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Report No. 12465-RW

Rwanda
Poverty Reduction and Sustainable Growth

May 16, 1994

Population and Human Resources Division
South-Central and Indian Ocean Department
Africa Region

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MICROGRAPHICS

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CURRENCY EQUIVALENT

Currency Unit	=	Rwandese Franc (FRW)
1992 US$1.00	=	FRW 125 (1st Half)
1992 US$1.00	=	FRW 140 (2nd Half)
1993 US$1.00	=	FRW 145

WEIGHTS AND MEASURES

Metric System

FISCAL YEAR

January 1st to December 31st

ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
DHS	Demographic and Health Surveys
ESN	Economic Strategy Note
MOH	Ministry of Health
HIV	Human Immunodeficiency Virus
IEC	Information, Education and Communications
KAP	Knowledge, Attitudes and Practice
MOH	Ministry of Health
MINITRAPE	*Ministère de Travaux Publics et de l'Energie/* Ministry of Public Works and Energy
NRR	Net Reproduction Rate
NGO	Non-Governmental Organization
OCIR-The	*Office des Cultures Industrielles du Rwanda-The/* Rwanda Industrial Crops Authority-Tea
ONAPO	*Office National de la Population /* National Population Office
PNAS	Programme National des Actions Sociales National Social Action Program
TFR	Total Fertility Rate

This report is based on the findings of a main mission to Rwanda in September, 1993. Mission members were: Qaiser Khan, Mission Leader, Amolo Ngweno, Economist; Girindre Beeharry, Macroeconomist, and Colette Craven (Operations Officer). Separate missions by Thierry Brun , Agriculture/ Food Security Specialist; and Claudine Voyadzis, Social Anthropologist; also contributed to the report. The report was prepared by Qaiser Khan and with inputs from Amolo Ngweno and Girindre Beeharry. Separate annexes were prepared by Marco Ferroni (Poverty Profile), Colette Craven (Environment), Claudine Voyadzis (Social and Anthropological Issues Affecting Women) and Thierry Brun (Agriculture). A participative poverty survey financed by the Netherlands Poverty Trust Fund is being carried out by the *Reseau des Femmes Rwandaises Oeuvrant pour le Developpement* and the results will be integrated into the report as an annex. The peer reviewers are Messrs. Martin Ravallion and Jeffrey Hammer. The report was processed by Ms. Hilda Emeruwa. Messrs. Francisco Aguirre-Sacasa and Mr. David Berk are the Department Director and managing Division Chief respectively while Mr. Ulrich Thumm is the Departmental Lead Economist.

This report was prepared but could not be reviewed by the Government before the tragic events unfolding in Rwanda since the beginning of April, 1994. It is widely believed that hundreds of thousands of people have been killed and over two million people (a quarter of the population) have been displaced. This has no doubt greatly worsened the poverty situation. It is, however, far too early to assess the full impact of these events.

The report shows the difficult conditions that Rwanda faced even before the recent events. The poverty reduction strategy proposed is based on accelerated economic growth, particularly agricultural growth, and all facets of human resource development. It is likely to be the only viable one after peace is restored and after a first phase of reconstruction/rehabilitation and restoration of basic economic and social services.

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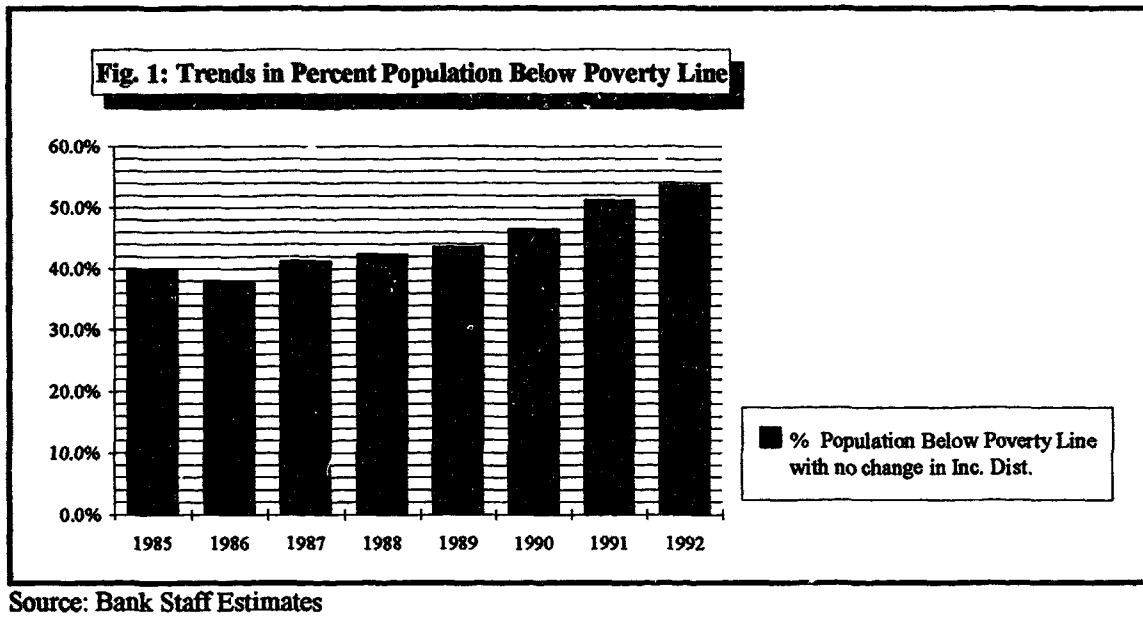
EXECUTIVE SUMMARY

OVERVIEW

i. With a population of 7.2 million growing at just under 3% a year, Rwanda has a population density of 280 per km^2. Over 90% live in rural areas on subsistence agriculture. Through bringing marginal lands under cultivation and expanding productivity by increasingly labor intensive practices on small holdings, Rwanda was able to increase per capita food production in the past. This is no longer continuing and frequent localized famines have started since the late 1980s. When its per capita income is adjusted for purchasing power differentials, Rwanda falls among the ten poorest countries in the world. Due to poor economic conditions which have been exacerbated by an armed conflict since 1990, the percentage of the population living below the poverty line ($170 at 1985 prices and exchange rates) is estimated to have risen sharply from 40% in 1985 to over 53% in 1992. This chronic poverty problem has been worsened by the civil-war related displacement of people.



Source: Bank Staff Estimates

ii. The extent of Rwanda's poverty problem means that the country cannot address it by targeted programs[1] alone. It needs to attain sustained labor intensive growth while assuring that the strategy chosen provides the poor with equitable access to the benefits. A system of targeted transfers to bring all those below the poverty line up to the that line would have cost 4.5% of GDP in 1985 and almost 10% of GDP in 1992 which is not feasible. Rwanda needs to: (a) create an environment to encourage development of

[1] Nevertheless, targeted programs such as labor intensive works to help the poorest survive till sustained growth reduces poverty will be necessary and are being executed with World Bank support.

export-oriented labor-intensive industries (a long term growth strategy moving towards an open economy has been developed in ***Rwanda: Note de Stratégie Economique: Vers une Croissance Durable,*** World Bank, 1993);[2] (b) remove restrictions to population movements to allow non-agricultural development and the growth of larger market centers; (c) promote food security and environmentally sustainable agriculture by encouraging a mix of food crops, animal husbandry and cash crops; (d) reduce fertility by improving the outreach and effectiveness of family planning programs; (e) augment the human capital of the poor through investments in education; (f) improve health conditions; and (g) address malnutrition through nutritional surveillance, nutritional education and supplemental feeding. All of these should increase growth and reduce poverty. Human resource development and removal of restrictions on labor mobility should allow the poor to benefit from growth. Increased agricultural productivity and growth of the urban informal sector would directly help to reduce poverty and provide the basis for sustained growth.

POVERTY PROFILE

iii. A poverty profile based on the household surveys from 1983-85 (the most recent available surveys) shows that the mean value of expenditure per capita for the Rwandese population was 18,760 FRW per year in 1985 (US$235 using rates of exchange prevalent at the time of survey). The average consumption of the bottom 40% was under 11,000 FRW per year and that of the bottom 20% was under 9,500 FRW per year. The share of the population living below the poverty line (set at 13,810 FRW/capita[3]) was 11% in urban areas and 41% in rural areas. The average consumption of those above the poverty line was about 22,000 FR. per year. There was a gender bias in urban areas where female headed households had an average consumption level 35% below that of male-headed households. Poverty was worst in the south central region while the northwest region was the most well-off. Income sources varied significantly between poor and non-poor households with agriculture production and wages accounting for over 70% of the income of the poor households but only 52% for the non-poor. Expenditure patterns varied between the poor and the non-poor with the poor spending 88% on food and the non-poor 74%.

iv. The chronic poverty problem has been worsened by the 1990-93 armed conflict and associated events which displaced 900,000 persons at one stage (more than 12% of Rwanda's population). The displaced persons abandoned some of Rwanda's most productive farm-land, affecting output and food supply. These flows were accompanied by a dramatic rise in mortality among the displaced.

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2 The macroeconomic framework in this report has been based on the ESN and underlies the projections given in this report.

3 This is defined as the consumption of the 40% percentile and in 1985 was equivalent to about $170 at the exchange rate prevailing at the time of the survey. The level is held constant in real terms as a benchmark for making calculations for other years.

MACROECONOMIC AND REGULATORY POLICIES

v. Rwanda's macroeconomic and regulatory policies have historically worked against the onset of private sector led growth and sustained poverty reduction (though during the 1970s and early 1980s the country made considerable progress). The adjustment program carried out from 1990 put in place reforms which should have reduced poverty and increased growth had it not been for the effect of the armed conflict and some regulatory practices which worked against the goals of the program.

Trends before the 1990 Structural Adjustment Program

vi. Supported by generous donors and good coffee prices, the government was able to maintain over-valued exchange rates, low inflation and fiscal balance through the 1970s and 1980s. Export taxes on coffee were a good source of revenue, but, following the drop in coffee prices during the 1980's, these had to be replaced by price supports causing fiscal imbalance. These imbalances became unsustainable by 1990 and the government requested support of the Bretton Woods institutions for a structural adjustment program.

