exporters are still learning the skills and techniques of producing and marketing the new export crops. The support that would be provided under the current component would allow farmers to: (i) raise productivity in the traditional export sectors; and (ii) acquire the necessary commercial and technical capacities to produce and market the new crops.

10. USAID is to undertake complementary activities to support the private operators willing to invest in the export of both the traditional and alternative export crops. The support to exporters would focus on the following areas: (i) market research and customer identification; (ii) access to pre-export finance; (iii) product development and quality and processing R&D; and (iv) business partnerships. Consequently, the planned support under the current project would consist primarily of technical advice to farmers on

cropping and post-harvest technologies and facilitation of access to resources for investment in technical infrastructure and commercial activities. That support would include: (i) provision of advisory services on production and post-harvest technologies to farmers and other private sector operators; (ii) financing of post-harvest R&D and infrastructure; (iii) technical advisory services and matching-grants to strengthen the capacities of export crop farmer organizations; and (iv) financing of technical assistance and capital investment to establish farmer-owned Commercial Enterprises and Technical Support Entities (CETSEs).

**Project Component 4 - US\$9.59 million**

**1.4. Support to Agricultural Services Delivery Systems. US\$9.59 million in Phase I (US\$13 million overall).**

11. In addition to infrastructure and a wide range of support services, there is an inescapable need to support agricultural research for guaranteeing an adequate provision of agricultural technology and to promote/sustain growth in the agricultural sector. The capacities of current research and extension institutions to generate and disseminate agricultural technologies are quite weak and need to be strengthened substantially. The proposed program would do this in line with: (a) the government's option for adaptive research; (b) the need to decentralize the system of services delivery; and (c) the necessity for considerably greater involvement of beneficiaries in the design and dissemination of farming technologies. The support should lead to a system that would: (i) be responsive to the needs of a wider range of clients; (ii) take into consideration the role that the private sector can play in providing support and added value to agricultural and livestock production; (iii) be more institutionally and financially sustainable in the medium- to long-run, and (iii) utilize regional and international collaboration more effectively.

12. Technology generation through adaptive research requires a minimum level of qualified researchers. There is, accordingly, a need for a critical mass of adequately trained scientists, covering a sufficiently broad range of disciplines and capable of constituting a sound interface with International Agricultural Research Centers and Sub-Regional and Regional networks. The proposed project would, accordingly, place emphasis on rebuilding the human, institutional and financial capacity of the national research system. It would also facilitate the transformation of the agricultural services delivery system into an open technology generation and transfer system which would link more efficiently research and extension and effectively exploit existing and potential national, regional and international sources of technology. Such a system would also mobilize extension agents as well as private sector operators, including SLOs, private R&D institutions, agribusiness companies, and farmers organizations to experiment or produce innovative farming technology systems. A rapid assessment of the research capacities has been carried out during appraisal and will be expanded to include a full external evaluation of ISAR's programs, management, and personnel. The assessment would also include an evaluation of the capacities of private sector operators to intervene in the context of the proposed participatory and demand-driven technology generation and dissemination system. This assessment would provide the needed elements for decision making on a targeted capacity building program and training/specialization or redeployment of existing staff or recruitment of new staff.

13. For the sake of long-term sustainability, the project would experiment with alternative mechanisms of cost recovery through partnerships between research/extension service providers and farmers organizations. It would also provide adequate resources to strengthen the capacities of farmers organizations to operate as credible partners to research and extension services providers. The project would test and adapt the Farmers Fields Schools (FFS), the methodology that is being supported by FAO in South and South-East Asia and more recently in Africa. The methodology would create, progressively, an environment where farmers are empowered through field-based participatory research and technology evaluation. It is also particularly suitable for the introduction of Integrated Production and Pest

Management (IPPM), which is expected to yield significant economic benefits for farmers while conserving the agricultural resource base and protecting the environment. The specific activities that would be carried out under the current component would include the following: (i) financial and technical assistance to strengthen the capacities of private and restructured lead public R&D institutions to borrow, adapt, and disseminate improved cropping, conservation, and post-harvest technologies; (ii) financial support and training of farmer organizations on techniques of participatory research and extension services delivery; and (iii) technical assistance to private operators willing to invest in services delivery activities.

**Project Component 5 - US\$9.81 million**

**1.5. Small-scale Rural Infrastructure Development. US\$9.81 million in Phase I (US\$13 million overall)**

14. Reducing the unit cost of moving goods across space and over time is as important to the objectives of commercializing and increasing the competitiveness of Rwanda's agriculture as is the reduction of production costs. Although they do not constitute yet the most serious obstacle to agricultural output expansion and intensification in Rwanda, it would not be long before the quality of local transport systems would become a major constraint to efforts of accelerating growth in the agricultural sector. Hence, the first objective of the current phase would be to upgrade and expand small-scale transport infrastructure in the rural areas. Rwanda has a total network of 12,000 km of roads, about half of which (6,650 km) consist of communal roads. With the recent reform of the ministry of public works, the Government of Rwanda is moving towards decentralization of road maintenance work, coupled with sub-contracting to the private sector. Accordingly, the new Directorate of Roads (DR) does not carry out construction or maintenance any more but focuses on planning, supervision, and control of infrastructure works. Similarly, procurement for road construction and maintenance has been transferred to local administrations. A Road Maintenance Fund (RMF) has been created to finance the maintenance of the national road network. The maintenance of communal roads, on the other hand, is the responsibility of local administrations. Under the current component, the project would work with DR to provide institutional, technical, and financial support to CDCs to plan and implement small road improvement and maintenance sub-projects. DR's role would be limited to the control of norms and guidelines and the provision of institutional support for quality control and supervision as well as training, all of which should be based on the demand by CDCs.

15. In addition to poor infrastructure, the potential to stimulate agricultural production as well as other economic activities in rural areas and thereby achieving the goal of revitalizing the rural economy is also being undermined by the rarity of adequate transport equipment in the farming sector. That potential is further being constrained by the significantly high cost of transferring agricultural products from one season to the next. From the point of view of the intensification objective, the cost of moving goods over time can be as important as that of transporting them across space. Current estimates indicate that as much as 25 percent to 30 percent of harvested quantities are lost due to inadequate post-harvest technologies. Therefore, the component's second objective would be to facilitate both the access to adapted post harvest infrastructure as well as Appropriate Means of Rural Transport (AMTs). Given its local specificity, the necessary development and improvement of transport infrastructure would have to be planned and implemented at the local level. Furthermore, it would be important to ensure that the AMTs and post-harvest infrastructure that are introduced can be serviced locally in a technically satisfactory manner. Consequently, the third objective would be to create the capacities among local communities and in the private sector to construct and/or maintain the transport equipment and infrastructure in question. The activities to achieve the above outcome would be the following: (i) institutional and financial assistance to support the Community Development Committees (CDCs) to plan and implement the conservation and transport infrastructure development and maintenance activities; (ii) technical assistance to private

operators willing to invest in conservation, post-harvest, and transport infrastructure construction and maintenance activities; (iii) financial assistance to farmer groups for the acquisition of post-harvest infrastructure and AMTs; (iv) technical assistance to private operators for the construction and/or maintenance of AMTs.

**Project Component 6 - US\$0.34 million**

**1.6. Promotion of Off-farm Productive Activities in Rural Areas. US\$0.34 million in Phase I (US\$10 million overall)**

16. A strategy to revitalize the rural economy and reduce poverty in rural areas and the rest of the economy would have to exploit to the maximum the synergy and linkages between agriculture and other productive sectors in rural areas. The main sub-sectors are food processing and beverages carpentry and sculptured products; basketry; ceramic arts and pottery, including bricks and tiles; and metal works, forge, and jewelry. A recent survey by the Ministry of Commerce and Industry indicates that off-farm activities employ about 13 percent of Rwanda's population and account for 5 percent of GDP. Furthermore, exports from that sector have grown threefold between 1995 and 1998. Faster growth in these sub-sectors would fuel demand for food and other agricultural products, thereby raising the incentives for output expansion and injecting additional resources into the sector that would raise the capacity of farmers to invest in productivity-raising technologies.

17. The above interrelationships are not trivial and should receive maximum attention in the design and implementation of the program activities. Not only are they crucial to sustain growth in the agricultural sector, they also ensure that income growth and poverty reduction are shared broadly in the rural areas. Accordingly, the objectives that would be pursued under the current component would be the following: (a) the creation of additional employment and incomes and thus a direct contribution to the poverty reduction objective; (b) the expansion of the effective demand for food and other agricultural goods and, hence, the stimulation of production; and (c) greater responsiveness of the supply of locally produced off-farm goods. The latter objective is important in order to avoid a situation in which the increased demand for these goods that would result from higher agricultural productivity and incomes would be translated into higher prices, which, in turn, would not only reduce the real value of added agricultural incomes but would also ultimately lead to higher agricultural wages. Both would have negative implications in terms of slowing down the pace of intensification and commercialization of agriculture. The activities through which these objectives would be realized are: (i) preparation and piloting of local off-farm development strategies; (ii) financing of R&D for selected off-farm production activities; (iii) training in enterprise development and management; and (iv) provision of seed-funding and facilitation of access to investment credit.

**Project Component 7 - US\$3.77 million**

**1.7. Program Support and Coordination. US\$3.77 million in Phase I (US\$4.0 million overall)**

19. Given the local nature of many of its proposed interventions, the various phases of the program would be implemented in a decentralized way in order to ensure relevance and sustainability. The decentralized format of the project's implementation as well as the necessary involvement of several government agencies require that great attention be given to the need for effective implementation and coordination of all program activities. Fortunately, the project would benefit greatly from the lessons learned and the arrangements that have been successfully tested under CRDP. A Program Support and Coordination Unit (PSCU) would be set up within MINAGRI to serve as the technical arm of the Program Advisory Committee (PAC) that would be chaired by MINAGRI and would include representatives from the Ministry of Finance and other technical ministries as well as representatives of local administrations, the private sector, and farmer associations. In addition to the overall management of program activities,

the PSCU would provide and/or coordinate the necessary technical and institutional support to beneficiary groups and local communities to effectively implement and monitor their respective sub-projects. The three sets of activities that are planned to this effect would include: (i) establishment of a Project Support and Coordination Unit, including a Monitoring and Evaluation Division; (ii) design and implementation of a mechanism to effectively coordinate the program activities; and (iii) design and implementation of a mechanism to effectively monitor and evaluate the program activities, including a Baseline Rural Sector Survey (BSSR) in the first year and to be updated by the end of Year 4 of the first phase.

20. Close monitoring and regular evaluation of program activities are of critical importance for any project but more so for one that is based on decentralized implementation. Accordingly, a separate component would be devoted to these tasks. A special sub-unit would be set up within PSCU, the Monitoring and Evaluation Division (MED), which would coordinate the overall M&E activities and provide the necessary support to executing agencies and beneficiary groups to carry out the necessary M&E activities at their respective levels. The following activities are planned to ensure effective monitoring and evaluation of program activities: (i) carry out and regularly update the Baseline Rural Sector Survey; (ii) design and implement a mechanism to effectively monitor and evaluate the program activities, both centrally and at the level of individual executing agencies and beneficiary groups; and (iii) carry out impact studies at local and beneficiary levels. Detailed procedures for M&E are described in the Project Implementation Manual (PIM) and would be complemented with a Program Monitoring Guide that would be completed before effectiveness.

#### **Proposed Mechanisms to Finance Community-driven Subprojects**

21. The proposed decentralization of the project's implementation for the sake of ownership and sustainability requires that appropriate instruments be found to channel financial resources to the various beneficiaries, including farmers, private and public R&D institutions, private entrepreneurs, and local communities to implement sub-projects under several of the project's components. For that purpose, it is proposed to establish three types of funding facilities that would provide competitive grants to finance sub-projects that would be prepared and implemented by beneficiary groups and partner agencies (BPA). Partner Agencies are: (i) any government institution, (ii) private sector operator, or (iii) Specialized Local Organization (SLO), that is technically qualified to assist local beneficiaries in the preparation, implementation, and supervision of sub-projects. The proposed Facilities are: a Local Infrastructure Facility (LIF); a Rural Investment Facility (RIF); and a Rural Technology Facility (RTF). The facilities are operational mechanisms to finance specific clusters of activities across individual program components that can be implemented more efficiently by beneficiary groups and partner agencies (BPA). For instance, in order to implement certain activities under the export promotion component as well as the rural infrastructure development and agricultural services components, BPA would have to undertake specific investments which will require them to mobilize the necessary funding. Through the Rural Investment Facility (RIF), financial assistance would be provided through matching grants and investment cost subsidy to eligible beneficiaries who will prepare and submit sub-projects under any of the above components to the Facility. Detailed sub-project cycles and the eligibility criteria for each of these facilities are presented in the PIM.

22. *The Local Infrastructure Facility (LIF)* would provide matching grants to beneficiaries to undertake infrastructure sub-projects under the different program components. These sub-projects would involve public goods such as roads and bridges or commercial goods of collective use, which have significant external positive effects, such as market infrastructure. Eligible local administrations and community-based groups (CBG) would prepare and submit sub-project proposals to PSCU, which upon its approval, provide funding to these beneficiaries to implement the approved sub-projects. Given the

limited capacities of certain beneficiary groups, PSCU would work with technical ministries, in particular through their local branches, to provide the necessary institutional and technical support. Beneficiaries could also directly or through PSCU contract the services of private sector operators and/or specialized local organizations (SLOs) to implement the sub-projects. Activities to be financed by the Facility would include: (i) soil and water resources conservation infrastructure on farmed marshlands and hill-sides; (ii) transport infrastructure development and maintenance activities; and (iii) post-harvest and other export and marketing cost-reducing infrastructure. Simplified application procedures and approval criteria will be presented in a Beneficiary Group Manual (LIF-BGM), which would be translated in Kinyarwanda and made available before project effectiveness. The total IDA resources allocated to the LIF would be \$9.17 M. It is assumed that the great majority of sub-projects would cost less than \$75,000. IDA approval would be required for individual sub-projects which cost more than \$75,000.

23. *The Rural Investment Facility (RIF)* would provide financial incentives through investment cost subsidy to qualified private sector operators, including farmer groups, willing to invest in activities with substantial economic or environmental externalities. For instance, investment by private entrepreneurs in value-adding activities in the processing and conservation sectors would generate collective benefits in terms of alleviating the demand constraint facing the agricultural sector and providing incentives for the intensification of crop and livestock production activities, a major objective of the government's rural development strategy. The RIF would finance sub-projects in the following activity areas: (i) the operation of farmer-owned Commercial Enterprises and Technical Support Entities (CETSEs); (ii) processing, conservation, and trading of crop, livestock, and forestry products; (iii) transport infrastructure construction and maintenance activities; (iv) acquisition of Appropriate (adapted) Means of Rural Transport (AMT) by crop, livestock and forestry farmers to be tested under pilot activities; (v) investment by private operators in the construction and/or maintenance of AMTs and transport infrastructure; (vi) investment by private operators in agricultural services delivery activities; and (vii) selected pilot off-farm productive activities.

24. IDA resources allocated to the RIF would amount to \$8.07 M. These resources would be used to provide financial assistance and incentives through investment cost subsidy to private operators, including farmer groups, that are willing to invest in eligible agriculture-related activities. The resources would be channeled through the banking sector to ensure that it goes to entrepreneurs who would be helped thereby to qualify for and obtain loans from commercial banks. The RIF would operate in the following way: once a commercial bank has agreed to provide a loan to an eligible beneficiary to finance an eligible agribusiness undertaking, the Facility would provide: (i) up to 40 percent of the loan for a total loan amount not exceeding the equivalent of US\$100,000; and (ii) up to 20 percent or US\$100,000, whichever is less, for a loan amount above the equivalent of US\$100,000. The RIF portion of the loan would be given under the same conditions as the commercial bank portion. Whenever the entrepreneurs make a payment, the RIF portion of the payment is used to further reduce the commercial bank's portion of the loan principal, after deduction of commissions for the lending bank and BNR to cover their administrative costs for managing and supervising the RIF portion of the loan. The commission of the lending bank would be based on: (i) the interest rate margin that is applied by the financing bank; or (ii) any other commission agreed upon by BNR, the government, and the lending bank, and specified in the participating agreements to be signed between BNR and the commercial banks. The payment to BNR would be based on a rate to be applied on the outstanding balance of each subloan and which is equal to: a) the weighted twelve-month average of the applicable money market rate or the average inflation rate over the preceding calendar year, whichever is lower; or b) such other reference rate as may be determined by agreement between the Borrower and BNR and satisfactory to the Association, plus a fee not to exceed one percent (1%). The one percent (1%) fee goes to BNR and the remainder goes to government.

25. The RIF would have the following benefits for the commercial bank: (i) it reduces its risk by covering a part of the loan; (ii) gives it access to additional resources; and (iii) ensures repayment of part of its loan principal. The benefits for the entrepreneurs include: (i) facilitation of access to bank financing; and (ii) subsidization of their investment cost in the amount of the RIF portion of the loan and the saved interest payments over time. The advantage of this mechanism is that the commercial bank has to collect the payment on the RIF portion of the loan in the first place before it can be used to pay down its loan principal. This does not only eliminate any moral hazard but also provides an incentive for the commercial bank to screen its clients and ensure repayment of the RIF portion. Similarly, the entrepreneurs cannot enjoy the reduction in their loan principal unless they repay the RIF portion. Due to the fact that the subsidy is applied to their principal and not available to them directly, it does not interfere with their incentive to manage efficiently and generate profit to repay the loans.

26. A Special Account would be opened at BNR to receive resources to finance the RIF activities. The account would be managed by BNR, which would make payments to the accounts of the financing commercial banks to reimburse the latter for the amounts equivalent to the RIF portions of the loans given to eligible investment projects. Once a payment is made by a client, BNR would authorize the lending commercial bank to apply to corresponding amount against its portion of the loan principal. BNR would sign a participation agreement, satisfactory to IDA, with each participating bank and which would lay out the procedures for the operation of the Facility. In addition to the eligibility criteria that are specified in the PIM, sub-projects must satisfy application procedures and approval criteria of the lending commercial banks to receiving RIF funding.