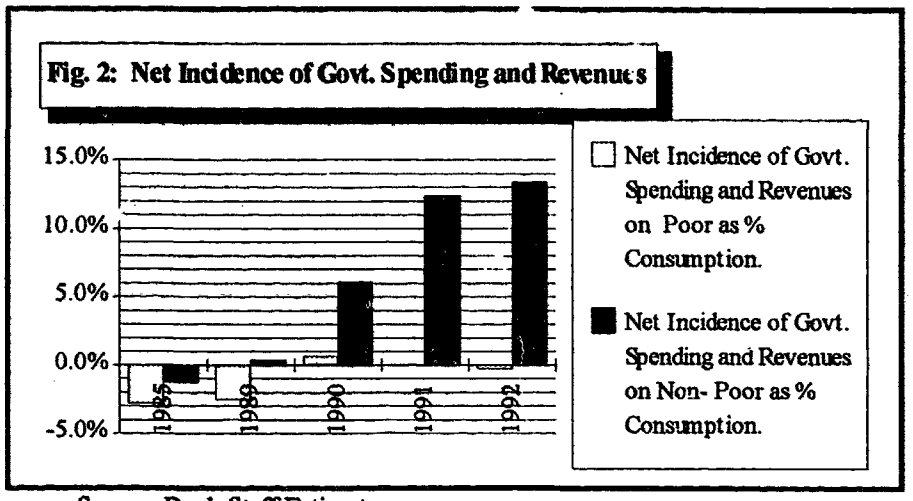
Impact of the Structural Adjustment Program

vii. The core of the 1990 adjustment was a 40% devaluation (in foreign currency terms) designed to stimulate production of tradable goods and to create employment. Rwanda's adjustment program benefited the poor on balance though this positive effect was dampened considerably by regulatory restrictions on the mobility of labor, the impact of state marketing boards and a downward trend in international prices for tea and coffee. Most of the poor produce and sell cash crops in Rwanda and should have benefited from an increase in the price of tradables. While there seems to have been some increase in the production of tradable goods due to higher prices, the poor were generally unable to benefit from any increased employment opportunities in production of tradables due to restricted labor mobility. Significantly, the poor were hardly affected by increased prices of consumption goods because (a) they are less exposed to the cash economy than the non-poor and (b) the price of food, which is the major consumption item among the poor, did not rise significantly.

Incidence of Public Expenditures and Revenues by Poverty Group

viii. Unlike that of many other countries, Rwanda's fiscal system was historically fair to the poor, with the incidence of public expenditures and revenues having little net effect on income distribution. The situation changed with the down-turn in coffee prices, which led the government to support the domestic producer price turning the coffee sector from a source of revenues to a drain on the treasury. Another negative factor was the armed conflict. The share of social sectors declined from 35% of current expenditures in 1985 to 20% in 1992 while the share of defense and administration rose from 45% to 64%. The Government ran a surplus equivalent to 1.4% of GDP in 1985 which had changed by 1992 to a deficit of about 7.4% of GDP. These changes in the expenditure pattern made the net

effect of the tax and expenditure system less equitable as illustrated by Figure 2 (this shows the net effect of government revenues and expenditures on consumption).



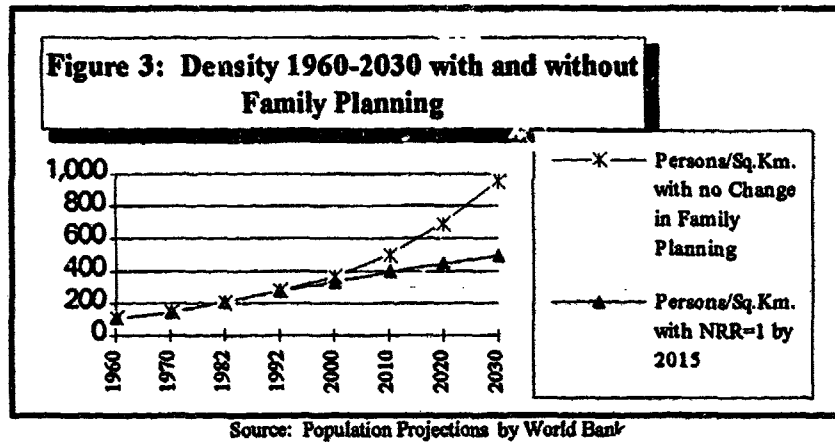
Source: Bank Staff Estimates

SECTORAL ISSUES AFFECTING POVERTY REDUCING GROWTH

ix. Apart from macroeconomic problems, several sectoral issues affect the onset of sustained poverty reducing growth in Rwanda. These include: (a) rapid population growth and the relative ineffectiveness of family planning services; (b) environmental degradation; (c) constraints to developing larger market centers for domestic agricultural and other production; (d) agriculture policies focused on specific crops rather than broad sectoral issues; and (e) ineffective human resource development.

Population

x. Rwanda's rapid increase in population is a major constraint to achieving sustainable growth because it leads to: (a) increased investments in basic services such as health and education just to keep up with the population, consuming scarce resources which could otherwise be used to improve access to and the quality of these services; (b) increased pressure on marginal lands increasing erosion and deforestation problems; (c) pauperization of families as land is divided among heirs in each generation; and (d) reduced household per capita resource availability to invest in improving the quality of human capital of their members. Despite the decline in the total fertility rate from 8.5 in 1982 to 6.2 in 1992, population growth is just under 3% per year and much more needs to be done. Only 12% of women use modern contraceptives even though over 95% are aware of their availability. Figure 3 illustrates what could happen if Rwanda does not implement an effective family planning program immediately aimed at reducing the underlying rate of population growth to zero (i.e. Net Reproduction Rate=1) by 2015.



Source: Population Projections by World Bank

Environment

xi. Poverty and environmental degradation go hand in hand - the poor are both the victims and the cause of many forms of environmental degradation. It is difficult to envisage environmental protection without reducing poverty and providing the poor a stake in protecting the environment.

Agriculture

xii. Rwanda's farmers have historically defied predictions of disaster by keeping food production growing ahead of population through a variety of measures. This success has faltered recently because of: (a) increasing scarcity of additional land to bring under cultivation; (b) very low use of inputs to restore and/or increase soil fertility due to high cost and high risk; (c) high risk environment because (i) markets are thin, (ii) agriculture is mostly rain-fed and (iii) farms are small making inter-cropping to reduce risk more difficult; and (d) excessive intervention by the state particularly in favor of coffee. Most studies show that small farmers lead the way in increasing productivity and are adopting practices which provide valuable clues about how to increase agricultural productivity per hectare in Rwanda, which remains low despite the high population density. Farmers in the poorer regions of Rwanda are moving to farming systems similar to those in other densely populated parts of the world. They are: (a) diversifying by combining food crops, cash crops and animal husbandry; (b) using animal husbandry (particularly pigs) to convert household residues and waste from beer production into organic fertilizers; (c) switching to sweet potatoes as a bulk food crop; and (d) applying soil conservation techniques such as tree planting. These practices which are getting more and more widespread are not only good for reducing risk and food insecurity but also environmentally sustainable.

Development of Non-Agriculture Economy and Markets

xiii. Restrictions on population movements and on urbanization have impeded the development of market centers essential for developing a cash economy where resources move to their most efficient use. This has increased poverty by limiting options for the poor and has reduced the potential for economic growth. Freeing population movements

would improve resource allocation and lead to increased development of market centers. This would induce growth by: (a) reducing the pressure on marginal lands; (b) building a critical mass for the development of export industries and the informal sector; (c) providing markets for food crops encouraging farmers to move to a more productive input intensive agriculture; (d) providing a place for the refugees to settle and find work; and (e) reducing the costs of providing basic services to the population. Restrictions on population movements and growth of market centers are directly harmful to the poorest members of society and the economy. Yet, there is very strong resistance to free circulation and obstacles take many forms including: (1) requiring residence permits; (2) requiring trading licenses even for those wishing to sell a basket of vegetables; and (3) lack of investment in urban services for the poor. On the part of government officials there is strong resistance to the idea that many of the returning refugees will want to settle in the cities: no plans are being made for their urban settlement whereas plans are under way to invest in rural infrastructure to settle them on the already scarce rural land.

Human Resources Development

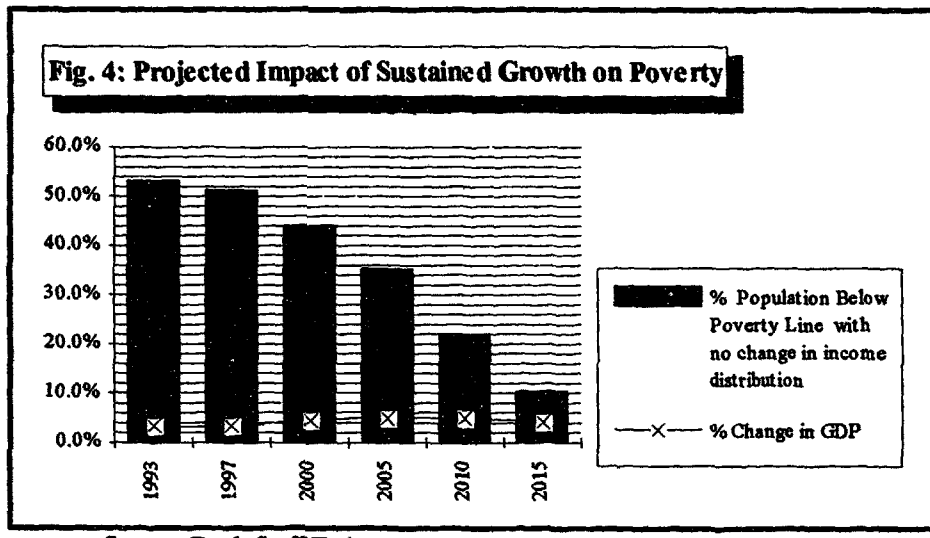
xiv. Human resource development is at the root of the success of all countries which have achieved sustained growth with reductions in poverty. Education increases the ability of the poor to contribute to and benefit from economic growth. Educated people are better able to improve their health status and use family planning. A healthy trained labor force is essential for achieving sustained economic growth and may indeed help to drive economic growth. However, despite a strong commitment to education, Rwanda has failed to produce the quality human resources necessary for sustained development. The primary school enrollment rate is 65% and the transition rate from primary to secondary is about 8%. Health conditions are below average for sub-Saharan Africa and deteriorating with a growing AIDS epidemic which in turn increases the frequency of other diseases such as TB. Life expectancy is 49 years and the infant mortality rate is 120 per thousand. AIDS reduces productivity due to frequent absences for treatment and workers tend to die in their most productive years. Malnutrition has a debilitating effect on worker effort and tends to reduce earning capacity perpetuating poverty. Nutrition conditions are poor with about 20% of the new-born babies being born under-weight and over 40% of children are chronically malnourished.

RECOMMENDATIONS FOR A POVERTY REDUCING GROWTH STRATEGY

Overview

xv. Poverty is widespread and cannot be eliminated without sustained economic growth. Rwanda needs to choose a growth strategy that assures that the poor benefit. A poverty reducing growth strategy for Rwanda will need to start with removing restrictions to labor mobility and moving agriculture policy and practices away from a bias towards specific crops to encouraging an environment where producers will shift towards the most profitable crops.

xvi. A long term vision for growth based on labor intensive export production to provide the cash stimulus to get the economy moving has been developed[4]. Under such a strategy, the Government would promote exports by creating appropriate conditions by removing those fiscal, regulatory and monetary restrictions which tend to hamper export development. Labor-intensive exports would create employment and incomes which would increase the demand for upstream activities and for domestically produced food. The increase in exports of labor-intensive manufactures would be accompanied by growth in exports of high value agriculture products. The role of the state would be reduced to: (a) providing a stable macroeconomic environment; (b) enforcing a coherent legal and regulatory system enabling private entrepreneurs to operate in a business-friendly environment; (c) maintaining quality infrastructure; (d) promoting human resource development; and (e) protecting the environment.



Source: Bank Staff Estimates

xvii. The strategy above has modest growth targets averaging under 4% during the 1990s and 5% during the next decade. Yet even these modest growth rates can significantly reduce poverty if accompanied by decelerated population growth. The impact of growth on poverty is shown in Figure 4. The combination of economic growth and decelerating population growth would reduce the percentage of the population below the poverty line from 53% in 1993 to 44% in the year 2000 and to only 10% in the year 2015. By 2015, the remaining poor could be brought up to the poverty line through targeted transfers which would cost an easily manageable 0.1% of GDP.

Macroeconomic Environment, Regulations, and Sector Policies

xviii. The overall objective would be to achieve average growth of 4% per annum in this decade and 5% in the next. Accelerated growth would be the result of coherent macroeconomic and sector policies. ***Macroeconomic policies*** would have to aim at lower

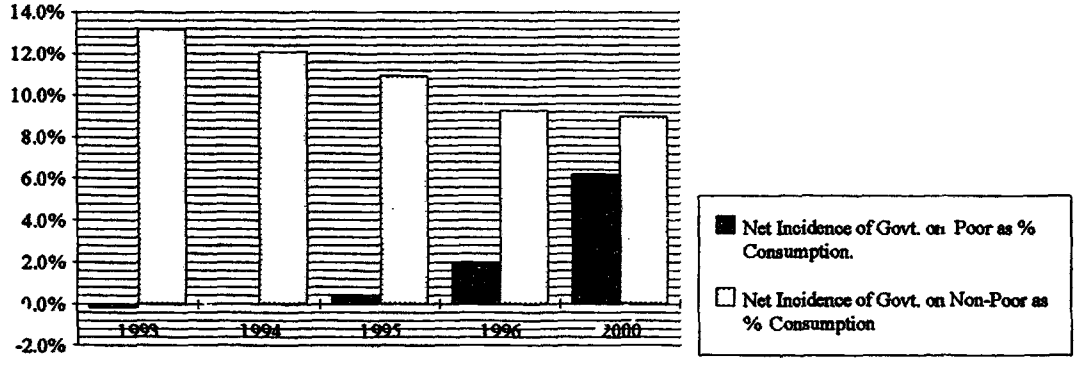
[4] See Footnote 2.

government budget deficits which would be financed in a non-inflationary and sustainable way, mainly from external sources. The exchange rate would need to be competitive so as to make existing export crops profitable without government subsidies and to stimulate the development of new export activities. With declining government deficits and low inflation, monetary policy would be freed to provide credit at reasonably low real interest rates for accelerated private-sector growth.

xix. ***Regulatory Policy:*** To stimulate growth, the Government needs to: (a) remove restrictions on spatial and sectoral labor mobility; (b) remove price fixing arrangements and regulations in transport which keep costs high and discourage the development of an open economy; (c) revise expropriation law so that expropriated land is compensated at full economic costs; and (d) improve land tenure to clearly define property rights and reduce transactions cost. Such deregulation would support non-agricultural development and growth of market centers which, in turn, would require adequate investment in infrastructure. The growth of these market centers would facilitate marketing (and thus intensification) of agriculture production and non-agriculture development.

xx. ***Public Expenditure and Taxes:*** The public expenditure program is an essential tool in orienting a country's growth strategy and in reducing poverty. This report makes proposals for a public expenditure program to sustain growth and reduce poverty through a combination of (i) withdrawal of the state from productive sectors, (ii) reducing general administration and defense budgets to the minimum necessary, (iii) increased financing for human capital formation to provide the quality work-force necessary for a modern economy, (iv) increased support for family planning, and (v) expanding infrastructure to facilitate overall growth and expansion of market centers. These actions are essential to encourage growth and to provide the poor with the tools necessary to benefit from it. The proposed public expenditure program would also be more equitable as shown in Figure 5.

Fig.5: Projected Impact of Proposed Public Expenditure Program by Poverty Group



Source: Bank Staff Estimates

xxi. ***Agricultural Growth and Diversification:*** A successful strategy to achieve sustained agriculture growth in Rwanda will need to include the following: (a) allow the growth of a market oriented economy by removing restrictions on trade and allowing growth of market centers; (b) reduce risk by promoting proper inter-cropping practices; (c) promote animal husbandry to diversify agriculture and help replenish soil nutrients; and (d) improve food security by providing research and extension in crops such as sweet potatoes. Furthermore, in view of the higher productivity of small farmers, the Government should reconsider recommendations to consolidate farms into larger units.

Population and Human Resource Strategy

xxii. ***Family Planning and Environment:*** Rwanda needs to develop an aggressive family planning program by: (a) launching Information Education and Communication (IEC) campaigns targeting social constraints and mores opposed to family planning; (b) re-dynamizing family planning services through increasing professionalism in its corps of volunteers; (c) improving management and logistics in the public health system as over 95% of contraceptive users get their contraceptives from this source; and (d) improving the quality of care in the public health system. Decelerating population growth and expanding market centers would curb land pressure. At the same time, policies would need to be pursued to protect the environment, particularly to control erosion and preserve soil fertility important factors for sustained income from agriculture, particularly for the poor.

xxiii. ***Education:*** The affordability and attractiveness of education needs to be increased by: (a) improving quality and relevance of education; (b) developing primary schools which tend to generate the highest social benefits; (c) developing general secondary education including support to private secondary schools; (d) improving participation and performance of girls at all levels of education; (e) establishing a program to help poor families finance their education costs and increase equity e.g. free primary education for children, financed in part by cost recovery for higher and technical education; and (f) eliminating controls on labor movement to improve the economic returns to education.

xxiv. ***Health:*** It is recommended that: (a) resources allocated to primary health care and preventive medicine be increased; (b) the drug procurement and distribution system should be reformed; (c) preventive care should have priority in allocation of public sector resources for health care; and (d) an effective AIDS program be developed and executed.

xxv. ***Malnutrition:*** It is recommended that the following steps be taken: (a) monitor nutritional status of children; (b) provide nutrition education; and (c) support supplemental feeding integrated with nutrition education where possible.

xxvi. ***Women in Development Issues:*** Strategies to redress the special problems facing women and to help increase their income include: (a) adopt laws improving women's rights in marriage and land ownership; (b) launch IEC campaigns to raise women's awareness of their rights; (c) expand women's organizations to promote credit programs targeted to poor women such as the Grameen Bank in Bangladesh; and (d) promote female enrollment at all levels of education.

I. COUNTRY BACKGROUND AND OVERVIEW OF REPORT

A. BACKGROUND

1.1 The population of Rwanda is currently 7.2 million, growing at 3 percent with a population density already at a high 280 per sq. kilometer. GDP per capita was estimated at $230 in 1992 - meaning that Rwanda is among the twenty poorest countries in the world. Rwanda falls among the ten poorest countries in the world when the per capita income is adjusted to reflect purchasing power differentials.

1.2 The population includes two main ethnic groups: the Hutus (85% of the population) and the Tutsis, who were politically dominant before independence. Ethnic conflict led to a major exile of Tutsis in 1959, before independence in 1962. After 1959, only minor incidents of ethnic violence occurred until exiled Tutsis invaded Rwanda in October 1990. Following the start of the civil war, political reform has begun to complement the economic reform process with the establishment of a multi-party system. After protracted negotiations, a peace treaty with the rebels was signed and the rebels formed a political party. They were expected to join an interim government to organize a series of elections for local administrators, for parliament and finally for President. The tragic events that have engulfed the country since the death of President Habyarimana at the beginning of April have destroyed that process.

1.3 Rwanda is a predominantly rural society - about 95% of the population live in rural areas and derive their livelihood from subsistence agriculture and the cultivation of coffee and tea. Agriculture produces about 40% of GDP and employs some 90% of the active labor force. The most important crops are bananas, sweet potatoes, cassava, beans, sorghum, and white potatoes. Forty percent of small holders grow Arabica coffee which is Rwanda's principal export commodity accounting for 75-85% of foreign exchange earnings.

1.4 The industrial sector represents about 23% of GDP. This category includes manufacturing (mostly agro-processing and beverages accounting for 15% of GDP), construction, a small mining sector, electric power and water. Local entrepreneurship is not well developed, except for a small informal sector. In addition to the physical constraints - Rwanda is land-locked and hilly - the major obstacles to private sector development are the presence of the state as a privileged competitor and a disabling environment characterized by an inadequate incentive system and pervasive government interference in virtually all aspects of economic life. Furthermore, labor and other factors of production are relatively expensive when compared to neighboring countries.

1.5 Services provide 40% of GDP and includes commerce, tourism, banking, insurance, and public administration. Tourism is a small source of foreign exchange, particularly since the initiation of "mountain gorillas tourism" in the National Park in

Northwest Rwanda in 1985. The strife in Rwanda has put a temporary halt to the expansion of tourism, particularly in the northern prefectures.

1.6 Official Rwandan imports include consumer goods (44% of the value), fuel and lubricants (17%), equipment (23%), and raw materials (16%). Officially imported food products include rice, sugar, powdered milk, vegetable oil, and processed foods. There is also evidence of informal trade with neighboring countries, notably imports of palm oil, beans, and coffee, and export of consumer goods and white potatoes.