27. *The Rural Technology Facility (RTF)* would be the main vehicle to establish and support participatory agricultural services delivery systems. It would provide matching grants to: (a) build the institutional, commercial, and technical capacities of farmer groups; and (b) strengthen the capacities of agricultural research and extension systems in order to generate and extend improved technologies to farmers and enhance the delivery of services. Given the very weak capacities in the research systems, the first phase would include the: (i) rebuilding of ISAR's research and analytical capacities; (ii) training of scientists, and (iii) building the capacities of lead research and extension services to involve farmers and private operators in the generation and dissemination of cropping, animal husbandry, and post-harvest and dairy technologies, in addition to: (iv) institutional support and grants to farmer groups to procure and participate in research and extension services; (v) matching grants to private operators to invest in services delivery activities; and (vi) R&D for selected pilot off-farm productive activities.

28. ISAR is currently preparing a strategic plan to be adopted before project implementation. The Plan would provide the basis for support through the RTF. Up to 20 percent or \$1.6 mill of total RTF resources of \$8.25 M would be earmarked to rebuild minimum capacities at ISAR. Given the government's decision to privatize and liberalize the tea and coffee sectors, the support to farmer groups would include funding for the establishment of CETSE by qualified farmer groups, which would: (i) fill the void left by the withdrawal of OCIR-THE and OCIR-CAFÉ and provide commercial and technical support to farmers in the tea and coffee sectors; (ii) extend that concept to other, non-traditional export crop sectors; and (iii) accelerate the commercialization of priority crops, such as rice and maize. Up to 30 percent of the Facilities resources or \$2.4 M would be used for that purpose. The remaining \$4.0 M would provide competitive matching-grants to finance eligible sub-projects. Once its capacities have been strengthened, ISAR would have to compete for funding from the Facility by preparing and submitting sub-projects. Eligible RTF beneficiaries would include public and private sector R&D institutions, private sector operators, and farmer groups. These groups can submit sub-projects individually or jointly. Sub-projects that involve farmer participation would be given preference. Simplified application procedures and approval criteria will be presented in a Beneficiary Group Manual (RTF-BGM), which would be translated in Kinyarwanda and made available before project effectiveness.

**Table 1: Project Activities to be funded through the LIF, RIF, AND RTF**

<b>Facilities</b>	<i>Component 1</i>	<i>Component 3</i>	<i>Component 4</i>	<i>Component 5</i>	<i>Component 6</i>
	<b>Rehabilitation of Farmed Marshland and Hillside Areas</b>	<b>Promotion of Commercial and Export Agriculture</b>	<b>Support to Agricultural Services Delivery Systems</b>	<b>Small-scale Rural Infrastructure Development</b>	<b>Promotion of Off-farm Productive Activities in Rural Areas</b>
<b>Local Infrastructure Facility (LIF)</b>	Soil and water resources conservation infrastructure	Construction and maintenance of marketing/export cost-reducing infrastructure		Transport infrastructure development and maintenance activities	Construction and maintenance of post-harvest infrastructure
<b>Rural Investment Facility (RIF)</b>	Operation of farmer-owned Commercial Enterprises and Technical Support Entities(CETSEs)  Investment in processing, conservation, and trading of crop, livestock, and forestry products	Operation of farmer-owned CETSEs  Investment in processing, conservation, and trading of crop, livestock, and forestry products	Investment in services delivery activities by private operators	Transport infrastructure construction and maintenance activities  Acquisition of post-harvest and dairy infrastructure  Acquisition by farmers of AMT to be tested under pilot activities  Investment by private operators in the construction and/or maintenance of AMT and transport infrastructure	Selected pilot off-farm productive activities

<b>Rural Technology Facility (RTF)</b>	Establishement of farmer-owned CETSEs	Establishement of farmer-owned CETSEs	Rebuilding of ISAR's research and analytical capacities, including training  Participatory research by private and lead public R&D institutions  Procurement of research and extension services through farmer organizations  Agricultural services delivery activities by private operators		R&D for selected off-farm production activities
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**Annex 3: Estimated Project Costs**  
**RWANDA: RURAL SECTOR SUPPORT PROJECT**

<b>Project Cost By Component</b>	<b>Local US \$million</b>	<b>Foreign US \$million</b>	<b>Total US \$million</b>
1. Rehabilitation of Farmed Marshland and Hillside Areas	7.98	5.08	13.06
2. Integrated Management of Critical Ecosystems	2.54	1.63	4.17
3. Promotion of Commercial and Export Agriculture	5.84	3.74	9.58
4. Support to Agricultural Services Delivery Systems	5.32	3.40	8.72
5. Small-scale Rural Infrastructure Development	5.45	3.46	8.91
6. Promotion of Off-farm Productive Activities in Rural Areas	0.18	0.12	0.30
7. Program Monitoring, Support and Coordination	2.03	1.31	3.34
<b>Total Baseline Cost</b>	29.34	18.74	48.08
<b>Physical Contingencies</b>	0.82	0.43	1.25
<b>Price Contingencies</b>	3.48	2.37	5.85
<b>Total Project Costs</b>	33.64	21.54	55.18
<b>Total Financing Required</b>	33.64	21.54	55.18

<b>Project Cost By Category</b>	<b>Local US \$million</b>	<b>Foreign US \$million</b>	<b>Total US \$million</b>
(1) Grants (LIF and RTF)	10.09	7.32	17.41
(2) Subloans (RIF)	4.20	3.86	8.07
(3) Civil works	9.04	5.64	14.68
(4) Goods	0.35	0.36	0.71
(5) Consultants' services, Studies, Surveys, Training and Audits	3.82	2.66	6.48
(6) Operating costs	1.17	0.00	1.17
(7) Refunding of Project Preparation Advance	0.27	0.29	0.56
(8) Beneficiary	1.10	0.00	1.10
(9) Global Environmental Facility (GEF)	3.59	1.41	5.00
<b>Total Project Costs</b>	33.64	21.54	55.18
<b>Total Financing Required</b>	33.64	21.54	55.18

<sup>1</sup> Identifiable taxes and duties are 0.57 (US\$m) and the total project cost, net of taxes, is 49.61 (US\$m). Therefore, the project cost sharing ratio is 96.75% of total project cost net of taxes.

**Annex 4: Cost Benefit Analysis Summary**  
**RWANDA: RURAL SECTOR SUPPORT PROJECT**

[For projects with benefits that are measured in monetary terms]

	Present Value of Flows		Fiscal Impact	
	Economic Analysis	Financial Analysis <sup>1</sup>	Taxes	Subsidies
<b>Benefits:</b>	Frw 49,394 US\$127	Frw 56,874 US\$146		
<b>Costs:</b>	Frw 24,600 US\$63	Frw 24,600 US\$63		
<b>Net Benefits:</b>	Frw 24,794 US\$64	Frw 32,274 US\$83		
<b>IRR:</b>	100	47		

<sup>1</sup> If the difference between the present value of financial and economic flows is large and cannot be explained by taxes and subsidies, a brief explanation of the difference is warranted, e.g. "The value of financial benefits is less than that of economic benefits because of controls on electricity tariffs."

**Summary of Benefits and Costs:**

1. The results of the financial and economic analysis are based on the main component of the project, Rehabilitation of Farmed Marshlands and Hillside Areas, which consumes about one third of the planned resources. The analysis focuses on this component, because it is the only one that is implemented with direct implication by the Project Support and Coordination Unit. Other components are planned to be designed and implemented on a demand-driven basis. Their exact nature is, therefore, not identifiable enough beforehand, in order to allow for a proper analysis. For the present purpose, it is worth recalling that typically farms in Rwanda consist of marshlands and hillsides with an average size of 0.94 ha. Of the 164,947 ha of surveyed marshlands, 93,754 ha are farmed. The project aims to modernize 50 percent of the farmed marshland, or about 40,000 ha over a period of 14 years. During the first phase (2001-2005), 6,000 ha will be developed along with 15,000 ha of related hillsides. Soil fertility and erosion control on the latter will be enhanced by the application of so-called progressive terracing techniques, while waterworks of different degrees of sophistication will be established or rehabilitated in the marshlands. Based on the agricultural engineering and agronomic analysis that accompanied the current study, 6 farm models are considered:

- (i) Traditional marshland (code-named TT) with simple drainage waterworks. Initial cost: 155,600 Frw (US\$400 the 389 Frw = US 1) per ha and 6,613 Frw (US\$17) annual recurrent costs.
- (ii) Improved waterworks (type A) with drainage and individual (pedal) pumps. Initial cost: 505,700 Frw (US\$1 300) per ha and 8,363 Frw (US\$21.5) recurrent annual costs.

- (iii) Modern type waterworks (M) comprising a dyke with gravitation irrigation. Initial cost: 778,000 Frw (US\$2,000) per ha and 9,725 Frw (US\$25) recurrent annual costs.
- (iv) One-season rice farm on marshlands without reservoir and with costs similar to type A's (2) above.
- (v) Two-season rice farm on marshland with a dyke allowing for irrigation by gravitation. The costs are similar to type M's (3) above.
- (vi) Hillside crop farming with progressive terracing and a cattle unit (3 Ankole cows). Investment costs: 243,140 Frw (US\$625 ) per ha.

2. It should be mentioned that farm models 1-3 above focus on vegetable production, and that the one-season and two-season rice models also grow vegetables part of the cropping year. These include beans, green beans, green pepper, cabbage, celery, eggplant, amaranth and tomatoes. Maize and sweet potatoes are also important marshland crops.

3. For hillside farming with progressive terracing (model 6), selected crops are sorghum, beans, soybeans, maize, groundnuts, sweet potatoes, Irish potatoes, cassava, banana and coffee. Leguminous plants such as sesbania and leucaena are included to enhance soil fertility and erosion control. The livestock unit will produce meat, milk and manure.

4. As indicated in previous reports, Rwanda's agriculture is characterized by low productivity and scarcity of resources, notably a low utilisation of such inputs as chemical fertilizers, improved seeds, mechanization and animal traction. This will be reflected in the without-project situation. Technological improvements being proposed with the project are rather of the simple, low-cost type. They may involve just changing the cropping pattern by moving less financially valuable crops, such as sorghum, from the marshlands to the hillsides and planting more valuable vegetable and cereal crops in the marshlands where their yields normally double compare with hillside farming. The mere shift from the dwarf (bush) bean to the climbing (pole) bean can increase bean production by over 60 percent on the hillsides and 85 percent in the marshlands. Waterworks regulate water supply in the marshlands, making it available to crops in optimal quantities; A and M type waterworks allow for irrigation and an additional cropping season between June and September. This increases cropping intensity and farm income. Fertilizer, urea and lime are proposed when required to improve soil fertility.

### **Economic Analysis**

5. Economic calculations take into account not only farm-level investments and recurrent costs, but also project-level costs relating to rural road construction and maintenance, monitoring and evaluation, and agricultural support services. The results of the analysis show economic indicators which are highly positive like those in the financial analysis. Net Present Values range from 1,011,000 Frw for the hillside farm with a cattle unit to 2,795,000 Frw for the marshland vegetable farm with just a simple drain. Corresponding IRRs vary from 34 to 184, while benefit costs ratios for the 6 farms average 2.5.

6. Not all the economic benefits accruing to farmers and the society at large could be fully appraised in the present analysis. The major ones likely to be brought about by project implementation are people's participation in decentralised rural development through the formation and/or strengthening of rural associations, increased farm incomes and enhanced food security, the adoption of environment-sustaining farming techniques and the provision of needed rural infrastructures.

## Financial Analysis

7. With such overall modest investments and operating costs leading to substantial increases in yields, it should not be surprising that financial and economic indicators are on the high side. Returns per family day of labor have usually doubled or tripled in the models concerned compared with the reference situation. They range from 1,140 Frw in the Traditional (TT) marshland to 2,790 Frw on the hillside with a cattle unit at the eighth (cruising) year of the project. This is far above the 300 Frw going wage for unskilled agricultural labor. The figures in the tables below confirm the financial attractiveness of the 6 farm models, as the IRR varies from 30 percent in the case of hillside farming to 116 in the Traditional (TT) marshland. Net Present Values (NPV) for their part range from 1,359,400 Frw in hillside crop farming to 9,052,600 Frw in the marshland with waterworks Type A (drainage and pedal pumps). Benefit cost ratios average 1.9.

### Main Assumptions:

8. If the area of marshlands and related hillsides to be developed or rehabilitated during the first phase of the project is now known to be 6,000 ha and 15,000 ha, respectively, their exact location is still to be specified. It is, therefore, not possible to come up at this time with an actual costing of this first phase, because no blanket recommendations can be made as to the type of waterworks needed for each marshland. Rather, the agricultural engineering report provides a range of waterworks costs, the minimum of which is US\$400, and the maximum US\$2,500 on the basis of previous studies and ongoing marshland development projects in Rwanda. Still, to get an idea of the likely maximum cost and associated benefits of this first phase, it is assumed that all the 6,000 ha of marshland will be equipped with type M waterworks with initial costs of 778,000 Frw (US\$2,000) per ha and that the 15 ha of related hillsides will be rehabilitated with progressive terracing and cattle units costing 243,140 Frw (US\$625) per ha as stated earlier. Weights assigned to farm model types in the calculations are based on the relative importance of their investment costs. The ensuing cost benefit summary is provided in Table 4 below.

9. Commodity and input prices as well as other data used to prepare crop and farm budgets were collected essentially at farm level during the June-July 2000 World Bank/FAO mission to Rwanda. They have been checked and updated during a follow-up mission in October-November. Staff of various ministries, notably the Ministry of Agriculture, Animal Resources and Forestry and the Ministry of Finance and Economic Planning, national consultants, private sector operators and farmers met, have provided valuable assistance and advice in this endeavour. Some 50 crop and activity models as well as 6 farm models have been elaborated.

10. For financial analysis, the following assumptions were made: 12 percent discount rate, 20 years time frame, price index set at 1 for the period, and the official exchange rate at 389 Frw for US\$1 (June 2000). There being no long-term capital market in Rwanda, the 12 percent discount rate has been selected on the basis of experience and practice in similar countries. The financial results given above are those obtaining after financing at 12 percent.

11. To compute economic prices, including wages for unskilled labor, a conversion factor of 0.87 has generally been used. For imported inputs, such as fertilizers and rural infrastructure, a conversion factor of 0.96 has been applied to reflect their higher foreign exchange content. It should be mentioned that officially taxes and duties on agricultural products and inputs have been abolished since May 2000.

12. The share of rural infrastructure costs attributable to the first phase of the agricultural component of the project has been computed on the basis of the project budget allocation and agriculture sector contribution to GNP. Cost estimation for monitoring and evaluation as well as agricultural support services takes into account the importance of the area (marshlands + hillsides) to be developed during the first phase of the project in relation to total agricultural land.

13. The implicit but nonetheless bold assumptions behind crop and farm models are that farmers will duly apply the technologies proposed and achieve the expected yields; that there are few or no post-harvest losses and that the market system is efficient enough to offer the producer at least the prices used in the analysis. These conditions are far from being fulfilled, but they figure prominently among the project's objectives which include boosting consumers' purchasing power through off-farm income generating activities and agricultural export promotion. Bearing this in mind and considering that the first two years of the project will be devoted to preparatory activities such as project staff recruitment and training, strengthening of rural associations, establishment of a financing mechanism to ensure timely input supply, construction/rehabilitation of waterworks in the marshlands, it has been assumed that most productions in the with-project situation will start only during the third year for marshland farming and that such productions should be linearly spread over 5 years before they reach optimal levels (i.e., at the 8th year of the project). For hillside farming, with-project production would usually start during the second year, safe for livestock products as meat and milk sales begin only in the third year.

#### **Sensitivity analysis / Switching values of critical items:**

14. The switching values/sensitivity analysis show that financial revenues at farm level should fall an average of 40 percent or total costs (investment plus recurrent) increase by 87 percent to reduce the NPV to zero. Likewise, switching values for the economic analysis are high and further underscore the attractiveness of the investments.

15. It should be noted that for rice, a strategic crop from the government's view point, both economic and financial results appear encouraging (with IRRs averaging 42 percent and 35 percent, respectively, albeit, they are well below those observed in the first three marshland models growing vegetables essentially. In the case of one-season rice model, financial switching values are -26 percent for farm income and 35 percent for farm costs; corresponding values for the two-season model are -23 percent and 30 percent. These levels of switching values may appear rather close to the cut-off point regarding project decision, particularly where low-input, small-scale farming is concerned. Indeed, sudden pest infestation, an uncontrolled plant disease, a sharp fall in output prices due to increased foreign competition or misguided food aid, a hike in fertilizer prices, can well reduce income or increase costs substantially. Changing paddy farm-gate price of 100 Frw/kg used in the above analysis to 80 Frw/kg yielded switching values of -21 percent for farm income and 26 percent for farm costs with a 31 percent IRR in the financial analysis of the one-season rice farm; corresponding figures for the two-season rice farm were also -13 percent, 14 percent, and 23 percent for the IRR. The fact that switching values remained on the safe side despite a 20 percent decrease in the farm-gate price of paddy could in part be attributable to vegetable production in the rice farm models. This seems more evident in the case of the one-season rice farm, which grows vegetables mostly two seasons out of three and for which indicators exhibit relatively higher values.