1.7 During the 1960s and 1970s, the country experienced high rates of economic growth (5% per annum on average) due to political stability, prudent economic and fiscal management, high coffee prices and high levels of external assistance. This generated budget surpluses and large external reserve. Rwanda then invested heavily in infrastructure - improvement of the road network, telecommunications, air transport facilities - and in the social sectors. In addition, until the mid-1980s, Rwanda was able to increase food production to meet the needs of the growing population. This was accomplished by expanding production in swampy valley bottoms, on steep hillsides, and in the less populated Eastern region of the country. Some intensification has occurred, primarily by changing the production mix toward crops with high caloric output per hectare.

1.8 The economic situation deteriorated in the 1980s as coffee prices fell, arable land continued to become more and more scarce, and public spending grew less efficient; the authorities responded to the fall of world coffee prices by increasing controls over the economy instead of adjusting to the external environment and maintaining the competitiveness of the economy. During the period from 1979 to 1990, the Rwandese franc was allowed to appreciate in real terms even though the country's terms of trade were deteriorating. (These were adjusted after 1990 and by 1993 the Rwandese Franc had been devalued almost 80%). The sharp fall in coffee prices in 1987 accelerated the decline and early in 1990 the government requested the Bretton Woods institutions for support in developing a structural adjustment program.

B. Overview of this Report

1.9 This report is organized into five chapters. Following this introductory chapter, Chapter II examines the level and depth of poverty, poverty trends since the last household survey, the country's institutional capacity to monitor poverty trends, special problems worsening poverty for women and the transitional poverty issues caused by refugees and persons displaced by the civil war. Chapter III looks at macroeconomic issues including an assessment of the effect of the structural adjustment program on poverty followed by an examination of regulatory issues and public expenditure trends. Chapter IV examines the key sectoral issues relevant to poverty reduction and sustained growth including population, environment, urban development, agriculture and human resource development.

10 Chapter V proposes a strategy for the future starting from an overall growth perspective and examining what effect sustained growth can have on poverty. The chapter goes on to recommend a series of actions that can help sustain poverty reducing growth. These include macroeconomic policies, a public expenditure program, population policies, environmental policies, urbanization policies, agriculture policies, human resources development policies and policies targeted to women.

II. SUMMARY POVERTY PROFILE AND TRENDS

A. Overview of Findings

2.1 Poverty in Rwanda is widespread and the proportion of the population below the poverty line is estimated to have risen from 40% in 1985 to over 50% in 1992. This level of poverty means that it is difficult to address Rwanda's poverty problems through targeted programs alone. Growth accompanied by human capital development will have to be the main vehicle to help reduce poverty. The rise in overall poverty has been accompanied by falling health and education indicators while AIDS infection rates are high and spreading into rural areas. Women face some special problems as growing land pressures are circumscribing their role as food producers and traditional customs and behavior patterns make it difficult for them to take on new roles. The war and accompanying events have contributed to worsen an already critical poverty problem.

B. Poverty Profile

2.2 The last national household budget and consumption survey was conducted during 1983-85 (Enquête Nationale sur le Budget et la Consommation or ENBC) by the Ministry of Planning[1]. It provides the data necessary to analyze the extent and depth of poverty in Rwanda. A Poverty Profile has been developed based on this survey. Poverty was measured using expenditure per capita as a proxy variable for the standard of living. The family of poverty indices developed by Foster, Greer and Thorbecke[2] was used because it can be: (a) decomposed by region or socioeconomic group; (b) adjusted to reflect the weight given to the depth of poverty; and (c) used to approximately estimate the amount of transfer payments necessary to bring the consumption of the poor to the poverty line.

2.3 The following definitions of poverty are used in this report:

- *Poverty Head Count:* This is the proportion of the population below the poverty line.

- *Poverty Gap:* This is the gap between the average expenditures of the population below the poverty line and the poverty line expressed as a percentage of the poverty line.

- *Poverty Severity:* This measure takes account of distribution among those below the poverty line and can therefore be used to calculate the level of transfers necessary to bring the poor up to the poverty line assuming that a perfectly targeted transfer were

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1 A new survey is in the field and the results from this should be available in a year or so and permit updating the profile.

2 Foster,J., J. Greer and E. Thorbecke. "A Class of Decomposable Poverty Measures." *Econometrica* 52: 721-766. 1984. For a technical description of the Index see Annex B. This measure is used commonly in the World Bank.

possible without leakage. This measure is not used to measure the amount of transfers necessary. Its usefulness lies in the fact that of the three poverty measures used here, this is the only one sensitive to income distribution among the poor.

2.4 The poverty profile uses total real expenditure per capita (adjusted for the level of prices in each region and expressed in per capita terms to adjust for household composition) as a proxy for the standard of living. The poor were defined as the bottom 40% of the sample in terms of expenditure per capita. The approach of using a percentile in the income or expenditure distribution to fix the poverty line has been used often in countries where there is no officially set poverty line in order to avoid value judgments about tastes, preferences and needs. Once such a level is fixed, it is held constant in real terms and used to monitor poverty trends over time.[3]

2.5 Total expenditure is the sum of cash expenditure on consumption goods and services, the value of own-produced food, the value of transfers received in kind, and the value of goods received in barter transactions. It includes some durable expenditures but excludes the purchase of buildings, land, and vehicles. Because the imputed rental value of houses could not be calculated, rent payments were also excluded.

Table 2-1: Poverty Indices Showing Regional and Urban/Rural Variation- 1983-85

	Population Share	Mean Expend.	Poverty Indices Head Count	Gap	Severity
		Rural			
Northwest	14%	19,801	34%	7%	2%
Southwest	15%	15,956	38%	8%	2%
North Central	22%	17,380	45%	8%	3%
South Central	20%	14,622	58%	15%	5%
East	24%	19,292	30%	6%	2%
		Urban			
Kigali	4%	46,901	6%	2%	1%
Other urban	2%	30,624	23%	6%	2%
RWANDA	100%	18,670	40%	8%	3%

Source: Calculated from the Enquête Nationale sur le Budget et la Consommation

2.6 The results show that while the mean value of expenditure per capita for the Rwandese population was 18,670 FRW per year (US$235 using rates of exchange prevalent at the time of the survey), the average consumption of the bottom 40% was under 11,000 FRW per year and of the bottom 20% was under 9,500 FRW per year. The average income of those above the poverty line was 23,780 FRW. The chosen poverty line in the survey was 13,810 FRW per person per year (the consumption level of the 40th percentile). The urban areas enjoy a mean expenditure level of 42,285 FRW per year which was almost 2.4 times the rural mean of 17,396 FRW (these figures were already

[3] The poverty threshold used in Mauritania was the 40th percentile of the income distribution and in Côte d'Ivoire it was 30%. Malawi used 20% for the core poor. Ghana used 2/3 of mean expenditures and Mozambique used 50% of mean expenditures. At the latest count 7 out of 9 poverty assessments done by the World Bank in the Africa region were using relative thresholds.

adjusted for the cost of living differentials between urban and rural areas). On a head count basis the incidence of poverty was 11% in urban areas and 41% in rural areas. Geographically, poverty was highest in the south-central region. Nationally, the incidence of poverty was greater among female headed households though the difference is rather small (41% to 39% using the head-count index). The gender bias was more pronounced in urban areas where female headed households have an average consumption level of 35% below that of male-headed households.

2.7 Income sources varied significantly between poor and non-poor households with agriculture production and wages accounting for over 70% of the income of the poor households but onlv 52% for the non-poor. Poor households accounted for 32% of the value of agriculture production and 47% of the value of agriculture wages earned but only 4% of the income from non-agriculture wages and only 20% of income from trading activities.

Box 2-1: Population Growth and Poverty

Jean-Marie Vianney looks much older than his years as he glances around the small plot of land around his house with a few scrawny coffee bushes. His wife, mother and four of five children live in the house and the total output of their land is less than two months' survival. Sometimes he finds work on other people's fields and a day of work between him and his wife earns them 70 FRW and a bottle of banana beer. Their oldest son who is eleven has gone off to be a servant to the child of a better off neighbor who is in secondary school in Kibuye. One less mouth to feed but the child misses his family. He has no money to pay the school costs for his other children. Sometimes the church helps and they go to school. It does not matter. He sees no future for them with or without education as they all have to come back and live off their microscopic land holdings. Sometimes, he remembers the stories his father told him of the time three generations ago when the whole hill-side nurtured one family. He wonders sometimes why the church which is so kind to the poor is against family planning which could keep the poor from getting poorer.

Source: Prepared by Bank Staff based on interviews with households.

2.8 Expenditures on food were 88% of total for the poor and 74% for the non-poor. Starchy staples were important in the diets of both groups, but the specific starchy staples vary among them. Beer consumption was important for both, but the latter drank factory beer while the former drank home-made banana or sorghum beer.

2.9 Analysis of health and education expenditures show that the poor use a larger proportion of their cash non-food expenditures on these basic services compared to the non-poor; in fact poor households spend as much in absolute terms on health care as non-poor households, making Rwanda unique among African countries where such data is available. (In other countries the poor pay less in absolute terms though usually this amount is a higher percentage of their total expenditures than for the non-poor). All health expenditures together claim 16% of the non-food cash expenditures of the poor as

opposed to 7% for the non-poor. Similarly, education accounts for 3.5% of cash expenditures of the poor as opposed to 2.5% for the non-poor.

2.10 The poverty severity index (3% for Rwanda) when multiplied by the population and the poverty line (i.e.13,810 FRW/year in 1983-85 prices) gives the income gap, which is the amount of resource transfer needed to bring the expenditure of the poor to the poverty threshold, assuming that it would be possible to design a perfectly targeted program with no administrative costs. The income gap for Rwanda is estimated to be US$87 million in 1983-85 prices which is 4.5% of GDP[4]. Once administrative costs and leakages to the non-poor are added the costs would be considerably more. This would be in addition to expenditures on essential social services which also benefit the poor. In view of Rwanda's public finance difficulties and the need to expand spending for basic education and health care, such a targeted transfer program is almost impossible. Thus, poverty in Rwanda cannot be addressed by transfers or targeted programs alone. A poverty reducing long-term growth strategy needs to be combined with basic social service spending and a short-term safety net for the poorest.