**Table 1. Economic Evaluation of Six Farm Models (1 ha Standard Size)**

Farm Model	Farm Costs (Appraisal Value) Frw '000	On-Farm Income		Switching Values		IRR (%)	N.P.V. Frw '000	Benefit Cost Ratio
		Without Project Frw '000	With Project Frw '000	Farm Income (%)	Farm Costs (%)			
Waterworks Type TT Simple Drainage	1,194	106	592	-70	234	184	2,795	3.3
Waterworks Type A : Drainage + Pedal Pumps	3,133	101	1,498	-71	247	201	7,742	3.5
Waterworks Type M : Dyke + Irrigation by gravitation	2,817	108	1,526	-73	273	145	7,697	3.7
1 Season Rice Farm : No reservoir	3,093	108	501	-36	58	45	1,565	1.6
From 1 to 2 Season Rice Farm + reservoir	3,204	275	726	-33	49	39	1,581	1.5
Hillside Crop Farming + Progressive Terracing + Cattle Unit	2,158	202	608	-32	47	34	1,011	1.5

**Table 2. Financial Evaluation of Six Farm Models (1 ha Standard Size)**

Farm Model	Farm Costs (Appraisal Value) Frw '000	On-Farm Income		Switching Values		IRR (%)	N.P.V. Frw '000	Benefit Cost Ratio
		Without Project Frw '000	With Project Frw '000	Farm Income (%)	Farm Costs (%)			
Waterworks Type TT Simple Drainage	2,345	295	954	-59	142	116	3,357	2.4
Waterworks Type A : Drainage + Pedal Pumps	6,483	282	2,075	-58	140	105	9,102	2.4
Waterworks Type M : Dyke + Irrigation by gravitation	6,013	295	2,110	-61	155	88	9,000	2.5
1 Season Rice Farm : No reservoir	5,522	295	847	-26	35	37	1,943	1.4
From 1 to 2 Season Rice Farm + reservoir	6,633	545	1,139	-23	30	32	1,974	1.3
Hillside Crop Farming + Progressive Terracing + Cattle Unit	4,343	364	796	-24	31	30	1,359	1.3

### Long-Term Competitiveness of Priority Crops

16. In an attempt to diversify its agricultural production base in order to achieve broad-based economic growth and reduce poverty, the Government of Rwanda (GOR) has embarked on an exercise to assess the competitive position of its agricultural commodities. The aim objective of the exercise is to evaluate agricultural potential, identify the constraints to achieving this potential and propose measures designed to alleviate them. In doing so, a few commodities, including dry beans, maize, sorghum and rice, are selected. The rationale underlying this selection is articulated around their: (a) high nutritional value to make up for the population's deficiency in protein and carbohydrates; (b) importance in the cropping pattern of the country and adaptability to the country's agro-climatic conditions; (c) potential to respond to organic and chemical inputs designed to shift the supply function, expand production and enhance income; and (d) job creation potential to induce a trickle-down effect on the national economy.

17. Using time series data of production parameters, the study reveals that the performance of the above-mentioned commodities over the period 1980-99 has been disappointing. For nearly all the commodities, domestic supply appears to have declined over the period of interest. The dwindling production results from both a reduction in cultivated area and a decline in on-farm productivity, raising the issue of the root causes of the worsening of the production parameters. While the reduction in area may be rooted in declining on-farm profitability, the poor performance of productivity may be attributed to declining soil fertility resulting from population pressure causing a shortening of the fallow periods compounded by the lack of chemical and organic fertilizer use. The declining trend over the period 1980-99 disguises, however, wide disparities across periods. While the period 1980-89 does not reveal any noticeable pattern, that covering 1990-99 is characterized by a sharp decline in production parameters.

18. One of the consequences of the agricultural performance appears to be an excess demand for the above-mentioned commodities. According to the preliminary results of the supply and demand projections, demand will continue to outpace supply in the long run if current trends persist, calling for vigorous efforts from the Government to reverse the situation. Particularly important in reversing past trends is the need to put in place an environment conducive to private sector investments for greater supply response. The GOR has taken bold steps to improve the incentive framework by exempting agricultural inputs and exported output from duties and taxes and withdrawing itself from key productive activities. Notwithstanding Government actions, it needs to deploy additional efforts to deepen the reforms in order to expand food production and raise income level in rural areas, which account for the bulk of the poor in Rwanda.

19. Raising rural income is contingent on the ability of farm families to cover costs and yield adequate returns. Such is not the case in Rwanda, according to the preliminary results of the profitability analysis. These results suggest that if family labor is valued at the market wage rate paid to hired labor, all farming systems for beans, maize and sorghum generate negative profitability because of low output prices. These low prices are confirmed by the low protection coefficients, which measure farmers' share of the border equivalent price. The low level of the coefficients suggests an inefficient marketing system, which results from either market failure or high transaction costs. It may well be that farmers lack market information to help them strengthen their bargaining power or are forced to sell off their commodities because of lack of market opportunities. A thorough exam of the profitability analysis shows that, at present, farmers using traditional farming technique to produce food crops appear to generate higher profits when family labor is not accounted for in the cost structure than those relying on improved techniques. With the uncertainty associated to rainfed farming and market conditions, producers would prefer to play safe by sticking to the low-risk technologies. One lesson that can be drawn from the results pertaining to the analysis of the incentive framework is that paddy farmers, because the domestic rice market is closely linked to the international market and receive a fair share of the import parity price, yield positive profitability despite facing the cost of hiring labor.

20. Using the DRC coefficient to assess the competitiveness of agricultural commodities, the results of the study suggest that Rwanda enjoys a strong comparative advantage in maize, rice, sorghum and beans when they are produced for consumption in markets close to the production zones (See table 4b1). For maize, sorghum and beans, Rwanda's comparative advantage extend well beyond the production zones and reaches Kigali, which is the most important urban consumption center of the country. For all these commodities, the results show that Rwanda's comparative advantage is stronger for the farming systems with the relatively higher on-farm productivity. Yet, consumption of chemical fertilizers to boost productivity is not as wide spread as it should be in Rwanda, owing to several factors. First, inputs are not always readily available because of inefficiencies in the input market. Private input traders cannot take advantage of market opportunities, for they lack financial resources and face difficulties to secure a loan in

the formal banking sector in order to import inputs. This constraint may be eased in the near future by the World Bank-financed project which has put in place a line of credit to facilitate and foster input imports. Even though this problem may be addressed, input use will be constrained by low effective farmer demand. Farmers lack the collateral required to purchase inputs on credit. Addressing these constraints is the challenge facing Rwandan policy makers and the development community at large.

21. In contrast to the results of maize, dry beans and sorghum, those of rice show that this commodity loses its competitive edge when it is marketed from the production zones to Kigali. Several factors converge to hinder the competitiveness of rice in this important urban market. First, the cost of processing paddy into rice appears to be exorbitant in Rwanda, accounting for over one-quarter of the wholesale price of local rice in the Kigali market. Though the details of the processing costs are not available, interviews conducted with several managers revealed that overhead cost accounts for a large share of the processing cost in the large mills. The high processing cost stems also from over-capacity of the big mills, compounded by frequent breakdowns of the existing equipment for lack of spare parts. Yet, there appears to exist proper know-how to address maintenance problems. High processing costs are induced also by the sub-optimum processing conversion ratio, thereby causing output losses, which are taken into account to price the final product. The impact of the processing cost on rice competitiveness is evidenced by the results of the analysis with the small hullers. Domestic rice processed, using small hullers, appears marginally competitive in Kigali because their processing costs are about half of those incurred by the large-scale mills. Such a result calls for revisiting the issue of whether it is not in the best interest of Rwanda to encourage the establishment of small hullers instead of relying almost exclusively on the large-scale mills to process paddy into rice. Such an issue deserves careful attention because experience in Asia and other African countries has shown high payoffs from introducing those hullers, as they brought about greater competition in the processing subsector and helped to curtail processing costs. Another advantage of the small hullers is that they display greater flexibility in adapting to the changing market conditions. They also provide more bargaining power to farmers by helping them to sell rice instead of paddy and keeping the marketing margin.

22. The competitiveness of domestic rice is hindered to a great extent by the low quality of the processed rice. Rice produced in Rwanda has a high broken content caused by a host of factors. Seeds used by farmers appear to originate from different sources, thereby creating a heterogeneity problem, which makes it difficult to properly adjust the processing equipment. The broken content of rice is also influenced by the dry content of paddy, owing mainly to the lack of synchronization in rice cultivation and harvesting. Some farmers plant and harvest their paddy too soon and others undertake these activities too late, causing the former to dry their harvested paddy too much and the latter to dry their output insufficiently. Paddy overly dried has the tendency to increase the broken content of processed rice. Insufficiently dried paddy is likely to keep its husk and will be eventually mixed with the already high content of broken rice to lower further the quality of rice or will be reprocessed, contributing to increasing processing cost. As a result of its low quality, domestic rice can hardly compete with rice imported from the regional market and Asia, where rice is a way of life and deeply rooted in the culture.

23. The competitiveness of Rwandan rice is also hampered by the low level of on-farm productivity, which is disappointing by any irrigation standard. In fact, Rwanda's average paddy yields are lower than those observed in most Sahelian West African countries where rainfall is lower and erratic. Although yields vary markedly across irrigation perimeters in Rwanda, they are generally constrained by poor water management and availability problems resulting from the deteriorating irrigation infrastructure. Certain plots are overly watered because of drainage problems, leading to toxicity of the plant. Others receive very little or no water, causing weeds and pests to take over the plots and destroy the growing plant. In any case, significant losses are incurred by farm families.

**Table 3. Domestic Resource Cost Coefficients (Base Case Scenario)**

Commodity	Location	Farming System/Processing Technique	Market	
			<i>Farm</i>	<i>Kigali</i>
Maize	Bugarama	Traditional manual	0.41	0.69
Maize	Gisenyi	Improved manual	0.34	0.58
Maize	Gisenyi	Traditional manual	0.40	0.64
Maize	Mutara	Improved manual	0.52	0.97
Rice	Butare	Low-cost irrigation-improved manual/small huller	0.57	0.92
Rice	Butare	Low-cost irrigation-improved manual/big mill	0.57	1.14
Rice	Gitarama	Low-cost irrigation-improved manual/big mill	0.61	0.92
Rice	Bugarama	High-cost irrigation-improved manual/small huller	0.64	1.11
Rice	Rwamagana	High-cost irrigation-improved manual/big mill	0.73	1.23
Rice	Kabuye	Low-cost irrigation-improved manual/big mill	0.93	1.25
Rice	Mutara	High-cost irrigation-improved manual/big mill	0.87	1.63
Sorghum	Byumba	Improved manual	0.32	0.53
Sorghum	Byumba	Traditional manual	0.40	0.62
Sorghum	Kibungo	Improved manual	0.34	0.56
Sorghum	Kibungo	Traditional manual	0.48	0.73
Sorghum	Kigali	Improved manual	0.46	0.64
Sorghum	Kigali	Traditional manual	0.62	0.82
Dry Beans	Byumba	Improved manual	0.30	0.41
Dry Beans	Byumba	Traditional manual	0.35	0.46
Dry Beans	Kibungo	Improved manual	0.25	0.34
Dry Beans	Kibungo	Traditional manual	0.70	0.88
Dry Beans	Kigali	Improved manual	0.41	0.50
Dry Beans	Kigali	Traditional manual	0.51	0.61

24. Despite the poor performance of the agricultural sector during the past decade, prospects for improved competitiveness appear bright (see Tables 2 and 3). International commodity prices are predicted to increase markedly in the long run. Demand for agricultural commodities is increasingly getting stronger, thanks to the recovery in global economic growth, which, together with increasing population and stagnant commodity supply in world markets, will put an upward pressure on international prices. As such, the competitiveness of Rwandan agricultural commodities will improve in domestic markets, as shown by the sensitivity analysis. Improvement in the competitiveness of Rwandan commodities will also originate from the flexible exchange rate regime adopted by the Government. As Rwanda adapts to the changing economic environment, its currency is likely to depreciate vis-à-vis the dollar in the future because of the strong performance of the US economy. The dollar is predicted to stay strong in the years to come until the EURO, the common currency of the member countries of the European Union, establishes itself as a credible currency in international markets. The uncertainty hanging over the European countries in coordinating their fiscal policies and reducing their budget deficits raises serious doubt on the outlook of the EURO, helping to strengthen further the dominant role of the dollar in international markets.

25. Despite the positive developments predicted for the international markets on which small individual countries can exercise no influence or at best very little influence, Rwanda needs to deploy tremendous efforts to improve its competitive position in both domestic and regional markets. Key among the actions that the Government of Rwanda can take to overcome the binding constraints to strengthening the competitiveness of its agricultural commodities are the following measures:

(a) Improve on-farm productivity through:

- (i) *High yielding seed varieties:* Government efforts should focus on putting in place the conditions for making high yielding seed varieties to farmers. These seeds should be adapted to the local physical environment and resistant to diseases and pests. In this vein, the Institut des Sciences Agronomiques du Rwanda (ISAR) should focus its attention on producing the foundation seeds and transfer them to seed farmers for multiplication. Following this multiplication, MINAGRI should certify the seeds to ensure high quality before they are sold to paddy farmers.
- (ii) *Improving the provision of extension services:* At present, there does not appear to be a strategy for the provision of adequate extension services to farmers. Before designing a national extension strategy, it will be a good idea to investigate and evaluate the constraints to providing good quality extension services. A study needs to define the task and responsibility of the central technical departments and those close to farmers.
- (iii) *Fostering the link research-extension-farmer:* There appears to be no close relationship between researchers, extension agents and farmers. Yet, extension agents should be the link between researchers and farmers to provide a feedback to the former. Researchers also need to have direct contact with farmers to guide research activities.
- (iv) *Improving the provision of chemical and organic fertilizers to food crop farmers through farmers' organization:* While rice has adequate access to inputs, other food crops very seldom use fertilizers because farmers are not systematically organized to facilitate fertilizer purchase on credit. It is time for food crop farmers to initiate and establish cooperatives à la CODERVAM, design a revolving fund that will be used to order inputs on a large-scale, sell the inputs to farmers on credit and arrange for repayment after

harvest.

- (v) *Rehabilitating the rice irrigation infrastructure:* As the relatively low on-farm productivity is partly attributed to the dilapidated *irrigation* perimeters, it is imperative that the infrastructure be rehabilitated in the short to medium term. In this vein, farmers should learn to manage the infrastructure and contribute a great share of the investment and operating costs of the perimeters. However, transferring the management of these perimeters to farmers should be gradual because they need training and well-established rules governing water fees, operating costs and future investment costs.
- (b) **Improve the marketing efficiency:** Agricultural marketing is hampered by insufficient market information that would give signals to market participants. Though price data is gathered by the Programme d'Appui à la Sécurité Alimentaire (PASAR) to inform policy makers on the food security situation of the country, no activity is undertaken to inform farmers and traders on market conditions. Efforts should be deployed by the Government to feed information to farmers and traders in order to make markets more transparent and improve resource allocation.
- (c) **Foster the link between domestic and international markets:** Government liberalization efforts of the economy is the right step in the right direction. Nonetheless, Government needs to deploy additional efforts to bring domestic prices in line with international prices. Policies need to target lower import duties to foster competition and raise income in the long-run. With more liberal policies, the higher prices forecast for world markets will be passed onto domestic farmers to enhance their income in order to increase investments in the agricultural sector.
- (d) **Encourage the use of coarse grains in the livestock sector:** One of the binding constraints to increasing coarse grain prices at the farm level is that cereal use is restricted to human consumption only. Yet, there exists untapped demand in the livestock sector, which is in bad need of feeds. As livestock is one of the most important subsectors in rural Rwanda, Government should encourage contract farming between farmers and herders so as to increase demand for coarse grains and raise income of crop farmers.
- (e) **Improve the efficiency of rice processing:** Despite milling over-capacity, there is a need to bring about more competition in rice processing to curtail costs and improve competitiveness. Small hullers should be encouraged in Rwanda to increase the bargaining power of paddy farmers in the rice market. Establishment of these hullers should not, however, precede the restructuring and privatization of the large-scale mills to enable them to reduce overhead costs and withdraw from managing the irrigation perimeters.

Table 4. DRC Coefficients Resulting from an Increase in International Prices

Commodity	Location	Farming System/Processing Technique	Market	
			<i>Farm</i>	<i>Kigali</i>
Maize	Bugarama	Traditional manual	0.37	0.60
Maize	Gisenyi	Improved manual	0.30	0.50
Maize	Gisenyi	Traditional manual	0.36	0.55
Maize	Mutara	Improved manual	0.46	0.80
Rice	Butare	Low-cost irrigation-improved manual/small huller	0.48	0.74
Rice	Butare	Low-cost irrigation-improved manual/big mill	0.48	0.90
Rice	Gitarama	Low-cost irrigation-improved manual/big mill	0.50	0.75
Rice	Bugarama	High-cost irrigation-improved manual/small huller	0.54	0.88
Rice	Rwamagana	High-cost irrigation-improved manual/big mill	0.62	0.97
Rice	Kabuye	Low-cost irrigation-improved manual/big mill	0.77	1.01
Rice	Mutara	High-cost irrigation-improved manual/big mill	0.73	1.28
Sorghum	Byumba	Improved manual	0.28	0.45
Sorghum	Byumba	Traditional manual	0.36	0.53
Sorghum	Kibungo	Improved manual	0.30	0.47
Sorghum	Kibungo	Traditional manual	0.43	0.62
Sorghum	Kigali	Improved manual	0.40	0.54
Sorghum	Kigali	Traditional manual	0.55	0.71
Dry Beans	Byumba	Improved manual	0.24	0.32
Dry Beans	Byumba	Traditional manual	0.28	0.36
Dry Beans	Kibungo	Improved manual	0.20	0.26
Dry Beans	Kibungo	Traditional manual	0.57	0.70
Dry Beans	Kigali	Improved manual	0.32	0.39
Dry Beans	Kigali	Traditional manual	0.40	0.47

**Table 5. DRC Coefficients Resulting from a 20 percent Increase in International Output Price and Depreciation of the Domestic Currency**

Commodity	Location	Farming System/Processing Technique	Market	
			<i>Farm</i>	<i>Kigali</i>
Maize	Bugarama	Traditional manual	0.25	0.37
Maize	Gisenyi	Improved manual	0.20	0.29
Maize	Gisenyi	Traditional manual	0.24	0.33
Maize	Mutara	Improved manual	0.30	0.45
Rice	Butare	Low-cost irrigation-improved manual/small huller	0.31	0.44
Rice	Butare	Low-cost irrigation-improved manual/big mill	0.31	0.53
Rice	Gitarama	Low-cost irrigation-improved manual/big mill	0.32	0.45
Rice	Bugarama	High-cost irrigation-improved manual/small huller	0.35	0.51
Rice	Rwamagana	High-cost irrigation-improved manual/big mill	0.40	0.57
Rice	Kabuye	Low-cost irrigation-improved manual/big mill	0.49	0.61
Rice	Mutara	High-cost irrigation-improved manual/big mill	0.48	0.73
Sorghum	Byumba	Improved manual	0.20	0.29
Sorghum	Byumba	Traditional manual	0.24	0.32
Sorghum	Kibungo	Improved manual	0.19	0.28
Sorghum	Kibungo	Traditional manual	0.29	0.38
Sorghum	Kigali	Improved manual	0.25	0.32
Sorghum	Kigali	Traditional manual	0.36	0.43
Dry Beans	Byumba	Improved manual	0.16	0.20
Dry Beans	Byumba	Traditional manual	0.19	0.23
Dry Beans	Kibungo	Improved manual	0.13	0.17
Dry Beans	Kibungo	Traditional manual	0.37	0.44
Dry Beans	Kigali	Improved manual	0.21	0.25
Dry Beans	Kigali	Traditional manual	0.27	0.30

**Annex 5: Financial Summary**  
**RWANDA: RURAL SECTOR SUPPORT PROJECT**  
**Years Ending**

	IMPLEMENTATION PERIOD						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Total Financing Required</b>							
<b>Project Costs</b>							
<b>Investment Costs</b>	12.3	14.9	13.9	14.1	0.0	0.0	0.0
<b>Recurrent Costs</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total Project Costs</b>	12.3	14.9	13.9	14.1	0.0	0.0	0.0
<b>Total Financing</b>	12.3	14.9	13.9	14.1	0.0	0.0	0.0
<b>Financing</b>							
<b>IBRD/IDA</b>	10.7	13.1	12.0	12.2	0.0	0.0	0.0
<b>Government</b>	0.2	0.3	0.3	0.3	0.0	0.0	0.0
<b>Central</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Provincial</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Co-financiers</b>	1.2	1.2	1.3	1.3	0.0	0.0	0.0
<b>User Fees/Beneficiaries</b>	0.2	0.3	0.3	0.3	0.0	0.0	0.0
<b>Others</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total Project Financing</b>	12.3	14.9	13.9	14.1	0.0	0.0	0.0

**Main assumptions:**

## Annex 6: Procurement and Disbursement Arrangements

### RWANDA: RURAL SECTOR SUPPORT PROJECT

#### Procurement

##### *General*

1. The last CPAR carried out for Rwanda is no more pertinent since the procurement system changed thereafter. Presently a reform of Rwanda's procurement system is underway with Bank assistance through an IDF Grant. By June 2001, it should lead to the establishment of new procurement law and regulations including standard bidding documents based on the Bank's standard bidding documents. Experience from past shows that regulations and procedures in Rwanda do not conflict significantly with Bank guidelines. Furthermore, Rwanda's procurement practices allow IDA procedures to take precedence over any conflicting provisions in national regulations.

##### *Use of Bank Guidelines*

2. Procurement of goods and works financed under the credit shall be in accordance with Bank *Guidelines for Procurement* under *IBRD Loans and IDA Credits*, published in January 1995 and revised in January and August 1996, September 1997 and January 1999. Procurement of consultant services financed under the credit shall be in accordance with Bank *Guidelines for the Selection and Employment of Consultants by World Bank Borrowers*, published in January 1997, revised in September 1997 and January 1999.

##### *Advertising*

3. **Procurement Notices.** *Goods and Works:* A General Procurement Notice (GPN) will be published in the UN Development Business and in a National paper of wide circulation as specified in the guidelines. The GPN will be updated annually in case ICB procurement is not completed in the first year of the project. Specific Procurement Notices (SPN) will be required for all goods and works contracts to be procured through ICB and NCB. SPNs will be published in local newspapers and distributed to the embassies of member countries represented locally. *Consultant Services:* In order to obtain Expressions of Interest, a GNP will be published in the Development Business and in a National paper of wide circulation for all for consultant services contracts which are expected to exceed US\$100,000 equivalent. This GNP will be updated annually provided that consultant services contracts exceeding the above mentioned amount are foreseen in the yearly procurement plan.

4. As a promotional measure and to create awareness in the private sector (civil works contractors, suppliers of goods, prefecture and commune-based contractors and masons), the Project Support and Coordination Unit (PSCU) will prepare and publish annually, in local newspapers of wide circulation, a Promotional Procurement Notice (PPN) for business opportunities generated by Local Administrations (LAs) and Beneficiary Groups (BGs) under the project using a format to be included in the PIM. The PPN will contain information on estimated demand and contract opportunities by these beneficiaries for construction or rehabilitation of rural infrastructure.

### ***Procurement Capacity***

5. A procurement capacity assessment of the agencies involved in the project execution was carried out during the appraisal mission. This procurement assessment revealed that the capacities of the PSCU, LAs, BGs, and NTB need to be strengthened. Consequently, it was agreed that the following measures will be undertaken: (i) hiring of a qualified procurement specialist for the PSCU as soon as possible; (ii) preparation and implementation of a procurement training program tailored to the needs of each institution involved in the implementation of the project (LAs, BGs, NTB, PSCU); (iii) finalization and adoption of the NTB status; (iv) finalization and adoption of the new procurement regulations; (v) adoption of a Project Implementation Manual (PIM) satisfactory to IDA; and (vi) presentation of a satisfactory annual procurement plan for the first year of project implementation.

### ***Procurement Plan***

6. During Negotiations the Borrower has submitted a draft procurement plan for the first year. This plan will be updated, finalized and submitted to IDA for approval before Credit effectiveness. It was agreed that by October 1 of each year, a procurement plan for the next year will be submitted by PSCU for IDA prior review. The procurement will be updated at least once a year. The progress report forwarded to IDA will report on procurement activities in an appropriate degree of detail

### ***Procurement Implementation Arrangements***

7. Procurement will be the responsibility of the following institutions: (i) The Project Support and Coordinating Unit (PSCU) in collaboration with: (i) Local Administrations (LAs) and Beneficiary Groups (BGs); and (ii) The National Tender Board (NTB).

8. PSCU will be responsible for all procurement activities except for contracts below US\$25,000 equivalent, which may be procured through the beneficiaries, and for activities financed through the Rural Investment Facility (RIF). With regard to procurement, the main task of PSCU will be the implementation of the rehabilitation and development of farmed marshland and hillside areas. PSCU will prepare and update the procurement plan, prepare bidding documents, participate in the bid evaluations, and monitor and manage the execution of contracts. PSCU will work closely with the various departments of MINAGRI and its associated institutions as well as other representatives of the Ministries involved in the implementation of the project.

9. The NTB will be responsible for: (i) the publication of Specific Procurement Notices (SPNs); (ii) reviews of bidding documents, bids opening, evaluation, recommendation, and awarding of contracts above the thresholds required by the national procurement regulations.

### ***Procurement Method***

10. **Civil works** contracts to be financed under the credit are estimated at US\$15 million total. They include rehabilitation and development of farmed marshland and hillside areas, and small-scale drainage and irrigation infrastructure. Civil works estimated to cost US\$200,000 equivalent per contract and up to an aggregate amount of US\$2 million equivalent will be procured through ICB procedures. All civil works contracts, between US\$25,000 and US\$200,000 equivalent per contract and up to an aggregate amount of US\$12 million would be procured through NCB, in accordance with procedures described in the PIM and acceptable to IDA. Contracts estimated to cost between US\$25,000 and US\$100,000 equivalent may be awarded under simplified bidding procedures as described in the PIM, including advertisement at prefecture

level.

11. **Community-based procurement** will be used for activities to be financed through the Local Infrastructure Facility (LIF). It will cover small-scale irrigation, construction and rehabilitation of marketing facilities and all other small-scale rural infrastructure under the project that may be selected by LAs and BGs. Contracts will be procured on the basis of demands from the communities, following simplified procurement procedures described in the PIM. The manual to be used by the project will be based on the Bank publication: *Guidelines for Simplified Procurement and Disbursement for Community-based Investments*” and on lessons learnt through the Community Reintegration and Development Project (Cr. 3138-RW). Subprojects identified and appraised by LAs and BGs that might lead to contracts exceeding US\$25,000 equivalent will be procured by PSCU in accordance with the above-mentioned procedures (see para. 10 above).

12. **Commercial practices** will be used for procurement of the activities to be financed through the Rural Investment Facility (RIF). The RIF, with total resources amounting to US\$8.07 million, will provide financial resources to entrepreneurs willing to invest in priority areas defined in the Letter of Rural Development Policy. Since RIF provides matching grant resources, as part of loans provided by commercial banks, these subprojects will be appraised by local banks based on their lending practices, and the guidelines and criteria specified in the PIM. Commercial practices will consist of obtaining price quotations from at least three qualified contractors.

13. **Goods.** Contracts for furniture, equipment, vehicles and computers for PSCU, estimated to cost US\$100,000 equivalent or more, will be awarded through ICB. Goods estimated to cost less, between US\$10,000 and US\$100,000 equivalent per contract and up to an aggregated amount of US\$500,000 equivalent, will be awarded based on NCB procedures as described in the PIM. Goods procured by LAs and BGs and small items such as office equipment and supplies as well as small equipment and furniture, that are locally available and costing less than US\$20,000 equivalent per contract and up to an aggregated amount of US\$100,000 equivalent, will be procured on the basis of comparison of at least three quotations obtained from reputable suppliers. Vehicles, motorcycles and office equipment may be procured through UN agencies (IAPSO) for up to an aggregated amount of US\$100,000 equivalent.

Procurement methods (Table A)

**Table A: Project Costs by Procurement Arrangements**  
(US\$ million equivalent)

Expenditure Category	Procurement Method 1/				Total Cost
	ICB	NCB	Other 2/	N.B.F.	
(1) Grants (LIF and RTF)	0.00 (0.00)	0.00 (0.00)	18.52 (17.41)	0.00 (0.00)	18.52 (17.41)
(2) Subloans (RIF)	0.00 (0.00)	0.00 (0.00)	8.07 (8.07)	0.00 (0.00)	8.07 (8.07)
(3) Civil works	1.91 (1.80)	10.58 (9.91)	2.42 (2.27)	0.00 (0.00)	14.91 (13.98)
(4) Goods	0.00 (0.00)	0.40 (0.39)	0.06 (0.06)	0.00 (0.00)	0.46 (0.45)
(5) Consultants' services, Studies, Surveys, Training, and Audits	0.00 (0.00)	0.00 (0.00)	6.48 (6.48)	0.00 (0.00)	6.48 (6.48)
(6) Operating costs	0.00 (0.00)	0.00 (0.00)	1.17 (1.06)	0.00 (0.00)	1.17 (1.06)
(7) Project Preparation Advance	0.00 (0.00)	0.00 (0.00)	0.57 (0.55)	0.00 (0.00)	0.57 (0.55)
<b>Total</b>	1.91 (1.80)	10.98 (10.30)	37.29 (35.90)	0.00 (0.00)	50.18 (48.00)

1/ Figures in parenthesis are the amounts to be financed by the IDA Credit. All costs include contingencies.

2/ Includes civil works and goods to be procured through national shopping, consulting services, services of contracted staff of the Project Management Office, training, technical assistance services, and incremental operating costs related to: (i) managing the project; and (ii) re-lending project funds to local government units.

N.B.F. = Non-Bank-financed

14. **Consultant Services.** Consulting services financed under the credit would be for: (i) studies, architectural and technical design, civil works supervision, preparation of bidding documents; (ii) data collection, audits - financial and technical, impact analysis; and (iii) training - skills gap analysis, skills development; and training of staff from various agencies and institutions (including LAs) involved in project implementation activities. The selection procedures will consist of: (a) Quality- and Cost-Based selection (QCBS) for architectural, technical design and civil works supervision; (b) Least Cost Selection (LCS) for technical and financial audits; (c) Consultants' Qualifications (CQ) for technical studies and training; (c) Selection under a Fixed-Budget (SFB) for training of LAs and BGs; and (e) selection of individual consultants for: (i) technical studies under subprojects; and (ii) assistance to LAs and BGs on procurement activities concerning small civil works (Section V of Guidelines).

**Table A1: Consultant Selection Arrangements (optional)**  
(US\$ million equivalent)

Consultant Services Expenditure Category	Selection Method							Total Cost <sup>1</sup>
	QCBS	QBS	SFB	LCS	CQ	Other	N.B.F.	
<b>A. Firms</b>	2.30 (2.30)	0.00 (0.00)	0.40 (0.40)	0.25 (0.25)	0.75 (0.75)	0.00 (0.00)	0.00 (0.00)	3.70 (3.70)
<b>B. Individuals</b>	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	2.78 (2.78)	0.00 (0.00)	2.78 (2.78)
<b>Total</b>	2.30 (2.30)	0.00 (0.00)	0.40 (0.40)	0.25 (0.25)	0.75 (0.75)	2.78 (2.78)	0.00 (0.00)	6.48 (6.48)

1\ Including contingencies

Note: QCBS = Quality- and Cost-Based Selection  
 QBS = Quality-based Selection  
 SFB = Selection under a Fixed Budget  
 LCS = Least-Cost Selection  
 CQ = Selection Based on Consultants' Qualifications  
 Other = Selection of individual consultants (per Section V of Consultants Guidelines), Commercial Practices, etc.

N.B.F. = Not Bank-financed

Figures in parenthesis are the amounts to be financed by the Bank Credit.

**Prior review thresholds (Table B)**

15. **Civil Works.** The first five contracts for civil works for rehabilitation of farmed marshland and hillside areas from five different communes regardless of cost, the first five contracts to be financed through LIF from five different communes regardless of cost, and contracts for amounts exceeding the equivalent of US\$100,000 will be subject to IDA's prior-review procedures. This threshold will be reviewed if deemed necessary at the mid-term review based on the procurement record of the implementing agency. All other contracts will be subject to post-review by IDA during supervision missions and by auditors.

16. **Goods.** The first three contracts, regardless of cost, and contracts for amounts exceeding the equivalent of US\$50,000 will be subject to prior-review by IDA. This threshold will be reviewed if deemed necessary at the mid-term review based on the procurement record of the implementing agency. All other contracts will be subject to post-review by IDA during supervision missions and by auditors.

17. **Consultant Services.** All terms of reference (TORs), excluding those with standard TORs provided in the PIM, and all single source selection, regardless of contract cost, will be subject to prior review. Contracts estimated to cost more than US\$25,000 equivalent for individuals and more than US\$50,000 equivalent for firms will be subject to prior-review procedures. All other contracts will be subject to post review by IDA during supervision missions and by auditors during technical audits.

**Table B: Thresholds for Procurement Methods and Prior Review<sup>1</sup>**

<b>Expenditure Category</b>	<b>Contract Value Threshold (US\$ thousands)</b>	<b>Procurement Method</b>	<b>Contracts Subject to Prior Review (US\$ millions)</b>
<b>1. Works</b> (a) Design & Supervision (b) Construction	More than US\$200,000 equivalent	ICB	Equal or more than US\$100,000 or more and first five contracts from five different communes
	Between US\$25,000 and US\$200,000 equivalent	NCB	
	Between US\$25,000 and US\$100,000 equivalent	NCB with Simplified procedures as described in PIM	
<b>2. Goods</b> (a) Vehicles (b) Equipment (c) Furniture	More than US\$100,000 equivalent	ICB	Equal or more than US\$50,000 and the first three contracts
	Between US\$10,000 and US\$100,000 equivalent	NCB/IAPSO	
	Less than US\$20,000 equivalent	NS or LS	

<b>3. Services</b>			
<b>(a) Firms</b>	NA	QCBS/LCS/CQ/SFB Single Source	All TORs and All Single source contract regardless of their cost.  Equal and more than US\$50,000 equivalent for firms.
<b>(b) Individuals</b>	NA	IC	Equal and more than US\$25,000 for individuals
<b>4. Grants:</b>			
<b>LIF and RTF</b>	No threshold but no contract exceeding US\$200,000 is expected	Simplified procedures as described in the PIM	First five contracts from five different communes. All contracts of works above US\$100,000 equivalent and all contracts of goods above US\$50,000 equivalent
<b>5. Subloans:</b>			
<b>RIF</b>	No threshold but no contract exceeding US\$200,000 is expected	Commercial practices	None

**Total value of contracts subject to prior review:** US\$18.34 M

**Overall Procurement Risk Assessment**

**Average**

**Frequency of procurement supervision missions proposed:** One every 6 months (includes special procurement supervision for post-review/audits)

***Procurement, Supervision and Technical Audit***

18. One every six months a supervision mission will be carried out. During these missions a selective post review of contracts awarded below the thresholds will apply to at least one in five contracts. The project's activities would be subject to annual technical audits carried out separately from financial audits.

<sup>1</sup> Thresholds generally differ by country and project. Consult OD 11.04 "Review of Procurement Documentation" and contact the Regional Procurement Adviser for guidance.

## Disbursement

### Allocation of credit proceeds (Table C)

**Table C: Allocation of Credit Proceeds**

<b>Expenditure Category</b>	<b>Amount in US\$million</b>	<b>Financing Percentage</b>
(1) Grants (LIF and RTF)	15.67	100% of amounts disbursed
(2) Subloans (RIF)	7.26	100% of amounts disbursed
(3) Civil works	12.53	95%
(4) Goods	0.41	100% of foreign and 95% of local expenditures
(5) Consultants' services, Studies, Surveys, Training, and Audits	5.83	100%
(6) Operating costs	0.95	85%
(7) Refunding of Project Preparation Advance	0.55	-
(8) Unallocated	4.80	-
<b>Total Project Costs</b>	<b>48.00</b>	
<b>Total</b>	<b>48.00</b>	

## **Use of statements of expenditures (SOEs):**

### ***Basic Principles***

1. The Chief Financial Officer (CFO) at the PSCU Office would be entrusted with the Program's overall financial management and reporting and would serve as the principal contact for Bank financial management and disbursement purposes. Under the supervision of the CFO, the local administrations (LAs) would be in charge, where applicable and capacity exists, of all financial management and reporting at the local level with respect to individual and matching grants sub-projects dealing with public infrastructure development and maintenance activities. Payments would flow from the special accounts and would be made according to predetermined disbursement schedules to be specified in the respective sub-project proposals. Transfer payments would be effected expeditiously when due, and fund management would follow transparent procedures that would be standardized across LAs and detailed in the sub-project manual. After an initial advance, the level of which would be determined in the initial sub-project proposals, each subsequent transfer would be made on the basis of justified expenditures and according to the disbursement schedules. For infrastructure subprojects, final tranches would be paid upon approval of the quality of works by an independent technical auditor. At no time would outstanding advances in regional subsidiary accounts exceed 90-days estimated expenditures.