C. EDUCATION, HEALTH AND MALNUTRITION

2.11 The primary school enrollment rate in Rwanda is only 65% and could be on a worsening trend. The problem is compounded by the low transition rate from primary to secondary education (8%). Education is almost the only way through which a poor person can acquire the skills necessary to contribute to and benefit from development. Also, primary education has the highest social benefits (externalities[5]) and higher education the lowest with general secondary education somewhere in between. Yet Rwanda's cost recovery policy in education is perverse with the highest cost-recovery rates being applied to primary education and the lowest to higher education and to secondary technical education. Economic logic would suggest the opposite. This perverse cost recovery policy means that a poor family needs to pay over 1,000 FRW per year per child to send him/her to primary school. With the total fertility rate being 6.2, this implies that a poor family needs to spend about 4,000 to 6,000 FRW to send all its children to primary school. The average poor household has less than 10,000 FRW per year to spare after paying for food. This means it is almost impossible for a poor family to send all its children to primary school. With restrictions on labor mobility and the low transition rate to secondary school, parents see little advantage in sending children to primary school.

2.12 Health conditions in Rwanda are below the sub-Saharan Africa average and are deteriorating; life expectancy is estimated at 49 years. Infant mortality and under five

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4 This compares to 4% of GDP in Malawi, 3% in Côte d'Ivoire, 5.6% in Ghana and 14% in Mauritania. Mauritania used the 40% threshold for poverty line while Cote d'Ivoire used 30% and Malawi used 20%.

5 Positive externalities are benefits to society over and above benefits to the individual. For example, someone with primary education may or not may not increase his/her income but additional benefits to society would be greater than any increase in incomes. On the other hand, with higher education, most of the benefits are captured by the individual with increased income, and additional benefits to society are relatively small.

mortality are estimated at 120 and 201 per 1,000 respectively and the rate of reduction in infant mortality is one of the slowest in Africa. Maternal mortality is also high (about 600 per 100,000) because of frequent pregnancies, insufficient maternal care, and malnutrition. More than 20 percent of newborns are underweight.

2.13 The AIDS epidemic is among the worst in the world. A survey in 1986 found HIV infection rates in urban areas estimated at 18 percent for the general population and 30 percent for the adults aged 26 to 40. Today, the epidemic continues to worsen, with a new incidence rate of 3 to 5 percent in urban areas and HIV infection already a major cause of morbidity and mortality in the cities: 30 percent of pregnant women attending pre-natal clinics in Kigali are HIV positive and 90 percent of all deaths among women of childbearing age in urban areas are caused by AIDS. There are over 60,000 AIDS orphans in Rwanda, some whom have become street children. In rural areas, the seroprevalence rate is estimated at 2.5 percent but is expected to rise with the movement of the military forces and displaced people in the northern part of the country. Individuals in refugee camps are at high risk for the spread of sexually transmitted diseases (STDs). Already, adult populations living along the main roads have seroprevalence rates of 10 percent. There is fear among public health professionals that the spread of AIDS will be similar to what happened in Uganda a few years ago during the civil war when the adult populations of entire villages were decimated by AIDS brought in by infected soldiers. The health and economic impact of the epidemic are severe, but the AIDS epidemic is unlikely to have a major effect on population growth. It will probably worsen the country's poverty and economic situation as it tends to strike the most productive parts of the population (see box 2-2).

Box 2-2: Poverty and the Spread of AIDS

Estelle lives with her old mother and four children in a dilapidated shack on a hillside which has lost much of its topsoil. The family has no land or other assets. They survive on gifts from the church and she sells herself in the cabaret to earn money for survival. Of course this has occasionally led to her getting pregnant and having another mouth to feed. Furthermore, her clients do not believe in using condoms and the risk of AIDS is very high. Even here in this remote hill area overlooking Lake Kivu, AIDS is well known and has many victims. She really does not care as her life is such a difficult struggle, but if she goes, what happens to her young ones and her mother? Her oldest son left the family to seek his survival elsewhere and has not been back and she is the only one physically able to do something for the family's survival.

Source: Prepared by Bank Staff based on interviews with households.

2.14 The results of the 1991 Demographic and Health Survey (DHS) show that 45% of children suffer from chronic malnutrition as measured by height for age though acute malnutrition is only 6% as measured by weight for height. The poor nutrition situation has increased the infant mortality rate (IMR). The stunting data (height for age) and other evidence indicates a high prevalence of parasitic infestation and diarrhea. Furthermore, the quality of nutrition has deteriorated over time, as farmers switch from cereals to sweet

potatoes and cassava which produce more calories per hectare but have fewer essential micronutrients and protein.

D. GEOGRAPHIC DISTRIBUTION OF POVERTY

2.15 The 1983-85 survey provides data on the geographic dispersion of poverty in Rwanda after adjusting for cost of living differentials. Poverty was most pronounced in the south-central region as shown by table 2-1. As the sample size from the survey was small, it was not possible to dissaggregate the survey results into smaller geographical units. Data from indirect sources such as the Ministries of Plan, Health and Interior were used to construct poverty indices for all nine prefectures and all 147 communes in Rwanda to select target zones for labor intensive works funded by the *Programme National des Actions Sociales* (PNAS). These indices combined the following: destitute population, level of underemployment, food shortages and level of economic infrastructure. These indices confirm the concentration of poverty in the south-central region as shown in Table 2-2.

Table 2-2: Rwanda - Prefectures Ranked by Index of Poverty

Prefectures	Index of Poverty	Poverty Rank
Kibuye	820	1
Gikongoro	674	2
Butare	392	3
Gitarama	342	4
Cynagugu	291	5
Ruhengeri	221	6
Byumba	168	7
Kigali	67	8
Kibungo	-169	9
National Average	**312**	

Source: UNDP/ILO Rwanda: Programme National des Actions Sociales - Document préparatoire pour la composante HIMO

E. POVERTY TRENDS SINCE 1985

2.16 Estimates of poverty since 1985 are based on the assumptions that income distribution remained constant and average expenditures varied directly with changes in per capita income. The results are given in Table 2-3 and Figure 5-1. Whenever societies have experienced severe economic crises such as famines, there has been an increase in inequality as the poor sell off assets in one period to deal with the immediate crisis and start the next period with less income earning potential. A sensitivity test with worsening income distribution is described in Annex B. However, the trends from both alternatives are similar. Table 2-3 shows the estimated evolution of poverty since 1985.

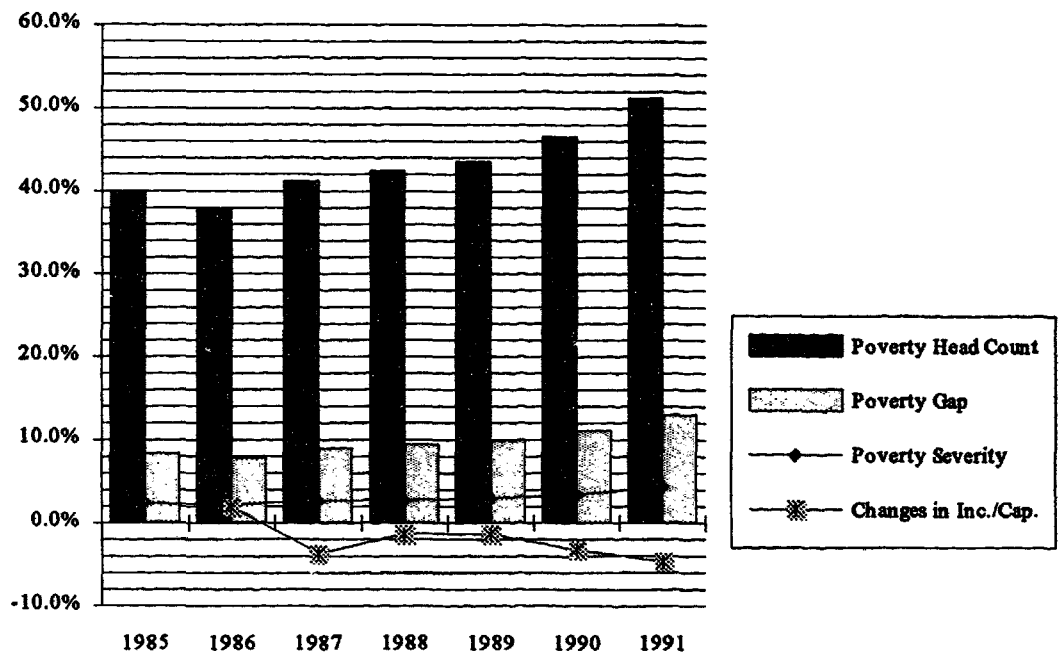
Table 2-3: Rwanda - Poverty Estimates 1985-1992

Item	1985	1986	1987	1988	1989	1990	1991	1992
Poverty Head Count	40.0%	37.9%	41.2%	42.4%	43.6%	46.5%	51.2%	53.7%
Poverty Gap	8.4%	7.8%	9.0%	9.4%	9.9%	11.1%	13.0%	14.2%
Poverty Severity	2.4%	2.2%	2.7%	2.8%	3.0%	3.5%	4.4%	4.9%
Changes in Inc./Cap.		1.9%	-3.7%	-1.3%	-1.4%	-3.3%	-4.7%	-2.4%

Source: Bank Staff Estimates

2.17 Figure 2-1 illustrates the poverty trends between 1985 and 1992 graphically.

Figure 2-1 Rwanda Poverty Trends 1985-92



Source: Bank Staff Estimates.

F. National Capacity for Poverty Monitoring

2.18 Rwanda's capacity to monitor poverty trends is being strengthened under the PNAS program which is financing several rounds of poverty monitoring surveys. Within the next four years three rounds of surveys are planned. PNAS is also providing support to build up government capacity to analyze the survey results and monitor poverty in other ways. Apart from the surveys, secondary data are available from nutrition monitoring, commune reports on population affected by economic crises and the Ministry of Plan's

decentralization unit which monitors trends in different regions. The commune authorities are good at keeping track of the absolute poor in their areas. This is done not only to provide assistance when available but also to determine eligibility for exemption from poll taxes. These data provide a useful source of information to monitor poverty trends.

G. WOMEN AND POVERTY

2.19 The dismal poverty situation in Rwanda is worsened in the case of women by their status in Rwandese society. Traditional women's roles are beginning to disappear with increasing monetization of the economy and declining stocks of household assets such as land, but tradition has generally kept women from adopting new roles suited to a modern economy. Certain legal and institutional measures to improve women's status have been initiated, but tend to be ineffectively implemented. The principle of gender equality, stated in international agreements signed by Rwanda[6] and in the 1978 Constitution, is claimed in official speeches, but not yet enforced. Women have no inheritance rights under traditional law as they are supposed to produce food for their families on land belonging to their fathers or husbands. A new Family Code has been established which still contains several discriminatory provisions. These provisions are related to female land and inheritance rights as well as matrimonial and parental rights. Discriminatory provisions regarding female adultery are also found in the Penal Code. And finally, social and family pressure along with women's unawareness of their rights fosters the large gap existing between the law and its application. On the rare occasion when they do assert their right, frequently rule against women on traditional grounds. This lack of access to land and the increasing number of women in non-formal marriages (and without any traditional rights) has led to an increase in the numbers of female headed households living in poverty.

2.20 Historically, women have been responsible for food production and have been barred from other activities. Growing land pressures and modernization have reduced women's traditional roles of producing food for the household, but traditional practices and values still keep them from taking on new roles more suited for a modern economy. Consequently, few women have opportunities to enter the modern economy and generate cash income.

H. THE PROBLEM OF REFUGEES AND DISPLACED PERSONS

2.21 The acute poverty problem has been complicated by the problem of refugees and displaced persons[7]. The 1990 civil war led to turmoil affecting the prefectures of Byumba and Ruhengeri and to a lesser extent in the prefecture of Kigali (which received refugees

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6 Rwanda signed the "Universal Declaration of Human Rights", the International Pact regarding Civil, Political, Economic, Social and Cultural rights, the Agreement on the Abolition of all forms of Discrimination towards Women.

7 Displaced persons are those who are still displaced within national borders while refugees have crossed international frontiers.

and displaced persons from elsewhere). In early 1993, the total number of refugees and displaced persons amounted to 900,000 i.e. over 12% of Rwanda's population.

2. ***Ruhengeri Prefecture:*** By February 1993, one assessment mission found five of the sixteen communes almost uninhabited, while the population had more than doubled in six communes which accommodated the outflow. Two more communes were invaded by refugees who subsequently left for other destinations. Refugee camps have been set up in six communes while in the others parishes provide food and shelter.

2.23 ***Byumba Prefecture:*** Most of the population from five of the seventeen communes had moved out while five others had doubled their populations. The remaining seven communes saw continued in and out flows of population during the war.

2.24 ***Kigali Prefecture and the Urban Prefecture of Kigali City:*** Centers to deal with refugees and displaced persons were set-up in several parishes in addition to refugee camps. The total number of displaced persons in this area was estimated to be 450,000 in early 1993. For example, Rutongo commune had 140,000 refugees in March 1993, though recently about half seemed to have returned to their homes in the north.

2.25 These flows were accompanied by a dramatic rise in mortality. While war casualties claimed about 100,000 young people (dead, missing or possibly prisoners), camps for refugees and displaced persons experienced high death rates due to infectious and parasitic diseases as well as malnutrition. The infant mortality rate in the camps was as high as 300 per thousand live births.

2.26 There were numerous socioeconomic effects of these populations flows including:

- The sudden and spontaneous displacements bring about separation and scattering of entire families, and affect greatly birth, mortality, marriage and divorce rates;

- Health and nutrition: because of war and destruction in originating areas, and high demand for health care in host areas, health care centers are disorganized, and health care programs are either nalted or in need of restructuring. Possible consequences include sexually transmitted diseases, malnutrition, and infectious and parasitic diseases severely affecting the health of mothers and children;

- Lack of basic infrastructure such as safe water and latrines, which also has an impact on health and sanitation;

- No schooling during the period of displacement for a considerable proportion of the population;

- Unemployment and under-employment, which leads to an increase in crimes and delinquency; and

- Cessation or paralysis of socioeconomic development programs.

2.27 Displaced persons are supposed to go back to their communes following the peace agreement, but meanwhile, they will have suffered extremely harsh living conditions. Moreover, there is no guarantee that they will find their homes, lands and belongings intact in their origin communes. Many of displaced came from the most productive agriculture regions of Rwanda and agriculture production suffered as little was planted in these normally surplus areas.

2.28 By late 1993, the number of displaced persons had dropped to less than a third of the peak registered at the beginning of 1993. However, the events in Burundi have led to a tidal wave of refugees from Burundi, principally in the southern part of the country where poverty problems are already severe and the situation of the host population already precarious.

III. POVERTY DIMENSIONS OF MACROECONOMICS, REGULATIONS AND PUBLIC FINANCE ISSUES

A. OVERVIEW

3.1 Rwanda's macroeconomic and regulatory framework has not been conducive to the onset of sustainable labor intensive growth (necessary for poverty reduction) in the past because the Government has historically tended to: (a) heavily regulate the economy from artisans to air transport; (b) maintain artificially high exchange rates[8]; (c) restrict free movements of population and labor; (d) control cropping patterns (forbidding cutting down coffee trees); and (e) control social behavior. This restrictive environment has tended to make conditions worse for the poor because it: (a) constrained economic growth; (b) reduced the ability of the poor to better their situation by migrating; (c) slowed the pace of urban market development; (d) made access to basic schooling too expensive for the poor; and (e) made it difficult to set up new businesses.

3.2 This chapter examines the macroeconomic, regulatory and public expenditure issues that have affected poverty and growth in Rwanda in the past. Section B examines the macroeconomic framework including analysis of (a) trends before the adjustment; and (b) the structural adjustment program and its effects on the poor. Section C focuses on the regulatory environment and its effects on growth and poverty while section D focuses on public finance trends and incidence.

B. MACROECONOMIC TRENDS

1. Trends before the Adjustment Program

3.3 Rwanda's macroeconomic framework has been shaped by the following: (a) falling external terms of trade since the early 1980s; (b) an excessive focus on traditional export crops; (c) the civil war and its associated effects; and (d) the structural adjustment program since 1990. Despite poor macroeconomic, fiscal and regulatory policies, with support from generous donor financing and good coffee prices, the government maintained artificially high exchange rates, low inflation and fiscal balance through the 1970s and 1980s. Export taxes on coffee were a good source of revenue, but, following the drop in coffee prices from 1986, these were replaced by price supports. The current budget which had a surplus equivalent to 1.2% of GDP in 1985 changed to a deficit of 3.8% in 1990 (before the effect of the war increased the deficit further). Due to government intervention, the volume of coffee exports did not decline despite the fall in prices. The economy also slowed down as Rwanda's rapid population growth consumed the last remaining land frontiers and it was no longer possible to increase agricultural output by bringing new land into production.

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[8] This was mostly rectified following the adoption of the structural adjustment program, but foreign exchange continues to be rationed and there is a flourishing black-market (driven by uncertainty).

3.4 In the 1980s, the slowing economy reduced non-coffee sources of government revenues while expenditures increased and the government increasingly resorted to domestic bank borrowing crowding out the private sector from investment capital. At the same time, while export revenues were declining, Rwanda allowed its currency to appreciate against those of its competitors and trading partners leading to increased external imbalances. These imbalances became unsustainable by 1990 and the government requested support of the Bretton Woods institutions for a structural adjustment program.

3.5 The distorted economic policies did not help the poor because the poor rely mostly on own production from the land and derive little benefit from imported goods made cheaper by the over-valued exchange rate. Results from farm level surveys[9] indicate that despite the fact that the official price of coffee was set at 120 FRW/kg, farmers received about 80-85 FRW/kg. The overvalued exchange rate also hurt the poor by providing opportunities for the better-off and better-connected to earn "scarcity rents" from them, in addition to providing the wrong market signals and thereby stifling economic growth.[10]

2. Effects of the Structural Adjustment Program

3.6 A structural adjustment may affect the poor in three ways: (a) as producers of tradables; (b) as workers employed in the production of tradables; and (c) as consumers faced with increased prices. The first two combine to form the supply response. The poor benefited as producers of tradables as they account for about 35% of cash crop sales in Rwanda and should have benefited from an increase in the price of tradables. While there seems to have been some increase in the production of tradable goods due to higher prices, the poor were generally unable to benefit from any increased employment opportunities in production of tradables due to restricted labor mobility. The potentially positive effect of Rwanda's adjustment program on poverty was highly subdued because of regulatory restrictions on factor mobility, the effect of state marketing boards, a downward trend in international prices for tea and coffee, and the armed conflict which led to a deterioration of fiscal policy and a negative shift in public expenditures towards defense spending at the expense of social services. However, the poor were hardly affected by increased prices of consumption goods because (a) they are less exposed to the cash economy and (b) the prices of food, which is the major consumption item among the poor, did not rise significantly.

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9 Carried out by Michigan State University and the Ministry of Agriculture with USAID support.

10 Ravallion and Lipton (1992) note that the failure to reform policy and allow the exchange rate to adjust, instead employ rationing and quotas to cope with imbalances in the external accounts, is to the clear detriment of the poor. The beneficiaries of maintaining an overvalued exchange rate and related policy distortions usually are the urban rich. The political economy of distortion favoring the urban elite, the most influential interest group, without doubt explains why such policies prevailed for so long without being challenged, even in the face of obvious economic decline

a. Supply Response from Adjustment

3.7 The price of tradables increased relative to non-tradables but did not lead to as high a supply response as expected because of regulatory restrictions. The poor could not benefit by moving to jobs in tradable sectors but did benefit from increased prices of cash crops even though this increase was not as high as expected because of interference by agriculture parastatals.

Table 3-1 : Classification of goods and services as per tradability

Items	Non-traded	Exported	Imported
Food, Beverages & Tobacco	Sweet Potatoes, White Potatoes, Cassava, Sorghum, Peas, Maize, Fruits, Tobacco, Vegetables, Eggs, Banana Beer, Fresh Milk	Bananas, Coffee, Tea, Vegetables, Pyrethrum, Dracaena	Cereals, Beans, Beverages, Powder Milk, Cooking Oil, Salt, Sugar
Clothing & Hygiene	Used Clothing, School Clothing, Soap, Detergent Insect-Powder	Leather	New Clothing, Shoes & Boots
Water & Energy	Water, Charcoal Electricity,		Petroleum Products
Household Fittings	Bedding, Furniture	Basket-work & other Cottage Industry Products	Crockery
Health & Education	Text-books, Basic Medicines		Paper, Medicines, Hospital Equipment
Transport & Communications	Transport Services		Private & Utility Vehicles, Telecommunication Devices
Leisure	Sports, Games, Newspapers		Radio & TV Sets, Photographic Equipment, Books, Films

Source: Minot (1992)

3.8 Table 3-1[11] classifies various goods in Rwanda according to their tradability. Using this breakdown of tradability, the price indices of tradables and non-tradables were calculated for the period November 1990 to June 1991 following a nominal devaluation of 40% in foreign currency terms. Non-tradable prices fluctuate around the 110 level (1989=100) while tradable prices continue to rise, reaching almost 130 by June 1991. The real exchange rate defined as the ratio of tradable to non-tradable prices, rose 31% from November 1990 to June 1991. This period covered does not include the effect of the 30%-fall in international coffee prices.