2. Use of SOEs would be contingent upon a satisfactory assessment of the PSCU's financial management capacity, including the maintenance of proper accounts, the preparation of project progress reports, the ability to process and maintain SOE documentation, and satisfactory annual auditing arrangements. Provided these conditions are met, SOEs would be used for all expenses related to sub-projects. Furthermore, all expenses, related to contracts below prior-review thresholds would be claimed on the basis of SOEs. The supporting documentation underlying all SOEs would be made available for review by Bank supervision missions at any time. Supporting documentation would be retained by the PSCU, with the exception of sub-project documentation, which would be retained by the respective LAs. The primary responsibility of maintaining the records rests on the CFO. The satisfactory assessment of the financial management system would be one condition of effectiveness.

### **Special account:**

3. The Government would open two Special Accounts in US dollars with the Banque Nationale du Rwanda (BNR), to which project funds will be deposited. Special Account B (SA-B) would be for the financing of the sub-projects under the Rural Investment Facility (RIF) and Special Account A (SA-A) for all other project activities. SA-B will be managed by BNR and SA-A by PSCU. The objective of these special accounts is that most, if not all, credit funds be disbursed through this procedure, with PSCU relying as little as possible on direct payments from Washington. Only amounts exceeding 25 percent of the amount advanced to the special accounts could be claimed through the direct payment procedure. The authorized allocation for each of the special accounts would be US\$1,000,000. Once cumulated disbursement for a given account reaches SDR 2,500,000, the advance for that account would be raised to US\$2,000,000. For subsequent disbursements, PSCU would submit appropriate justification on the use of amounts disbursed earlier (bank reconciliation statements and other reasonable documentation) to IDA. The Special Account would be audited annually by external auditors acceptable to IDA. At the time replenishment of the SA-A and SA-B is requested, PSCU will indicate on their reconciliation statement the location and amounts outstanding in each subsidiary account.

### *Decentralized Advance Accounts (DAAs)*

4. Due to the decentralized approach of the project, most of the activities would be conducted in remote areas of the country where there are no adequate banking services linked to the capital city. Even if there were branches of the Banque Populaire in most of the communes, no immediate transfer of funds could be effected from the capital to the prefectures and subsequently to the executing agencies at the local level. Consequently, the Borrower would be authorized by IDA to withdraw funds from Special Account A and use these to make advance payments to participating local administrations, where necessary and where required capacities exist, for a period not exceeding 90 days into Decentralized Advance Accounts (DAAs) that would be opened in commercial bank branches that are in, or close to, the geographical location of these administrations. The 90-day DAAs would be administered by the local administrations and subject to the same IDA policies and procedures as the Special Accounts (SA-A and SA-B), with regard to expenditure eligibility, disbursement percentages, non-financing of taxes, etc. The financial control mechanisms to be established as a condition of effectiveness and the eligibility criteria of beneficiary communities would allow the PSCU and the local administrations to constantly monitor the financial flows. Training planned throughout project implementation, and in particular during the start-up phase, would strengthen the administrative capacity at the central and local levels to manage the financial aspects of the project.

5. Upon approval of the respective sub-project implementation plans, the local administrations would, in applicable cases, prepare a one-year operating budget and a financial plan with cash flow requirements (disbursement schedule) for each such sub-project. On the basis of the budget and financial plan, local administrations would request advances covering no more than 90 days for individual sub-projects from the PSCU. For later replenishments, the expenses incurred under the previous tranche would have to be justified (e.g., by submitting receipts) to the satisfaction of the PSCU, as confirmed by its Chief Financial Officer. Payments for eligible expenditures under sub-projects would be made by local administrations according to predetermined payment schedules which would be specified in the sub-project proposals. All payments would be made to the account of the supplier or partner agency in accordance with predetermined payment terms that would be specified in the relevant contracts.

6. The DAAs would be subject to monthly reviews by PSCU. The latter would prepare quarterly financial reports to be submitted to MINAGRI, MINECOFIN, and IDA. The Bank's disbursement letter to be issued by LOA and the PIM being prepared by MINAGRI would specify the above mentioned arrangements in more detail.

### *Counterpart Fund Account (CFA)*

7. The PSCU would open with BNR a counterpart fund account. Government's counterpart funds needed for twelve (12) months to cover the share of investment not financed by IDA will be deposited by the government in a Project Counterpart Fund Account (PCFA) at BNR at the beginning of each year of the project for Government's share of eligible expenditures. The funds will be managed by the PSCU.

**Annex 7: Project Processing Schedule**  
**RWANDA: RURAL SECTOR SUPPORT PROJECT**

<b>Project Schedule</b>	<b>Planned</b>	<b>Actual</b>
<b>Time taken to prepare the project (months)</b>	11	13
<b>First Bank mission (identification)</b>	02/04/2000	02/13/2000
<b>Appraisal mission departure</b>	09/30/2000	10/22/2000
<b>Negotiations</b>	12/14/2000	02/16/2001
<b>Planned Date of Effectiveness</b>	06/30/2001	

**Prepared by:**

The Ministry of Agriculture, Animal Resources and Forestry (MINAGRI)

**Preparation assistance:**

FAO/CP

**Bank staff who worked on the project included:**

<b>Name</b>	<b>Speciality</b>
Ousmane Badiane	Senior Agricultural Economist (Task Team Leader), AFTR2
Azra Lodi	Program Assistant (costab and quality enhancement), AFTR2
Remileku Rakey Cole	Consultant (export promotion), AFTR2
Jiro Tominaga	Young Professional (implementation mechanisms - PIP), AFTR2
Prosper Biabo	Consultant (financial management aspects - PIP), AFTR2
Francois Kanimba	Senior Economist (institutional and policy reform issues), AFMRW
Marie-Claudine Fundi	Team Assistant (AFMRW)
Prosper Nindorera	Operations Officer (procurement issues), AFMBI
David Steeds	Consultant (marshland development)
Harry Palmier	Institutional Development Specialist (agricultural services), AFTF2
Hassane Cisse	Senior Counsel (LEGOP)
K.G. Awunyo	Consultant (LEGOP)
David Freese	Disbursement Officer (LOAG1)
William B. Marke	Lead Financial Management Specialist (LOAG2)
Juvenal Nzambimana	Disbursement Analyst (LOAG2)
<b>QUALITY ASSURANCE:</b>	
Joseph Baah-Dwomoh	Sector Manager (AFTR2)
Irene Xenakis	Lead Specialist (AFTQK): operatn. quality/proj. design/safeguard issues
Francesco Sarno	Lead Procurement Specialist (AFTQK): procurement issues
Abdul Haji	Financial Management Specialist (AFTQK): financial management
Luc La Pointe	Consultant (AFTQK): procurement issues
Elizabeth White	Consultant (OCSOS): logframe and project design
Naima Hasci	Sr. Social Scientist (AFTES): social issues
Eugene R. Terry	Adviser (RDV): small-scale irrigation, technical engineering
Mohammed S.Y. Abdel-Dayem	Principal Drainage Specialist (RDV): drainage, technical/engineering

Alessandro Palmieri  
Christian J. Pieri  
Henri P. Van Der Wulp  
Madhur Gautam

Sr. Dams Specialist (RDV): irrigation and safeguard policies  
Sr. Ecologist (RDV): nutrient management, soil fertility conservation  
(RDV): pest management, safeguard policies  
Evaluation Officer (OEDST): extension services, participatory service

**Annex 8: Documents in the Project File\***  
**RWANDA: RURAL SECTOR SUPPORT PROJECT**

**A. Project Implementation Plan**

Draft Project Implementation Manual (PIM)

**B. Bank Staff Assessments**

Abdul Haji, Sr. Financial Management Specialist (AFTQK) - Financial Management

Prosper Nindorera, Operations Officer (AFMBI) - Procurement

Remi Kini, Environmental Economist (AFTES) - Environment

Naima Hasci, Sr. Social Scientist (AFTES) - Social

Willaim B. Marke, Lead Financial Management Specialist (LOAG2) - Disbursement

**C. Other**

- (1) A. Dachraoui: RAPPORT TECHNIQUE (Technical report on marshland and hillside rehabilitation)
- (2) A. W. Barry: PROSPECTS FOR AGRICULTURAL COMMODITY COMPETITIVENESS: CONSTRAINTS AND OPPORTUNITIES
- (3) B. Badjeck: FINANCIAL AND ECONOMIC ANALYSIS
- (4) A. Youdeowei and Athanase Kayijamahe: FRAMEWORK FOR THE INTEGRATED PRODUCTION AND PEST MANAGEMENT FARMERS FIELD SCHOOLS(IPPM/FFS)
- (5) FAO/CP: GLOBAL ENVIRONMENT FACILITY - PROPOSAL FOR PROJECT DEVELOPMENT FUNDS (PDF) BLOCK B GRANT
- (6) FAO/CP: ENVIRONMENTAL ASSESSMENT
- (7) L. Cremona: SOCIAL ASSESSMENT
- (8) B. Cooney: GLOBAL ENVIRONMENT FACILITY PROPOSAL FOR PROJECT DEVELOPMENT FUNDS (PDF) BLOCK B GRANT
- (9) J. Gendahayo: SÉMINAIRE-ATELIER SUR LA CONCEPTION DU PROJET D'APPUI AU SECTEUR RURAL AU RWANDA
- (10) Lynn Engstrand (Team Leader): BACK TO OFFICE REPORT RWANDA CTSE PROJECT PREPARATION MISSION. August 14 to September 2, 2000
- (11) Evaluation de la capacité de passation des marchés - Récapitulation des conclusions et mesures proposées
- (12) Caracteristiques Generales

\*Including electronic files

**Annex 9: Statement of Loans and Credits**  
**RWANDA: RURAL SECTOR SUPPORT PROJECT**  
Feb-2001

Project ID	FY	Purpose	Original Amount in US\$ Millions		Cancel.	Undisb.	Difference between expected and actual disbursements*	
			IBRD	IDA			Orig	Frm Rev'd
P045182	2000	RW-Rural Water Supply & Sanitation Proje	0.00	20.00	0.00	19.70	0.00	0.00
P045091	2000	Rw-Human Resource Dev.	0.00	35.00	0.00	34.05	1.79	0.00
P058038	2000	AGRICULTURAL AND RURAL MARKET	0.00	5.00	0.00	4.07	-0.91	0.00
P057294	1999	DEVELOPMT.	0.00	75.00	0.00	31.29	20.91	0.00
P051931	1999	EC.REC.CREDIT	0.00	5.00	0.00	3.93	1.61	0.00
P002241	1993	CRDP	0.00	26.00	7.01	4.22	11.86	4.85
P002237	1991	Rw-Energy Sector	0.00	19.60	0.00	7.44	0.08	0.09
P002238	1990	HEALTH & POPULATION TRANSPORT SECTOR	0.00	40.00	0.00	20.35	-26.47	12.69
<b>Total:</b>			0.00	225.60	7.01	125.05	8.87	17.63

RWANDA  
STATEMENT OF IFC's  
Held and Disbursed Portfolio  
Feb-2001  
In Millions US Dollars

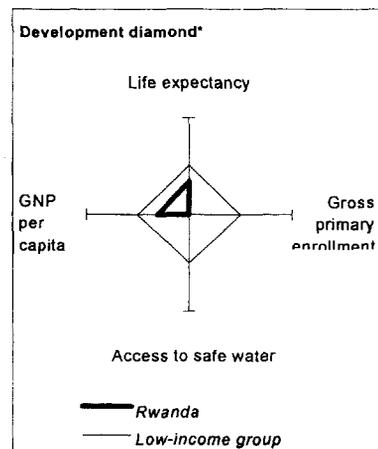
FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic	Loan	Equity	Quasi	Partic
<b>Total Portfolio:</b>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic
2000	Rwandacell	4000.00	2000.00	0.00	0.00
1998	AEF Highland	526.10	0.00	0.00	0.00
<b>Total Pending Commitment:</b>		4526.10	2000.00	0.00	0.00

## Annex 10: Country at a Glance

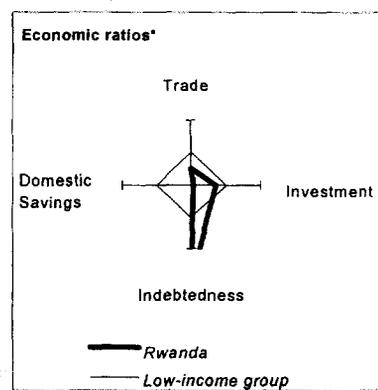
### RWANDA: RURAL SECTOR SUPPORT PROJECT

POVERTY and SOCIAL	Rwanda	Sub-Saharan Africa	Low-income
<b>1999</b>			
Population mid-year (millions)	8.3	642	2 417
GNP per capita (Atlas method, US\$)	250	500	410
GNP (Atlas method, US\$ billions)	2.1	321	988
<b>Average annual growth, 1993-99</b>			
Population (%)	1.6	2.6	1.9
Labor force (%)	1.9	2.6	2.3
<b>Most recent estimate (latest year available, 1993-99)</b>			
Poverty (% of population below national poverty line)	51	..	..
Urban population (% of total population)	6	34	31
Life expectancy at birth (years)	41	50	60
Infant mortality (per 1,000 live births)	123	92	77
Child malnutrition (% of children under 5)	..	32	43
Access to improved water source (% of population)	..	43	64
Illiteracy (% of population age 15+)	34	39	39
Gross primary enrollment (% of school-age population)	..	78	96
Male	..	85	102
Female	..	71	86



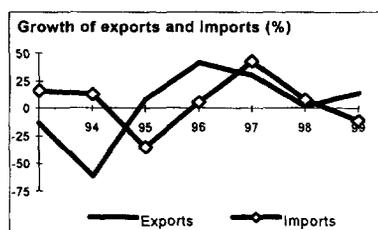
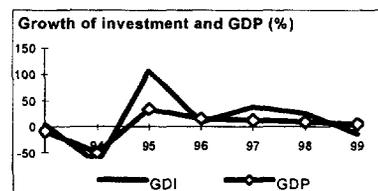
#### KEY ECONOMIC RATIOS and LONG-TERM TRENDS

	1979	1989	1998	1999
GDP (US\$ billions)	1.0	2.4	2.0	2.0
Gross domestic investment/GDP	12.0	13.4	15.7	14.3
Exports of goods and services/GDP	21.0	6.1	5.4	5.6
Gross domestic savings/GDP	10.3	2.3	-1.7	-1.3
Gross national savings/GDP	22.7	2.7	7.4	7.1
Current account balance/GDP	4.6	-10.8	-8.2	-7.1
Interest payments/GDP	0.1	0.3	0.6	0.6
Total debt/GDP	15.1	25.8	60.0	63.2
Total debt service/exports	2.3	18.1	32.9	41.5
Present value of debt/GDP	..	..	34.1	38.5
Present value of debt/exports	..	..	570.3	640.8
	<b>1979-89</b>	<b>1989-99</b>	<b>1998</b>	<b>1999</b>
<i>(average annual growth)</i>				
GDP	2.8	-2.1	9.5	5.9
GNP per capita	-0.4	-3.5	7.5	3.2
Exports of goods and services	3.5	-6.9	1.9	6.5



#### STRUCTURE of the ECONOMY

	1979	1989	1998	1999
<i>(% of GDP)</i>				
Agriculture	53.6	43.3	47.4	45.7
Industry	20.5	18.7	21.2	20.5
Manufacturing	14.0	11.2	13.0	11.7
Services	25.9	38.0	31.4	33.8
Private consumption	76.6	85.0	90.4	88.7
General government consumption	13.1	12.7	11.3	12.7
Imports of goods and services	22.8	17.3	22.9	21.1
	<b>1979-89</b>	<b>1989-99</b>	<b>1998</b>	<b>1999</b>
<i>(average annual growth)</i>				
Agriculture	0.8	-4.0	10.8	5.9
Industry	3.8	0.5	11.4	5.9
Manufacturing	4.1	4.0	10.4	8.4
Services	7.3	-1.7	7.7	5.9
Private consumption	2.1	0.9	6.6	-0.4
General government consumption	5.8	-3.5	16.9	18.1
Gross domestic investment	9.1	-0.1	26.4	-12.7
Imports of goods and services	5.4	7.1	8.0	-11.4
Gross national product	2.7	-2.1	10.2	5.7

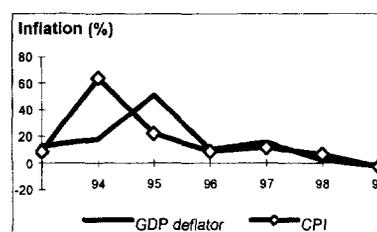


Note: 1999 data are preliminary estimates.