[11] The breakdown of tradables/non-tradables and the discussion in this paragraph is drawn from Minot (1992).

3.9 The effectiveness ratio of the devaluation (ratio of increase in relative price of tradables to the size of the devaluation) was 47%. A study[12] on the effectiveness ratio[13] of devaluation for a wide range of countries found an average of 60% for the calendar year following devaluation. While, the effectiveness of the Rwandan devaluation falls short of this average, more recent price data indicate that prices of tradables continue to rise relative to non-tradables.

Box 3-1: The Tea Sector

The production and processing of tea are closely monitored by a state agency, OCIR-Thé, which also has the purchasing monopoly in the country. The producer price is fixed by decree and, at the time of the November 1990 devaluation, was 15 FRW per kg. The devaluation caused the price of tea, in FRW terms, to go up. The rise, if passed on to the farmer, should have stimulated an increase in the volume and an improvement in the quality of tea produced. Instead tea exports decreased by 9.5% in 1990, while world market prices had gone up by 5.6%. Exports picked up significantly though in 1991, both in value and volume.

OCIR-Thé did however not pass the price increases to the producers - arguing that the devaluation had also caused costs of inputs to rise - until February 1993, when a new decree set the producer price at 20 FRW per kg. A slight increase in production has been recorded since then, although it is too early to assess its significance. Production extension is restricted by the availability of land, and production intensification is hampered by a recent two-fold increase in the cost of fertilizers.

OCIR-Thé returns increased from about FRW 250 million in 1990 to FRW 500 million in 1991 and FRW 600 million in 1992.

Source: Prepared by Bank Staff based on interviews with OCIR-Thé.

3.10 The increase in the relative price of tradables should have translated into an increase in output and a consequent increase in income. This income would have then fueled demand for domestic goods generating a further supply response. While the price of tradables relative to non-tradables did increase, this did not result in as large a supply response as expected because of several factors: (a) restrictions on factor mobility particularly labor; (b) sharp falls in international prices of Rwanda's main export commodity; (c) increased transport costs as the direct route through Uganda was cut off by the war; (d) continued interference by government and parastatals in the market; and (e) fall-out from the civil war. Whatever supply response was beginning to happen was hurt by the collapse of international prices of Rwanda's major export, coffee, which fell

12 Edwards (1989)

13 Measured as the ratio of the increase in relative price of tradeables to non-tradeables to the level of devaluation.

almost 30% recovering slightly in 1993 but remaining far below its previous level. Nevertheless, there seems to have been some increase in non-traditional agricultural exports but these were limited by high transport costs, continued government regulations on export business and the lack of an effective Rwandese export network.

3.11 The few sectors which recorded an increase in their exports are: bananas (towards Switzerland), processed and unprocessed leather (towards Belgium), 'Dracaena' plants (towards Germany), and green beans (towards France). These isolated cases cannot compensate for the absence of a general supply response to the change in relative prices. The factors working against expansionary effects of a devaluation included increase in the cost of imported intermediate goods and other inputs. Rising transport costs also offset some of the competitive edge the devaluation might have provided. The box below attempts to explore the reasons for the rise in land transport costs.

Box 3-2: The Road Transport Sector

Rwanda's landlocked position puts it at a disadvantage vis-à-vis its neighbors; road transport becomes a substantial component of cost and therefore a vital element of competitiveness or lack thereof. A number of elements tend to push costs upwards.

(1) For the major export commodity, coffee, the Kigali-Mombasa fare is set by decree at FRW 14,000 per ton (i.e. about US$ 100). This represents 52% of the costs of exportation, and 7% of the price of the coffee in Mombasa before it is shipped. That the transport fare for coffee is decreed shelters exports from rising transport costs, but also incites transport companies to make up for losses by increasing the fares from Mombasa to Kigali (FRW 23-25,000 per ton) for imported goods. This represents a transfer from importers (including importers of intermediate goods) to exporters and is not conducive to economic efficiency.
(2) Insurance premiums are about five times as expensive in Rwanda as in the competing economies of the region and Rwandan transport companies are compelled to take out insurance policies exclusively with local insurance companies. Local transport companies have asked for insurance premiums to be reduced or else for them to be allowed to take out insurance policies with foreign companies.
(3) The price of fuel is about three times higher in Rwanda than elsewhere in the region. Both the devaluation and the tax regime on oil contribute to it. An agreement was reached in September 1993 by which fuel used by international transport companies was considered to be re-exported and could benefit from a less penalizing tax regime. The outcome was a decrease in the price of fuel from FRW 128 to FRW 53 per litter.

Other cost-pushing elements include the buying price of vehicles (three times as expensive in Rwanda as in the neighboring countries) and spare parts, high license fees and 'axle-tax' rates; and higher nominal interest rates (19%) than in the neighboring countries.

Source: Prepared by Bank Staff based on interviews with Transporters

b. Effect of Adjustment on the Incomes of the Poor

3.12 It is difficult to analyze the effect of the adjustment program on the incomes of poor because overall economic conditions worsened and everybody was worse off. The poor may have been affected less than the non-poor because their labor market participation is low. The poor also earn a larger proportion of their cash income from cash crop sales and may have benefited proportionately more from increases in prices of tradables (such as coffee and tea).

3.13 Real wages fell following the devaluation though these decreases in real wages were probably related more to a fall-off in economic activities due to the war than to the adjustment program. The effect on the income of poor households, particularly in the rural areas, would have been marginal simply because participation in the wage labor market is low. The data available points towards a 3.5% decrease in real agricultural wages and an 8.5% decrease in real urban wages during the year following the first devaluation. In the rural areas, where most of the poor dwell, only 4.4% of households have wage employment as their primary occupation; 52.1% of them derive some income from wage employment. The corresponding figures for the urban areas are 35.3% and 67.3% respectively - which is still low.

c. Effect on Consumption

3.14 Due to various shocks including the war, real per capita incomes declined over 7% between 1990 and 1992 and everybody got worse off. Nevertheless, the inflationary effect of devaluation on the poor in Rwanda has been buffered by the fact that "own-consumption" is significant among them. While incomes fell, the inflationary consequences of devaluation did not affect the poor very much as illustrated by Tables 3-2 and 3-3 below which show the evolution of the Consumer Price Index for all commodities taken together and for food (the major consumption item of the poor).

Table 3-2: Consumer Price Index weighted by market participation: All commodities

CPI: All	**1990**	**1991**	**1992**	**1993**
Urban Poor	100	110.33	115.10	125.66
Rural Poor	100	103.80	104.99	106.98
Urban Non-Poor	100	112.71	118.57	131.56
Rural Non-Poor	100	104.26	105.59	107.82

Source: Bank Staff Estimates

Table 3-3: Consumer Price Index weighted by market participation: Food items Only

CPI: Food	**1990**	**1991**	**1992**	**1993**
Urban Poor	100	101.43	102.48	105.67
Rural Poor	100	102.52	102.81	103.43
Urban Non-Poor	100	101.57	102.73	106.23
Rural Non-Poor	100	102.77	103.09	103.78

Source: Bank staff estimates based on Government price series and results of the household income and expenditure survey.

3.15 These price indices which take into account actual market participation indicate that the potentially deleterious consequences of adjustment on consumption have been relatively moderate - especially as far as food items are concerned (for which two effects combine: limited market participation, and the fact that the traded components of food expenditures are significantly less than the non-traded components). Thus, while there is legitimate cause for concern over the adverse impact of retail price increases for the low-income net consumers in resource-poor areas, it needs to be tempered by the recognition of the high share of home production and the realization that price-related adjustment is an important element of any strategy to increase farm-gate prices, raise agricultural productivity, and boost off-farm incomes.

3.16 The poorest segments of the population may still be adversely affected by changes in prices and it may be desirable to develop targeted programs to help them. Also, while the high level of home production protects the rural poor from higher consumer prices, it does not help the urban poor. The latter will pay higher transport costs to get to and from work. This effect can be mitigated by decreasing restrictions on the urban transport sector.

C. INCENTIVE AND REGULATORY FRAMEWORK

1. Incentive Framework

3.17 Rwanda's regulatory and incentive framework have worked to the disadvantage of Rwanda's poor by restricting their opportunities to improve their conc on. They have also allowed the non-poor who are better connected to earn rents. The proposals for regulatory reform in the adjustment program would have tended to work in favor of the poor had they been fully implemented. Implementation was delayed in many areas because of the war.

3.18 A major item of the structural adjustment package was the modification of the incentive structure by (a) eliminating all export taxes and most import prohibitions and quotas; and (b) introducing a new simplified tariff structure. Trade restrictions allow a favored few to enjoy "rents" and these tend to be the better-off. Trade liberalization would therefore tend to increase equity.

3.19 The various changes brought to the tariff/taxation structure were: (a) increase in the specific tax on petroleum products, proportional to the exchange rate adjustment; (b) increase in the sales tax from 6% to 10% for most commodities[14] and changing the tax base from the cost of production to the selling price; (c) reduction in the scope and extent of tax exemptions; (d) merging customs duties and other charges on imports; (e) conversion from specific to *ad valorem* custom duties for all commodities except for oil products, alcoholic beverages and tobacco; (f) removal of export duties on all commodities except coffee; (g) increase in minimum tariff from 5% to 10%; and (h)

[14] 2% to 5% for essential commodities, and of 1% to 5% on services and entertainment

introduction of a temporary 5% service fee on foreign exchange transactions for import purposes.

3.20 Many of these accompanying measures were clearly intended to dampen the immediate effects of devaluation on the balance of trade: exports are rendered still more attractive by the removal of export taxes while imports are discouraged by a series of measures. While these measures are useful in the short-term, they might be harmful in the long run. Anti-trade biases have never really proved successful, except in very specific cases like Taiwan and Korea.