\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

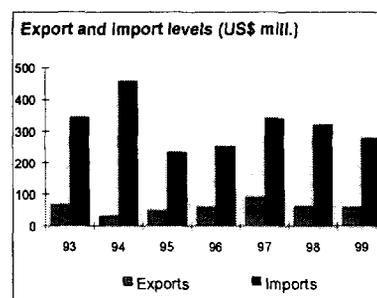
## PRICES and GOVERNMENT FINANCE

	1979	1989	1998	1999
<b>Domestic prices</b>				
<i>(% change)</i>				
Consumer prices	15.7	1.1	6.8	-2.4
Implicit GDP deflator	6.1	5.3	2.6	-2.4
<b>Government finance</b>				
<i>(% of GDP, includes current grants)</i>				
Current revenue	..	12.7	15.7	13.4
Current budget balance	..	0.5	3.8	0.1
Overall surplus/deficit	..	..	-2.9	-6.2



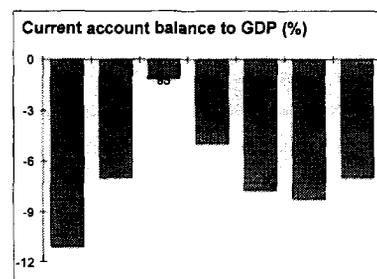
## TRADE

	1979	1989	1998	1999
<i>(US\$ millions)</i>				
Total exports (fob)	203	97	64	61
Coffee	..	59	28	27
Other agriculture	..	20	23	18
Manufactures	..	4	10	15
Total imports (cif)	..	332	323	281
Food	..	29	49	47
Fuel and energy	..	48	35	47
Capital goods	..	86	61	44
Export price index (1995=100)	..	83	109	106
Import price index (1995=100)	..	83	99	102
Terms of trade (1995=100)	..	101	110	104



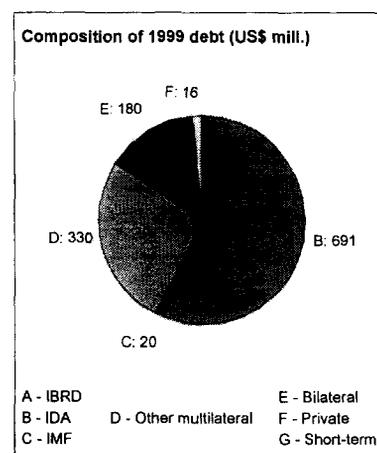
## BALANCE of PAYMENTS

	1979	1989	1998	1999
<i>(US\$ millions)</i>				
Exports of goods and services	227	148	111	109
Imports of goods and services	307	417	462	412
Resource balance	-80	-269	-351	-304
Net income	-3	-10	-7	-10
Net current transfers	131	19	191	176
Current account balance	48	-259	-167	-138
Financing items (net)	-13	155	185	161
Changes in net reserves	-35	105	-18	-23
<b>Memo:</b>				
Reserves including gold (US\$ millions)	152	70	164	186
Conversion rate (DEC. local/US\$)	92.8	80.0	312.3	333.9



## EXTERNAL DEBT and RESOURCE FLOWS

	1979	1989	1998	1999
<i>(US\$ millions)</i>				
Total debt outstanding and disbursed	156	623	1,213	1,237
IBRD	0	0	0	0
IDA	48	302	552	691
Total debt service	5	29	40	49
IBRD	0	0	0	0
IDA	0	3	11	11
Composition of net resource flows				
Official grants	83	96	199	212
Official creditors	33	53	43	27
Private creditors	-1	-3	88	96
Foreign direct investment	13	16	7	2
Portfolio equity	0	0	0	0
World Bank program				
Commitments	10	52	0	80
Disbursements	11	32	55	69
Principal repayments	0	1	6	6
Net flows	11	31	49	63
Interest payments	0	2	5	5
Net transfers	11	29	44	58



**Additional  
Annex 11**

**Environmental Assessment  
RWANDA: RURAL SECTOR SUPPORT**

**1 Environmental Impact**

*Potential Positive Impacts*

1. Overall, Rwanda's natural resource base is subject to continuing degradation due to the high population density, high population growth rate (some 3 percent p.a.), and continuing uncontrolled resettlements following the civil war. High erosion rates on hill sides affect agricultural productivity, whereas deforestation and possibly changes in river hydrology may have caused changes in the local climate; rainfall has been deficient in each of the last three years. RSP would contribute to an improved management of natural resources by: (i) improving sustainability and productivity of hill side agriculture through the application of soil and water conservation measures; and (ii) through increasing the productivity of wetlands already used for agricultural purposes. Besides tackling the issue of land degradation in the hillsides, this would lead to improved food security and income generation opportunities for the rural population. Increased productivity of agricultural land could lead to a reduction in the encroachment in protected areas. In addition, the project would support capacity building at all levels, including the local level. The project component Integrated Management of Critical Ecosystems (financed by the GEF) would contribute to the protection of biodiversity in wetlands.

*Potential Negative Impacts*

2. The project also has a number of potential negative environmental impacts. The main potential negative impacts are: (i) loss of habitat through increased cultivation of wetlands; (ii) changes in national hydrology through drainage and irrigation of wetlands; (iii) increase in diseases with a waterborne vector (in particular malaria and bilharzia) through the construction of irrigation reservoirs; (iv) increase in the use of pesticides; and (v) increase in erosion related to the construction and rehabilitation of roads. These impacts are described below. As the project would be demand driven, and precise project activities would be determined during its implementation phase, sub-project preparation and evaluation would include environmental screening where necessary.

- (a) *Loss of Habitat through Increased Cultivation of Wetlands.* In the first phase, the project would support agricultural activities in some 4,000 ha of wetlands. Currently, around 90,000 out of the total 164,000 ha of wetlands in Rwanda are under cultivation. This is a relatively extensive type of cultivation, involving traditional drainage, cultivation of maize, sorghum, soybeans and sweet potatoes during the rainy season, and cultivation of sweet potatoes during the dry season. Nevertheless, these wetlands have lost the majority of their original vegetation cover. As the project would be limited to already cultivated wetlands, the environmental impact is thought to be moderate; nevertheless, it will be necessary to monitor any risk of bio-diversity loss.
- (b) *Changes in National Hydrology through Drainage of Wetlands.* The proposed project activities include drainage and irrigation. This will have a substantial impact on the hydrological properties of the wetlands. These include a reduction in the water holding capacities of the wetlands: when drainage activities are completed, there may be less possibility to absorb floods in the rainy season and, subsequently, less water available to be released in the dry season.

- (c) *Increase in Waterborne Diseases through Construction of Irrigation Reservoirs.* These diseases are in particular malaria and bilharzia. Irrigation reservoirs provide a habitat for mosquito larvae and water snails, the respective vectors of malaria and bilharzia. In particular, malaria is one of the most dangerous diseases of the country. Even though there currently already exist ample breeding habitats for the vectors of these diseases, there is a risk of an increase in malaria and bilharzia due to the construction of irrigation reservoirs in the wetlands.
- (d) *Increase in the Use of Pesticides.* Pesticide use on most staple crops is not very high in Rwanda as the majority of farmers cannot pay for pesticides. However, pesticide use can be substantial on cash-crops, such as coffee, tea, vegetables and rice in the wetlands, and potatoes in the hillsides. As the project would specifically be targeted at increased cultivation of cash crops, there is a risk that this could contribute to an increased use of pesticides in the country, requiring adequate mitigation. The negative environmental impact of an increased use in fertilizers would be negligible as, in the large majority of the fields, the current use of fertilizers is too low to even replenish the soil nutrients taken out by the crops. Increased use of fertilizers would thus have a positive environmental impact as it would help to maintain the soil fertility of agricultural plots.

In order to mitigate the potential environmental impacts related to an increase in the use of pesticides, the RSSP would implement an extensive integrated pest management plan (IPM), that would train some 2,000 to 2,500 farmers in IPM, following the Farmer Field School approach. The IPM sub-component, which is described further below, will adequately mitigate the risk of pesticide use for the environment and beneficiary populations.

- (e) *Increase in Erosion Related to the Construction/Rehabilitation of Roads.* With the exception of the national parks, there is virtually no untouched habitat left in Rwanda and the risk of an impact on habitat through the construction of local infrastructure, such as roads, is low. However, there exists a risk that the construction of roads could lead to erosion, in particular when road design insufficiently takes into account the substantial erosion risk in a high rainfall country such as Rwanda.
- (f) *Other environmental impacts.* An activity that may be supported by the RSSP is the construction of agro-processing units. These processing units (in particular for coffee) may cause pollution of waterways through the disposal of wastewater. However, it is currently not known what types of processing units would be supported. There is also a chance that the improvement of the market structure for rice, vegetables and legumes (peas and beans) could lead to increased demand for these products, and thus to encroachment on other wetlands. This also holds for the construction of roads, which may facilitate the transport of agricultural products and thus may stimulate the growing of these crops, possibly causing encroachment on currently non-cultivated wetlands. Because these impacts can only be assessed when more detailed information is available on the precise activities of the project, they have not been further investigated. However, it is recommended that these impacts be included in the environmental review of the project after the first phase.

## **2. Mitigation Measures**

3. In order to mitigate the potential negative environmental impacts of the project, the RSP includes an Environmental Mitigation Plan (EMP), composed of the following elements:

- (a) *Exclusion of currently uncultivated wetlands from the project.* Undeveloped wetlands will be excluded from the project. The priority list of wetlands to be developed under the first phase only contain areas that have already been modified by agricultural activities; in addition, a biodiversity

assessment of wetlands will be conducted (as part of the GEF component) and an environmental screening procedure will be adopted. The assessment would, amongst other outputs, result in a list of wetlands which, because of their importance for biodiversity conservation or maintenance of national hydrology, would be excluded from development by the RSP (a 'negative' list). A screening procedure would also be applied to cultivated wetlands proposed for rehabilitation or modernization by the RSSP in order to provide an additional environmental safeguard, as specified in para 3(d) below.

- (b) *Implementation of a Study on the Role of Wetlands in the National River Water Balances.* Even though the role of wetlands in maintaining Rwanda's hydrological network is recognized, there is currently no quantitative information available on this subject. As some 90,000 ha of wetlands have already been brought under agriculture, and as the RSP would support the intensification of agriculture in up to 20,000 ha of these (involving drainage and/or irrigation), there is a risk that this process will lead to changes in dry season water availability or local climate. Therefore, the project would fund, during the first phase, a study that would result in an analysis of the potential impact of wetland modification on river hydrology in the project area. This study will provide an input into the scheduled formulation and implementation of the Master-plan for Wetland Management (ADB-funded), of which the formulation phase is planned to start shortly. The TORs for the Master-plan do not include the examination of possible changes in water flows at the national scale because of wetland development.

The proposed study would determine: (i) the potential impacts of different types of agricultural development in wetlands on river hydrology; (ii) the possible cumulative impact of modifications in wetland hydrology on river discharges in the project area; and (iii) possible ways to mitigate this impact (such as the protection of certain (types of) wetlands that have a crucial function in the regulation of water flows and/or the proposal of adapted wetland development models, e.g., using buffer zones). In addition, the study would investigate the current hydrological monitoring capacity in Rwanda, and propose a detailed program to monitor the potential hydrological impacts of the RSSP, in particular the impact on downstream water users, for consideration for possible funding under the program's second phase. The outcomes of the study, in combination with the results of the hydrological monitoring program, if supported, would enable a more detailed assessment of the hydrological impact of the RSSP in the program's subsequent phases.

The study would be conducted by a national consultant, with support from an international consultant (TORs are presented in Annex C of EA Report). The outcomes of the study would be discussed among the main stakeholders (i.e., MINAGRI, MINIRENA, MINITERE) in a two-day seminar. The study will use existing data on rainfall and river discharges and will test the hydrological impact of wetland drainage in a number of test sites. It is proposed to split the 3 months of international consultancy in two periods of 6 weeks in order to allow for data collection in the meantime (by the national consultant). It is essential that, due to Rwanda's complex hydrology, monitoring be continued throughout the life of the project.

- (c) *Testing of Biological Vector Controls for Malaria and Bilharzia.* Three mitigation measures are proposed: (i) field level environmental training program which would include a module on these diseases (describing vectors, vector control, prevention, symptoms, medication, etc.); (ii) test on the possibility to use biological vector control measures; and (iii) include the incidence of malaria and bilharzia in the environmental monitoring program. In addition, resources would be made available for health care activities (medications, mosquito nets, etc.) in case there would be an outbreak of malaria or bilharzia in a project area. It is proposed that the vector control test be undertaken by a

national consultant (4 months), supported by an international consultant (1 month in project year 1) and in cooperation with the PSCU and MINAGRI; TORs are included in Annex D of the EA Report. It is recommended to have the national consultancy implemented by the Ministry of Health (MINISANTE). In the test, the suitability of a number of biological control measures will be examined (e.g., use of different fish species, removal of water plants). The results of the test would be included in the field level training program.

- (d) *Environmental Screening Procedures.* The project would adopt stringent environmental screening procedures, as part of the sub-project appraisal and approval procedures. In order to facilitate the environmental appraisal of subprojects, the PSCU would employ a national environmental specialist, supported as necessary with periodic interventions by an international consultant over the program's first 3 years. As part of the subproject appraisal, the project environmental specialist would be required to examine the potential environmental impact of the subproject. Although the environmental specialist is expected to be familiar with EA, if needed he would receive additional training in the subject matter. The environmental screening procedure is shown in Annex E of the EA Report. In the environmental screening procedure, the PSCU environmental specialist would apply the wetlands assessment methodology to be developed under the GEF-supported Critical Ecosystem Component. The application of this methodology, together with the results from the hydrological study, would provide the basis for the preparation of a list of sites which, due to their high value for biodiversity and/or role in water resources conservation, would be excluded for development under the project. RSP will not support subprojects located inside protected areas. This list would be discussed with the relevant ministries, local administrations, and stakeholders, so that the methodology behind and justification for exclusion becomes transparent and clearly understood. The wetland assessment methodology and the results of the hydrological assessment should be completed by the end of project year 1.

Proposed wetland sites, not previously excluded through the application of the wetland assessment methodology described above, would be subject to regional assessments. As the rehabilitation component design has adopted a catchment approach, regional assessments would be applied on a catchment basis. The justification of the regional assessment would be to reduce the need for subproject-specific EAs. Where a regional assessment demonstrates that project interventions are unlikely to pose risks to the environment due to local characteristics (e.g., highly degraded environments), no further environmental analysis will be required for individual sub-projects. The RAs will be prepared by national consultants. The regional and sub-project specific environmental assessments would be reviewed by the PSCU environmental specialist and would need to be approved by the Ministry of Land, Human Resettlement, and Environment (MINITERE). In case of doubt about the environmental impact of a project or the quality of the environmental assessment, the environmental specialist could make field checks. In addition, the environmental specialist would be required to visit the project sites after implementation to check if the mitigation measures have been implemented. Currently, there is very little capacity in Rwanda to conduct environmental assessments and RSP, in collaboration with MINITERE/GEF, would support adequate capacity building in this field. A sample environmental screening list in the form of an impact questionnaire checklist and a list of potential mitigation measures have been prepared and included in Annexes F and G, respectively, of the EA report. The environmental assessments would be funded under the Monitoring and Evaluation activities of PSCU.

- (e) *Environmental Capacity Building.* **At the central level**, a project environmental specialist would be recruited (and trained in environmental [impact] assessment [4 weeks], if needed) as well as wetland ecohydrology (2 weeks). These training courses would be held at qualified international institutes in

the region, possibly in Kenya or Uganda (project year 1). In view of the potential environmental implications of the project and the limited environmental capacity currently available in Rwanda, the PSCU environmental specialist would be supported by an international environmental consultant. This consultant would assist in the fine-tuning of the environmental screening procedures and the environmental monitoring program, the development and organization of the environmental training courses, the delegation of environmental responsibilities to the prefecture level, etc. The international consultant would work in Rwanda during the first three years of the project, on average spending 4 months/year in country (TORs are added in Annex H of the EA Report). Through on-the-job training by the international consultant, the national environmental specialist is expected to take over full environmental responsibility of the RSP for the remaining years of the project.

In addition, a training course in environmental assessment would be organized in Kigali (project year 1). It is scheduled to have some 25 to 30 participants from MINITERE, MINAGRI, MINIRENA, the 6 prefectures participating in the project (staff from the prefecture offices of MINAGRI and/or MINITERE), the National University of Rwanda, the Rwanda Institute for Science and Technology, and the Centre for Education (the latter three being research and education institutes working in the environmental field, and candidates for conducting EAs). The training would be given by an experienced international consultant, in collaboration with the PSCU environmental specialist and a national consultant. An outline of the EA training is provided in Annex I and the TORs are presented in Annex J of the EA Report. It is scheduled to have a two-week refreshment EA course by the end of Phase One (project year 4).

**At the prefecture level**, a one week environmental training course would be provided to prefecture level staff of MINAGRI and MINITERE, and representatives of local organizations, such as NGOs and Commune Development Committees (CDCs). The training would address environmental assessment, environmental management of wetlands and cultivated hillsides, and environmental monitoring. These training courses would be organized in the 6 prefectures participating in the RSP. The training manual and the course program would be designed by an international consultant in collaboration with the project environmental specialist, and the training courses itself would be organized by the project environmental specialist in collaboration with MINITERE and MINAGRI (project year 2). Two months of national consultancies would be made available to support the project team and MINAGRI in the implementation of the courses. A refreshment course of 3 days would be organized by the end of the Phase One (project year 4). It is envisaged that the same EA specialist responsible for the EA training in Kigali would develop the manual and training program for this course, TORs are provided in Annex K of the EA Report.

**At the district level**, a 3-day training sessions in environmental management would be organized for every participating CDC. These training sessions would principally serve the purpose of awareness raising on environmental issues. Topics would include erosion control, role of wetlands in the national hydrological system, biodiversity, malaria and bilharzia control, etc. The manual and the course program for these training sessions would be prepared by the PSCU environmental specialist in collaboration with MINAGRI and MINITERE. The first courses would be organized by the project environmental specialist; it is expected that prefecture level staff, by participating in the teaching of the first training sessions in their respective prefecture, would gradually be able to take over the organization and implementation of the training sessions. It is envisaged to have a 2-day refreshment training session by the end of the project, organized by the prefecture level staff. These sessions would also serve as a way to discuss the local environmental impact of project activities with prefecture staff.

- (f) *Environmental Review of the Project after Phase One.* Finally, it is proposed to conduct a relatively extensive environmental review after Phase One of the project. This would involve an international EA specialist (8 weeks) backed up by a national consultant. In addition, an environmental specialist should participate in supervision missions, in particular during mid-term review. The environmental review would propose, based on the experiences of the first phase, an updated environmental mitigation plan for the subsequent phases two and three. In addition, this environmental review would identify the subsequent capacity building needs, determine the replenishment requirements of the environmental assessment fund, and propose an expanded environmental capacity building program for phases two and three. Particular attention would be given to the required training activities at the field level.

### **3. Environmental Monitoring Program**

4. The implementation of the environmental monitoring program will be integrated into the overall RSP monitoring program to be implemented by MED. Of particular relevance for the environmental monitoring is the GEF component, Integrated Management of Critical Ecosystems, that would support an assessment of wetland biodiversity in Rwanda. With the PDF-B funds currently at the disposal of the GEF preparation team, a biodiversity assessment of a limited number of wetlands of global significance would be conducted, a more comprehensive biodiversity assessment would be carried out during implementation of the GEF-funded component. RSP would fund the monitoring of sub-project activities, whereas the GEF component would cover the monitoring of activities related to protection and sustainable management of critical ecosystems.

5. From the interviews conducted during the preparation of this EA, it is clear that the amount of data currently available as well as the capacity for environmental monitoring in Rwanda is limited. There is no information system regarding uplands, and the most detailed information available on wetlands is an Access database constructed in the period 1989-1992 at MINAGRI, containing climatological, pedological, hydrological and agricultural data for all wetlands in Rwanda. MINAGRI's database covers a total of 3017 ha wetlands; major wetlands have been sliced up into 2 to 4 km long stretches. In addition, 1:50000 maps are available with the location of the wetlands (not in electronic format). Agricultural use of the wetlands is updated up to about 1990-1992 and cannot be considered accurate anymore. The database is managed by the Division's Genie Rurale of MINAGRI. As a result, prior to the finalization of the monitoring program, a review of existing baseline information will be required. Where data are missing, either baseline studies will have to be completed prior to field monitoring, or suitable indicators selected as replacements supported by the necessary baseline information. Based upon the identified potential environmental impacts discussed above, and taking into account the current capacity for environmental monitoring, a number of illustrative indicators have been suggested to monitor the effectiveness of the EA's proposed mitigation measures. These will be reviewed and revised, where needed, during preparation of the first annual work plan. Indicative costs of the Environmental Monitoring and Mitigation Plan are presented in Tables 8 and 9 of the EA Report.

### **4. Monitoring and Evaluation of Pest Management Practices**

6. The dissemination of integrated pest management (IPM) practices through Farmer Field School and other appropriate methods would be a major activity under the Agricultural Services component. Progress in the introduction and implementation of integrated pest management as well as proper handling and use of pesticides should be monitored regularly to ensure that the risks to human health and environmental contamination are completely eliminated or reduced to the barest minimum. When necessary, field staff should be able to manage risks efficiently by providing remedial measures. In this project, monitoring means following up on the pattern of implementation of sub-projects under the Agricultural Services component and others that are funded under the Rural Technology Facility to ensure that staff continue to comply with established procedures and guidelines

defined in the Pest Management Plan (PMP) and the Pest Management Operational Manual (PMOM) which have been prepared under the ongoing Agricultural and Rural Market Development Project (ARMDP). Pest management activities under RSP would include the following:

(a) Monitoring of:

- the progress in the introduction of IPM practices in agricultural production;
- the patterns of chemicals management;
- the negative effects of chemicals pesticides to human health and the environment;
- the nature, maintenance and use of protective gear by field staff.

(b) Training programs to build and strengthen capacities in the field implementation of integrated pest management practices in agricultural production.

7. A questionnaire for the monitoring and evaluation of subprojects that relate to management practices of chemical pesticides and the rate of field adoption of IPM practices is included in the PMOM. This questionnaire is to be used as a guide only and should be modified appropriately to make it relevant to the particular subproject implementation environment. Regular monitoring should be conducted every 3 months. The outcome of monitoring process and proposed adjustments to correct inadequacies identified during monitoring should be reflected in the District and MED reports for sub-projects under the Agricultural Services Component and others that are funded under the RTF.

8. OP 4.09 stipulates that, "In Bank-financed agricultural operations, pest populations are normally controlled through IPM approaches", and that, "The Bank may finance the purchase of pesticides when their use is justified under an IPM approach". This poses the crucial questions: How is an IPM approach defined? And when is pesticide use justified under an IPM approach? OP 4.09 defines IPM as a mix of farmer-driven, ecologically-based pest control practices that seeks to reduce reliance on synthetic chemical pesticides. It involves: (a) managing pests (keeping them below economically damaging levels) rather than seeking to eradicate them; (b) relying, to the extent possible, on non-chemical measures to keep pest populations low; and (c) selecting and applying pesticides, when they have to be used, in a way that minimizes adverse effects on beneficial organisms, humans, and the environment. The following checklist provides some guidance in determining whether or not pesticide use is in line with IPM practices.

### **Checklist: Determining whether chemical pest control is justified**

#### **Examples of positive criteria indicating that pesticide use is in line with IPM principles:**

<input type="checkbox"/>	Users are aware of approaches to reduce reliance on chemical control and understand the ecological and subsequent economic implications of pesticide use;
<input type="checkbox"/>	Non-chemical methods of agro-ecosystem management to enhance natural mortality of the pest concerned are employed as a first line control option;
<input type="checkbox"/>	Decisions to apply external inputs as supplementary control are made locally, are based on monitoring of pest incidence and are site-specific (as opposed to centrally issued blanket instructions);
<input type="checkbox"/>	Use of pesticides is economically justifiable in terms of having a long-term positive effect on net farm profits;
<input type="checkbox"/>	Use of non conventional pest control inputs (biological control, biopesticides, growth regulators, pheromones, etc.) have been explored as alternatives to conventional pesticides.

#### **Examples of negative criteria indicating that pesticide use is most probably not in line with IPM principles:**

<input type="checkbox"/>	Pest control schemes based on preventative calendar spraying, or other use of pesticides without use of ETLs and monitoring;
<input type="checkbox"/>	Input packages or rural credit packages standard include pesticides (and therefore assume that they are needed regardless of the actual field situation);
<input type="checkbox"/>	Pest control schemes have been centrally designed and do not take into account local and seasonal variations;
<input type="checkbox"/>	Pesticide use is likely to lead to long term path dependency, pest resurgence, secondary pest outbreaks or pest resistance;
<input type="checkbox"/>	Farmers have not been involved in decisions to apply pesticides;
<input type="checkbox"/>	Free or subsidized distribution of pesticides;
<input type="checkbox"/>	Use of persistent and/or non-selective pesticides such as broad-spectrum pesticides or products comprising various active ingredients that significantly affect non-target organisms and reduce the natural control capacity of the agro-ecosystem;
<input type="checkbox"/>	Lack of cost-benefit analysis demonstrating positive impact on farmer net incomes;
<input type="checkbox"/>	Advisory services linked to project implementation have an interest in pesticide use.

In the above cases, supporting documentation would need to be made available to explain why pesticide use is necessary and what steps are being taken to transform towards IPM-based production.

**Examples of biases towards chemical control:**

<input type="checkbox"/>	Pesticide use is directly or indirectly subsidised;
<input type="checkbox"/>	Advisory services have a financial interest in selling pesticides;
<input type="checkbox"/>	Extension schemes/programs/messages are oriented on chemical control;
<input type="checkbox"/>	Extension staff receive commissions on pesticide sales;
<input type="checkbox"/>	Extension schemes are impeded by staff and funding constrains, and the actual plant protection advice to farmers comes from agro-chemical salesmen instead of extension staff;
<input type="checkbox"/>	Government agricultural budget allocations favour input supply over human resources development;
<input type="checkbox"/>	Agricultural credit schemes include compulsory procurement of pesticides;
<input type="checkbox"/>	Plant protection research overemphasises on chemical control;
<input type="checkbox"/>	Farmers have little or no access to information about alternative approaches that reduce reliance on chemical control.

**Additional  
Annex 12**

**Letter of Rural Development Policy**

**RWANDA: RURAL SECTOR SUPPORT**

**I. INTRODUCTION**

1. Rwanda is still in the process of recovering from the unparalleled tragic human and economic destruction in 1994. Since the Government of National Unity assumed office in July 1994, it has been able to restore peace, put effective governance on a sustainable path, attain socio-economic recovery as well as lay the basis for sustainable economic growth. This transition from emergency to sustainable development has required exceptional efforts by the Government as it had to put in place policies and programs to rebuild the society, and facilitate national reintegration and reconciliation. However, Rwanda continues to need support to overcome the legacies of the genocide and the destruction of human capital and to focus on the difficult agenda of long-term development and poverty reduction.

2. An overwhelming portion of Rwanda's population lives in the rural areas and that population is growing rapidly. This makes measures to raise agricultural output and employment the cornerstone of poverty reduction efforts in Rwanda. The overall objective of Rwanda's rural development policies is to revitalize the rural economy through measures that removes the constraints that exist on the supply and demand side of the agricultural sector and thereby to overcome the subsistence orientation of the country's agriculture. These measures will aim at raising the productivity of all the resources at the hand of rural poor and achieving sustained broad-based growth in the sector. Ultimately, they will contribute to the increase of rural incomes, the reinforcement of national stability, and eventually the reduction of poverty.

**II. BACKGROUND**

**A. Recent Economic Development**

1. Rwanda's economy experienced rapid growth of GDP and per capita incomes and economic stability throughout the 1960s and 1970s and which continued until the massive terms of trade shocks in the 1980s. The real GDP growth of 6.5 percent per annum in 1973-80 declined to an average of 2.9 percent in 1980-85, and further to -2.9 percent in 1989-91. Following the economic slow-down and stagnation, GDP per capita, which had risen from US\$70 in 1973 to a peak of US\$354 in 1989, fell to US\$245 in 1993. The prolonged decline in domestic economic production and incomes resulted in increased poverty and poorer social indicators, stagnant government revenues, a steep decline in exports, and increased dependence on external assistance.

2. The genocide of 1994 caused a further decline in the already low level real GDP by almost 50 percent, bringing GDP per capita to as low as US\$117. During the subsequent period, the annual rate of inflation rose to as high as 64 percent. With the restoration of peace to most areas of the country and new policy measures to stimulate the private sector and large inflows of external assistance, the real GDP growth rate rebounded by 37 percent in 1995. The economy continued to grow at 12 percent in 1996, 11

percent in 1997 and 10 percent in 1998. Inflation fell to 17 percent by end 1997 and further to an average of 6.8 percent in 1998. In 1999, Consumer Price Index (CPI) declined by 2.5 percent, reflecting the increases in food production and appropriate monetary policies. Although the general trend of economic expansion continued in 1999, the economy grew at a much lower rate than before. The real GDP grew by an estimated 5.9 percent in 1999 and is projected to expand at a rate of around 5 percent in 2000, while the CPI would rise by 2-3 percent. The main sources of growth have been agriculture and construction all throughout this period. The external trade situation has also improved albeit slightly in 1999. The current account deficit, excluding official transfers, amounted to 15.1 percent of GDP compared to 16.9 percent in 1998. The gross international reserves increased from 6 months of imports end 1998 to 7 months end 1999.

3. Moreover, the Government has been making great efforts to consolidate the fiscal situation and has made significant achievements over the past years. The achievement can be attributed mostly to the efforts made to improve tax administration and to rationalize tax measures. The revenue-to-GDP ratio has risen from 4 percent in 1994 to 10.4 percent in 1998. A new income tax law was adopted in 1997, reducing the maximum personal and company income tax rates and subjecting public enterprises to income taxes. In addition, excise taxes on consumption goods were significantly increased and brought onto an ad valorem basis. In 1998, the Rwanda Revenue Authority (RRA) commenced operations and is expected to significantly strengthen the tax administration. The revenue-to-GDP ratio in 1999, however, stayed shy of the level achieved in 1998 by 0.7 percent. The lower than expected value of imports, combined with lower duty rates and problems in the customs administration, contributed to this performance. A draft VAT law is under preparation and was submitted in March 2000 to the National Assembly.

### **III. POVERTY DIMENSIONS AND ITS REDUCTION**

#### **A. THE DIMENSIONS OF POVERTY**

1. Poverty in Rwanda has been a structural phenomenon but has worsened significantly since the 1980s and, particularly, after the genocide. The ability of a typical household to afford basic necessities such as food, shelter, clothing, medical care, and educational services has significantly eroded in the 1990s. The proportion of households below the poverty line is estimated to have increased from 40 percent in 1985 to 53 percent in 1993 and 70 percent in 1996. Social indicators, particularly survival rates, have worsened considerably. Owing to genocide, many households have become vulnerable, especially those headed by females and minors. Recent data indicate the further spread of HIV/AIDS epidemic in the country, especially in the rural areas. About 11 percent of the rural (up from 1.3 percent in 1986) and 11.6 percent of the urban population 12 years old and above were found to be seropositive. An estimated 22,000 people between 15 and 49 years of age died of AIDS in 1998. Malnutrition remains a severe health problem. Significant and rapid poverty reduction and economic development are needed to improve conditions of living in the country.

#### **B. POVERTY REDUCTION STRATEGY**

2. The government of Rwanda's vision for poverty alleviation encompasses the following key components:

- (a) good governance, democratization, national conciliation to ensure national political stability and security, grassroots participation in development and decision making;

- (b) macroeconomic stability and economic reforms and programs that empower the population and raise agricultural productivity, rural incomes, and off-farm employment;
- (c) promotion of an all-inclusive economic system that allows effective participation of all social and economic groups and creating an enabling environment for private sector development, in addition to increasing the effectiveness of the state while reducing the role of the public sector;
- (d) human resource development in all its components; and
- (e) promotion of regional economic integration by facilitating and reducing the costs of access to the ocean ports.

3. The Government, with the support of the international community, has been working to address the consequences of the genocide and the inherited socio-economic problems, resettle returning refugees, promote national reconciliation and rehabilitate administrative, judicial and social institutions. Local elections are to be held so as to ensure broad participation in the political and economic arenas at grassroots level. Progress has been made in the trial of detained persons for their alleged involvement in the genocide. Government continues to explore ways to deal with the cases of the accused persons in a fair and expeditious manner. In 1998, the Government took the decision to release 10,000 detainees for lack of adequate evidence and the process of releasing the eligible detainees is underway. The National Assembly is considering new legislation to further expedite the trials through traditional forms of justice at the community level leading to non-custodial sentences.

4. With the assistance from the World Bank and the International Monetary Fund, the Government of Rwanda adopted a second Policy Framework Paper (PFP) in October 1999. The current phase of the reform program is supported by the ERC of IDA and the 3-year PRGF arrangement of IMF. The paper expresses our strong commitment to create an enabling policy environment for the development of a market-oriented systems through reforms in the institutional, regulatory and incentives framework. Steady progresses have been made on the macroeconomic policy framework as shown in the preceding paragraphs. The continued GDP growth and stable inflation rate indicate the prudent macroeconomic management of the current administration. The fiscal revenue shortfall experienced in 1999 was appropriately dealt with by the budget cut made during mid-year budget review, which was presented to and approved by the National Assembly. In line with the policy framework, the social sector spending was protected from the cuts.

5. The implementation of the reform program is generally on schedule. The amendment to the civil code to eliminate gender discrimination on inheritance and property rights was passed by the National Assembly and signed into law by the President in November 1999. A new banking law was adopted in August 1999 and in February 2000. The BNR (Central Bank of Rwanda) has issued new prudential and capital requirements in accordance with the new bank law, providing the basis for the restructuring of the banking sector.

6. The Government is also in the process of reducing the level of State intervention in input distribution, crop production, processing and marketing activities. It has liberalized the processing, marketing, and export of coffee which has enabled farmers to receive higher and competitive producer prices without resorting to government subsidies. More detailed discussion on the progress of the reform program, relating to the rural sector, is described in the subsequent paragraphs.

### C. POVERTY REDUCTION AND THE RURAL SECTOR

7. The rural sector, especially agriculture, is a vital component of Rwanda's economic recovery process as it makes an important contribution to GDP, employment and export revenues. Agricultural growth has, however, slowed down quite significantly over the last two decades, leading to a continuous increase in the level of poverty. The annual growth rate of aggregate production has dropped to -2.0 percent by the early 1990s from 0.8 percent in the early 1980s. As a result, per capita food production (in kilo calories) by Rwandan farmers dropped by 25 percent, from 2,055 per person per day in 1984 to 1,509 per person per day in 1991. The decline in per capita food production is partly due to Rwanda's high rate of population growth and extremely limited access to land, with an average population density of 574 people per square kilometer of cultivable land, the highest in Africa. The civil war and genocide in 1994 have greatly contributed to the sharp deterioration of the situation in the agricultural as well as other sectors of the country's economy. Total agricultural production declined sharply (40 percent), recovering only recently to about 75 percent of its 1990 level. Yields have also declined for most crops. As a result, per capita food production (in kilo calories) further declined from 1,509 per day in 1991 to an average of 1,210 per day in 1995-96. Since over 90 percent of the population is dependent on agriculture, the decline in agricultural production has meant widespread poverty in the rural population as well as high cost of living in the urban areas. The country is now faced with the challenges of feeding the current population of 8 million and improving the well-being of the population beyond the 15 years ahead.

8. Agriculture also accounts for the overwhelming share of Rwanda's export. Agriculture in the early 1980s accounted for less than 50 percent of total exports. This percentage steadily increased to 97 percent in 1987 because of the near cessation of mineral exports, but declined to 90 percent in 1989, following a recovery of mineral exports. Coffee has continually been the most important agricultural export. Tea production started in the 1960s and its rapid expansion has made it the second largest source of foreign exchange, accounting for 15 percent of total export receipts in 1989. Nevertheless, Rwanda's export performance is very low with export receipts of about US\$16 per capita, one of the lowest in Sub-Saharan Africa (SSA) and way below the average of US\$100 for SSA, excluding Nigeria and South Africa. Due to the sharp (60 percent) decline in coffee exports, the value of total merchandise exports decreased from an average of about \$60 per person during 1970-79 to only \$13 per person in 1991. This adversely affected the external current account and budget deficits, and created severe imbalances in the economy.

9. To systematically address the problem of poverty reduction, the Government is currently preparing a Poverty Reduction Strategy Paper (PRSP). The rural development policies laid out in this document fall within this context. The Government has reaffirmed the importance of the agricultural sector for long-term development and shown a strong commitment to revitalizing the rural economy through intensification and commercialization of agricultural production and diversification of economic activities in the rural areas. The creation and maintenance of enabling policy conditions for the development of market-oriented agricultural systems through reforms in the institutional, regulatory, and incentives frameworks are indicated as the key areas in the medium term. In order to achieve those objectives, the promotion of export competitiveness of agricultural products through further liberalization of the trade, exchange, and investment regimes would be pursued.

#### **IV. THE AGRICULTURAL DEVELOPMENT PROBLEM IN RWANDA**

1. Agriculture in Rwanda is carried out on small farm holdings averaging 1 hectare per family in fragmented lots. Over half of the farm holdings are less than 1 hectare in size, with average farm holdings fragmented into 14 parcels of land. Coffee, the largest export crop, is produced on very small stands, while tea is produced by small village associations, industrial plantations and private farms. The small agribusiness sector is comprised of beverages, textiles, agricultural tools and implements and household products.

2. Agriculture in Rwanda has been for the most part one of subsistence. A large number of rural households are, however, increasingly becoming net purchasers of food because of the declining land productivity and declining incomes which are responsible for a deteriorating food security situation. The challenge facing rural development in Rwanda consists in achieving increases in labor productivity in the farm sector and in significantly expanding off-farm employment in rural areas. An expansion in off-farm employment would reduce the labor pressure and facilitate productivity increases in the farming sector. It would also broaden markets by raising the effective demand for agricultural surplus. In general, agricultural productivity has been declining in Rwanda for over a decade due to the following reasons:

- (a) over-exploitation of cultivated land, which is linked to high population densities (one of the highest in the world) and the absence of any additional non-cultivated land;
- (b) increasing erosion from over-exploitation and reduction of the vegetative cover;
- (c) absence of modern input (chemical fertilizer) use to compensate for the absence of fallow and over-exploitation;
- (d) weak research, extension and other agricultural services (improved seeds, credit, post harvest, etc.) aggravated by the recent genocide;
- (e) absence of tenure security that discourages investment in and improvement on agricultural land; and
- (f) unclear economic policy and regulatory environment affecting agriculture.

3. In addition, the limited size of agricultural markets, inadequate transport facilities, lack of appropriate rural infrastructure, including storage and swamp water control facilities, and weak rural financial services; inappropriate fiscal burden on the sector; and restrictions on labor mobility have adversely affected agricultural growth in the past. The combination of rapid population growth, with limited availability of agricultural land and declining productivity, has resulted in the following set of problems of Rwanda's rural sector:

- (a) increasing labor intensity and declining labor productivity;
- (b) strong subsistence orientation, reinforced by weak commodity and labor markets;
- (c) pressure on local off-farm employment and wages; and
- (d) declining incomes and a deteriorating food security situation.

These problems reinforce each other as limited market orientation reduces the incentive for technology innovation, which is necessary to raise labor productivity and incomes.

#### **A. SUBSISTENCE ORIENTATION AND GROWTH IN RWANDA'S AGRICULTURE**

4. The extent of subsistence orientation among Rwandan farmers has been brought to light through household-level research carried out by Michigan State University (MSU) and the International Food Policy Research Institute (IFPRI) in the late eighties. The research shows that the relative lack of market orientation among Rwandan farmers is due as much to production constraints as it is linked to constraints on the demand side. It also indicates that, with the exception of bananas, 30 percent to 50 percent of farmers grew no surplus to sell on local markets. Their only contact with agricultural markets was to buy food. The ratio of those who neither buy nor sell on local agricultural markets was even higher. The overall situation was not significantly different between land-rich and land-poor households. Moreover, only a weak relationship has been observed between farm size and market participation. There has been much emphasis in the policy debate on supply-side constraints to market oriented growth and, hence, on direct measures to increase productivity. The research referred to above shows clearly, however, that demand side factors also play a key role in the pervasive subsistence orientation among Rwanda's farmers. There are basically two areas of concerns on the demand side: (i) the scope for domestic and foreign demand expansion for existing and potential food and other crops; and (ii) the institutions and infrastructure in the marketing and trading sectors, which link that demand to local suppliers. In other words, constraints to output growth on the demand side are shown to originate from low domestic demand, weak marketing and trading sectors, and low competitiveness in foreign markets.

5. Since the genocide, food imports have increased significantly, due primarily to the drastic fall in domestic production. There may, consequently, be a loosening of the demand constraint for the near future and some scope for expansion of domestic production for local markets. However, it is unlikely that domestic demand can carry local output growth much beyond a short-term recovery to pre-war production levels, in the absence of changes in the structure and environment of Rwanda's agricultural sector to alleviate the constraints emanating from the conditions that are described above. Even then, Rwanda will have to make greater use of foreign markets to alleviate the domestic demand constraint and speed up growth in output.

#### **B. THE AGRICULTURAL SECTOR STRATEGY**

6. The strategic objective for Rwanda's agricultural sector remains poverty alleviation through broad-based income generation. Considering the significance of agriculture in Rwanda's economy, this objective can be achieved only through rapid growth in agriculture. In order to achieve such growth rate, farmers will have to produce quantities beyond the needs of their own households. They will also have to rely on the market to satisfy part of their demand and make production choices, not on the basis of consumption needs, but in function of the best possible use of their resources.

7. The concern about the need to overcome subsistence orientation, whatever its causes may be, arises only as far as it puts a constraint on the rate of technology adoption and thereby slows the pace of intensification and reduces the maximum achievable rate of growth. Overcoming subsistence orientation is critical because the rate of technology adoption that is necessary to spur and sustain growth, not only in agriculture but in the rest of the rural sector and the overall economy, is determined by the rate of commercialization, i.e., the pace at which additional output can be absorbed through local and foreign

markets to yield returns that are high enough to induce continued investment in better technologies.

8. The Government of Rwanda has completed extensive work on the formulation of its agricultural strategy. A Strategy Paper was produced in 1998 which provides a sound basis for detailed implementation work programming. Additional work has been conducted during the last two years to detail the strategic choices and priorities in certain sub-sectors, such as, food crops and livestock. The overall framework for the agricultural strategy reflects a progressive shift towards greater market-orientation, underpinned by intensification in input use, and diversification and specialization in agricultural production. The strategic vision for the agricultural sector includes the following major components:

- (a) investments in rehabilitation of productive infrastructure through improved rural engineering works and management of rural infrastructure;
- (b) rebuilding the institutional structure of agricultural extension and research delivery by integrating the process of research-development with the extension services. In particular, the report states that the extension services should mobilize actors as true partners through using a participatory approach;
- (c) completely restructure the input provision services by promoting private sector involvement in seed distribution and multiplication and in fertilizer provision;
- (d) promotion of regional specialization of agricultural and pastoral activities to: (i) promote coffee in the west and central regions, where the soils are the most fertile; (ii) expand tea and potato production on high altitude zones; (iii) develop production of groundnuts and soybeans in all regions, except on the highlands; (iv) develop rice cultivation in the flooded areas; and (v) promote livestock in the eastern regions, where studies have shown that both dairy and agro-pastoral would have good prospects;
- (e) encourage the formation of professional organizations among farmers, agribusiness operators, input suppliers, and private sector operators;
- (f) introduce improved farming technologies, including small-scale irrigation, that would lead to more efficient land use, encourage private investment in agriculture, and promote rural financial intermediation systems;
- (g) restructure the agricultural economy by increasing areas given to forestry and pasture, developing tea plantations on more areas, reducing the number of farmers by attracting some of the active population to other activities, promoting growth outside of the agricultural sector to absorb the labor coming off the land;
- (h) improve soil fertility through extensive soil conservation and management, and better cultural practices;
- (i) rehabilitation of traditional export crops and diversification into non-traditional exports, including the promotion of processing activities in the dairy and vegetables/fruit sectors;
- (j) development of peri-urban agricultural zones through the promotion of intensive production systems in the green belts around Kigali and other cities.

### C. SECTORAL CHALLENGES

9. Poverty alleviation can be best achieved by raising the productivity of the resources owned by poor people, which is primarily labor. In the context of Rwanda's agricultural sector, raising labor productivity calls for a higher rate of intensification and faster commercialization of production. Given the high rate of population density and growth, it will be necessary to complement the efforts to raise agricultural labor productivity with efforts to raise off-farm employment. There is indeed a strong complementarity between the two objectives for the following reasons:

- (a) labor productivity has to increase for overall incomes in the farming sector to improve and for this to happen the farming sector will have to gradually move from its subsistence situation and become more market-oriented;
- (b) off-farm employment has to expand to reduce the labor pressure and facilitate labor productivity increases in the farming sector, and to stimulate the transition from subsistence to market orientation by raising the effective demand for agricultural surplus; and
- (c) expansion of off-farm employment is impossible without increased labor productivity in the farming sector, due to the adverse effect of low and declining productivity on food prices and wages.

10. Assuming a continuous recovery process until 2002, the World Bank poverty assessment of 1998 estimates the growth rate that would be necessary to bring poverty down to its level of the mid-eighties by the year 2012 at 5 percent. An average growth rate of 7 percent would cut poverty levels to below 20 percent, which is less than half of the levels of the mid-1980s. It is impossible to achieve such high rates of growth without greater market participation by Rwandan smallholder farmer. This in turn would call for: (i) the reduction of incentives among smallholders for autarchy by encouraging production for the market and reducing the risk of relying on the market to satisfy food consumption needs; (ii) the alleviation of the domestic demand constraints associated with the current production structure and trading systems; and (iii) the acceleration of the rate of adoption of improved inputs. Against this background, the strategy of developing Rwanda's agriculture over the next 10 to 15 years would focus on:

- (a) full exploitation of the productivity potential in an environmentally sustainable way;
- (b) removal of the bottlenecks in local transport systems and improvement in post-harvest technologies;
- (c) development of demand responsive and sustainable agricultural services systems in order to sufficiently generate and effectively disseminate adequate cropping and post-harvest technologies; and
- (d) fostering of the development of off-farm productive activities in the rural areas.

## **D.1. THE COFFEE AND TEA SECTORS**

11. The government has recently initiated reforms in the tea and coffee sectors which are expected to increase production for exports and enhance rural cash incomes. Regarding tea, the government enacted a 37 percent increase in producer prices of tea in the beginning of 1999. It recognizes the importance of adopting a framework for the operation of the tea sectors, including a revision of the legal mandate and attributions of OCIR-Thé, an institution under public ownership with commercial regulatory and promotional responsibilities. The policy is to convert it into an entity responsible for regulating, promoting, and monitoring the performance of the tea sector. A draft policy paper has been prepared and is to be discussed and eventually adopted by the Cabinet. Furthermore, the assets of the tea factories and the associated public-owned estates are to be sold to private investors, with minority stakes reserved for cooperatives of tea outgrowers, in reaction to the demand by the latter for participation in factory ownership. Moreover, a Tea Board, as an industry-based organization, is to be established to promote the development of the tea sector.

12. Changes in the coffee sector, including the removal of the coffee export tax in 1999, have increased the producer prices and attracted a number of new firms into the marketing and processing of coffee. As a result of the government's effort to promote producer association in the coffee sector, the latter are playing an increasing role in the sector's activities, such as in the distribution of modern inputs and the direct sale of coffee to exporters. The planned transformation of OCIR-Café into an industry-based organization, with a mandate limited to regulation, monitoring, and promotion, including research and possibly the provision of extension services, is the next significant step in the reform program. Furthermore, consistent with the liberalization of the sector, the law abolishing the Coffee Stabilization Fund was adopted by the National Assembly in 1999.

## **D.2 THE FOOD PRODUCTION PRIORITY PROGRAM**

13. To attain agricultural productivity and competitiveness, the Government has also embarked on a strategy of intensification of production, regional crop specialization, and promotion of commercial agriculture outside of the traditional export sector. The application of this strategy entails choice of crops that will ensure rational and optimal utilization of Rwanda's limited land resources, sustainability of the agricultural production system as well as competitive production. It is anticipated that the population, that is engaged in and dependent on agriculture, will progressively decline with the growth of commercial agriculture and the increase in urbanization, aided by the expansion of the service and industry sectors. It is anticipated that in the next 30 years, the population engaged in agriculture should have dropped to less than 50 percent. Under these circumstances, it is pertinent that the agricultural research and extension services focus on promoting crops that will ensure food security and stability of the nation. The crops of choice for the future have to give broad consideration to a number of factors. Some of these factors include the following:

- (a) the crop should have wide adaptability in most of Rwanda's agro-climatic zones;
- (b) the crop should have a high nutritive value relative to other crops and should give relatively higher nutritive element yields per unit area on annual basis;
- (c) the crop should be able to have relatively higher response to modern inputs, such as, fertilizers

and improved agricultural practices;

- (d) due to limited capacity to undertake research, the crops of choice should be those which have been well researched elsewhere, and technology and know-how on their production are well advanced so as to ease acquisition of the relevant technology on production and use of such crops;
- (e) the production of such crop should be compatible with other farm enterprises and their production should be complementary to other farming sectors such as livestock and agro-industry;
- (f) the crop should favor integration with other cropping patterns, such as, crop rotations and inter-cropping as well as promote optimization of the limited land resources;
- (g) the crop should be easy to store, transport and market;
- (h) the crop should readily suit the use of modern farming systems, especially agricultural mechanization;
- (i) the crop should have wide marketability inside the country and in the region;
- (j) the crop should have relatively higher returns to investment;
- (k) there should exist severe deficit in terms of production compared to current requirements.

14. In accordance with the above criteria, research and extension services in the future will target several key food crops, including maize, rice, and beans, plus livestock, and to a lesser extent sorghum and cassava. The program aims at increasing livestock production for milk and meat to a level where farming may be partitioned equally between crop and livestock activities. When this is achieved, the importance of beans in the national diet as source of protein may decrease as more animal products become available in the common people's diet. The increase in the production of maize and rice will enhance the realization of this goal as more crop residues and agro-industrial by-products from these crops find their way into livestock feeding. The support to sorghum and cassava will be targeted to the zones with low fertility and rainfall. Irish potato will also be promoted on the lava soils of high altitude. For the remaining key crops that are regular in the national diet, including sweet potatoes, bananas, peas and groundnuts, research and extension services will be relatively on the lower scale. The support to other crops, such as fruits and vegetables, will be appraised on case-by-case basis.

### **D.3 POLICY CHOICES**

#### ***1. Exploitation of the Productivity Potential***

15. In order to fully exploit the production potential in Rwanda's agricultural sector, it is critical to: (i) make investments for the improvement of agricultural infrastructure in arable areas to expand the scope of production; and (ii) develop practical management arrangements to exploit and maintain that infrastructure. Marshlands and hill-side areas have particular significance and potential for development. Currently, about 50 percent of the 165,000 ha marshland in Rwanda are being farmed. Of these cultivated marshlands, only 5,000 ha have had any type of improved infrastructure suitable for efficient use of the

land. Moreover, the infrastructure in approximately 4,000 ha of this last category of farmed marshlands is in serious need of rehabilitation and requires immediate measures.

16. The rehabilitation of farmed marshlands and hill-sides must be accompanied by appropriate measures to diffuse among farmers suitable and sustainable technologies and practices to efficiently manage marshlands and hill-side crops. Significant efforts would need to be made with respect to R&D, technical advisory, and training services aimed at farmers. Beneficiary community participation in the design, construction, management, and maintenance of land and water conservation infrastructure would also be essential for the sustainable long-term development in these areas. The training of and institutional support to community groups and private operators would be an important part of the strategy to exploit the production potential.

## ***2. Removal of Bottlenecks in Local Transport Systems and Improvement in Post-Harvest Technologies***

17. Bottlenecks in the local transportation sector affect negatively the process of commercialization and thus the level of competitiveness of Rwanda's agricultural sector. The upgrading and expansion of small-scale transport infrastructure in rural areas are the priorities in achieving this goal. In addition to rehabilitating the infrastructure, the increase in the means of transportation, available to farmers, would accelerate the process of agricultural commercialization of the agricultural products. The introduction of simple and cost-effective Appropriate Means of Rural Transport would contribute to this end. Similarly, better access by farmers to efficient post-harvest technologies, including storage and processing, would effectively contribute to reducing the significant post-harvest losses. Both would raise rural incomes and provide incentives for farmers to invest in better technologies and raise productivity.

## ***3. Improving Agricultural Services Delivery Systems***

18. The efficient and effective systems to deliver agricultural technologies to farmers are prerequisite for improving farmers' knowledge on the management and maintenance of crops and modern inputs. We have already set the strategies for the research and extension, which focus on adaptive research, decentralization of the delivery systems, and the greater involvement of beneficiaries. Further efforts will be needed to strengthen Rwandan research institutions, both public and private, integration of farmer organizations and private sector operators in the design and implementation of the technology dissemination policies, and the empowerment of farmer associations and the improvement of skills of SLOs.

## ***4. Exploiting Sectoral Linkages More Effectively***

19. Tradable crops are the entry point to foster commercialization and intensification in the subsistence sector. The primary candidates in the case of Rwanda would be the two industrial crops, coffee and tea. Significant institutional and technological skills have already been accumulated in the production and trading of these crops. It would, however, be necessary to add other cash crops to these two that can be diffused amongst smallholder farmers across broad areas of the country. In order to do that, there should be strong R&D efforts to explore the possibility of different demand-elastic crops for adoption by farmers. The benefit of expanding production of such industrial as well as other tradable food and non-food crops could be tremendous, even for the traditional food crop sector. Through their multiplier effects, agricultural tradables are the most effective means of achieving rapid and broad-based income growth in Rwanda's rural sector. The production and sales of these crops do not only generate income directly but also indirectly through the demand and consumption linkages.

20. The promotion of off-farm production activities in rural areas is to be seen against the background discussed above. The off-farm sector has a significant role to play, not only in creating employment and generating incomes, but also in reinforcing growth in the rural farm sector. A more buoyant off-farm-sector creates demand for food and other local agricultural goods, thereby contributing to the loosening of the demand constraint referred earlier. Furthermore, most of these off-farm sector activities would be agriculture-based and would add value to agricultural activities. Moreover, a growing off-farm sector induces demand for off-farm goods on the part of farm households and hence provides incentives for output expansion, while stimulating the commercialization process through which these households can derive the incomes that would give them access to these goods. These linkages highlight the importance of off-farm sector development and growth for the realization of the objectives of agricultural intensification and commercialization.

#### **D.4 THE NEED TO PURSUE ONGOING POLICY REFORM**

21. The outcome of the above strategies would require the continuation and rapid completion of the policy reforms that have been initiated by the Government of Rwanda over the last few years. In particular, the reform of land use policies are to be pursued in line with the need to encourage long-term investment by producers and other economic operators in cropping technologies. Adequate policies for the access to and use of agricultural land are crucial for the intensification and productivity improvement in the agricultural sector. The development of new land, fit for cultivation, and the restoration of long-term fertility require a transparent legal and institutional framework that establishes property and user rights. The establishment of transparent rights is pertinent to sustained investments in soil conservation and land improvement. The Government is currently preparing a draft Land Law which is scheduled to be adopted by June 2001.

22. A further area, where policy reforms need to be continued, relates to the privatization of the coffee and tea sectors. Renewed growth in these sectors is crucial in the economic revitalization of the rural economy. A new policy framework needs to be created, which encourages long-term investment by private operators to upgrade processing facilities and develop marketing and export capacities. The new framework should also create the scope for greater involvement and responsibility on the part of growers and their organizations. It is important to note at this junction that a Privatization Law has been already adopted by the Government. Its implementation is currently underway but needs to be accelerated. The necessary efforts will be made to complete the privatization process in these two very important sub-sectors.