3.21 Relaxing trade and other distortions alone is not sufficient to stimulate poverty-reduction. Lipton and Ravallion (1993) note: "The emerging consensus is that successful adjustment, while it can help reduce poverty, is harder than had once been thought. It requires a large and not too slow aggregate supply response. Markets may achieve this best where states do more - by providing infrastructure, public or merit goods - to enable the poor to be part of that response."

2. Employment and the Labor Market

3.22 The number of new entrants on the labor market is expected to increase from 130,000 per year in 1960 to 360,000 per year in 2015. It will be difficult for the Rwandan economy to absorb this work-force because the agricultural sector is already saturated and the development of off-farm employment will take time. The industrial sector consists mainly of small-scale agro-industries; its expansion will necessitate adjustment measures and while some increase in employment may be possible in the short run, this is unlikely to be enough to absorb the growing labor force.

3.23 Private enterprise development is hampered by (a) excessive government regulation and insufficient promotion; (b) lack of access to credit; and (c) limited domestic markets. Migration from rural areas to cities where migrant workers could find opportunities in the informal sector is made difficult by laws and regulations restricting labor mobility. Migration towards neighboring countries is limited either by political reasons or by the absorptive capacity of the neighboring regions.

3.24 Presently, the law is extremely burdensome on employers. All employment must be registered with the Ministry of Labor in order to avoid ethnic discrimination, although this is planned to be phased out in 1994 following the installation of the new multiethnic government. Minimum wages and benefits packages are legislated by the state. Both hiring and firing are administratively cumbersome, even for small enterprises. The Chamber of Commerce has identified these restrictions as important limitations on the development of the private sector in Rwanda.

3.25 Modifications have been proposed to the labor code which are intended to stimulate employment in the private sector and will be discussed by the new parliament when it meets in early 1994. The main elements of this reform are:

(a) Abolition of the residence permit required for anyone wishing to stay in a town/village other than that of his permanent residence for more than three days. In order to obtain this permit, a work permit must be obtained first. This measure is now in the process of being abolished. The urban private sector, both formal and informal, should benefit from labor mobility.

(b) Burden of proof in case of lay-off is the employer's. The rationale for this measure is to ensure access to courts by people who would otherwise be deprived of it because of the absence of arbitration boards. This system is going to be maintained while the possibility of creating arbitration structures is being studied.

(c) Minimum wage: the basic hiring wage has not been an effective constraint so far. Its effect has been to force the unskilled poor to accept jobs which are not officially recognized increasing the potential for exploitation. What has been constraining is the rigid classification of work categories (the minimum wage is established for each one of five categories). The labor legislation reform proposes to abolish these categories, except for unskilled workers. The statutory wage increase system may be abandoned; wage determination will henceforth depend upon market conditions and upon the state of public finance.

(d) Days off and bonuses: the new labor legislation framework will allow for fewer emergency leaves and days off, and plans to monitor the bonus/allowance system.

(e) Female labor: the previous ban on night-work for women will be lifted. (This is an old law designed to improve morality by attempting to ban prostitution indirectly).

3. Access to Financial Markets by the Poor

3.26 Rural Rwanda is a net generator of savings though studies show that while 75% of deposits come from rural areas, 60% of lending goes to urban areas. Most poor families have little access to financial markets even though the *Banque Populaire* (see Box 3-3), which is considered a commercial bank, has branches everywhere and is quite successful in mobilizing rural savings. Despite this large pool of savings the poor are unable to get credit because they lack formally recognized security (land cannot be used as security). They are thus generally shut out of formal credit and rely on traditional sources.

3.27 Traditional financial arrangements such as "*tontines*" are common. The *tontine* is a financial association between people who are already acquainted with each other; the contributions of the members are pooled and paid to each member in turn. Small-scale *tontines* do not make any use of the official banking system though the larger associations

use banks. Rural households provide labor and other factors of production to each other in the form of credit payable later in kind. Deposits in these banks were of the order of FRW 3.4 billion in 1992 excluding deposits made in small *tontines*. The Banque Populaire has facilities to lend to small businesses at reasonable rates. Most informal cooperatives have bank accounts in their local Banque Populaire. Savings rates are thought to be high, and the Banque Populaire had FRW 4.4 billion (US$32 million) on deposit in 1993.

Box3-3: Banque Populaire credit and savings patterns

Membership: 329,237 at end-1991, 361,291 at end-1992

Deposits: FRW 4.46 billion in 1992 (FRW 3.4 billion rural)

Farmers/stock-breeders: 58.9% of members and 42.7% of deposits

Minimum loan: FRW 5,000

Average loan size: FRW 12,036

Farmers/stock-breeders: 61.7% of clients and 16.4% of loans

Term: minimum 3 years, maximum 10 years, average 5 years

Payment intervals: monthly, quarterly

Collateral: cultivation, but not the land itself

Loans with highest repayment rates: loans to civil servants at 15% interest rate

Loans with lowest repayment rates: "credits soudure": 70% repayment rate: coffee plants that had been accepted as collateral were destroyed in inter-ethnic strife in some areas.

Most popular loans in 1992: construction (35.5% of total amount), trade (19.5%), and advance payments to civil servants (18.0%)

Group lending: on an experimental basis to a group of women

Source: Prepared by Bank staff from reports provided by *Banque Populaire*.

D. Public Expenditure and Revenues

3.28 Rwanda has had a history of conservative fiscal management which was made possible by revenues generated from good coffee prices and generous donor assistance.

D. PUBLIC EXPENDITURE AND REVENUES

3.28 Rwanda has had a history of conservative fiscal management which was made possible by revenues generated from good coffee prices and generous donor assistance. Surplus budgets were common, and the civil service was small but relatively well paid. At the same time the incidence of public expenditures and revenues was more or less distribution neutral. The situation changed with the down-turn in coffee prices and led the government to decide to support the price of coffee and turned the coffee sector from a source of revenues to a drain on the treasury. The government ran a surplus equivalent to 1.4% of GDP in 1985 which had changed by 1992 to a deficit of about 7.4% of GDP.

Table 3-4: Rwanda: Distribution of Public Expenditures and Revenues by Broad Category

Economic Category	1985	1989	1990	1991	1992
	EXPENDITURES				
Social Services	35%	30%	27%	20%	20%
Economic Services	13%	13%	9%	7%	5%
Other Expenditure	45%	49%	57%	61%	64%
Interest on Public Debt	7%	9%	7%	12%	11%
Total Expenditures	18,550	23,850	29,930	39,830	43,200
Public Expenditures as Percent of GDP	9.4%	12.3%	15.7%	21.6%	20.7%
	REVENUES				
Tax on Income and Profit	19%	21%	23%	19%	20%
Taxes on Property	2%	2%	3%	2%	2%
Domestic Taxes on Goods & Services	25%	33%	34%	35%	34%
Export Taxes	15%	7%	8%	6%	5%
Import Duties	27%	21%	19%	25%	26%
Total Tax Revenues	89%	85%	87%	87%	86%
Non-Tax Revenue and Adjustment	11%	15%	13%	13%	14%
Total Revenues (million FRW)	21,183	24,443	21,622	24,994	27,691
Revenues as Percent of GDP	10.8%	12.6%	11.4%	13.5%	13.3%

Source: Prepared by Bank Staff based on Ministry of Plan data. 1992 is based on budget figures. Other years are actuals.

3.29 Another negative factor was the armed conflict. The proportion of expenditures going to social services declined from 35% to 20% while economic services declined from 13% to 5%. Other expenditures which include primarily defense and general administration increased their share from 45% to 64%. The role of income-based taxation remained stagnant in revenues and the primary sources of revenues are taxes on domestic goods and services and on imports. The share of export taxes dropped sharply from 15% of revenues to 5% primarily as a result the coffee tax being transformed into a coffee price support.

3.30 It is very difficult to track execution of public expenditures through the budget accounting systems. Significant changes in public finance management and accounting systems are necessary. The execution of public expenditures continued to be a problem

and the problem is particularly acute in the health sector e.g. drug procurement is usually late.

3.31 The incidence of the tax and expenditure system was analyzed to assess its impact on the poor. This type of analysis provides insights into how government expenditures and taxes impact the poor over time and can be used to recommend more equitable expenditure/tax programs. Data on the income sources and consumption patterns of the poor provides useful insights into the progressiveness of the tax system in economies where income-based taxation is not the major source of revenue. For example, taxes on factory beer are paid mostly by the non-poor as the poor tend to drink mostly home made sorghum and banana beer. Similarly, taxes on motor vehicle fuel would be progressive, but taxes on used clothing would be regressive. If home brewed beer were to be taxed, it would be regressive. The results from the 1985 income and expenditure survey were used to assess which group paid what tax and which group benefited from government expenditures between 1985 and 1992. The methodology is described in Annex B and results are shown in Figures 3-1 to 3-3. These show that Rwanda's tax and expenditure system was distribution neutral in 1985. In 1985, the tax and expenditure system of the government decreased both the incomes of the poor (by 2.8%) and of the non-poor (by 1.3%). By 1992, the situation had become much more regressive primarily due to increased defense expenditures; even though the system has had little net effect on incomes of the poor; it increased the incomes of the non-poor by 13.4%.

3.32 Figures 3-1 to 3-3[15] show that, unlike many countries in Africa, Rwanda had a fairly equitable tax and expenditure system when examined from the perspective of its impact on consumption. It has become less equitable over time even though the equity of the tax system improved as the export tax on coffee dropped in importance. The government needs to develop public expenditure proposals to redress the bias. This will mean increasing resources for health services and education while providing targeted assistance to the poor.

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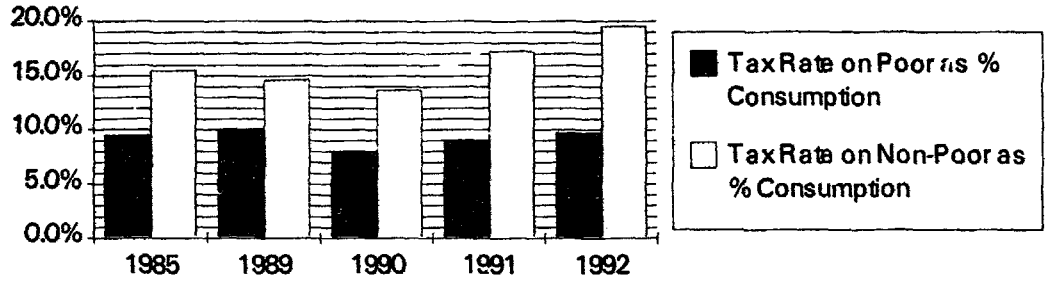
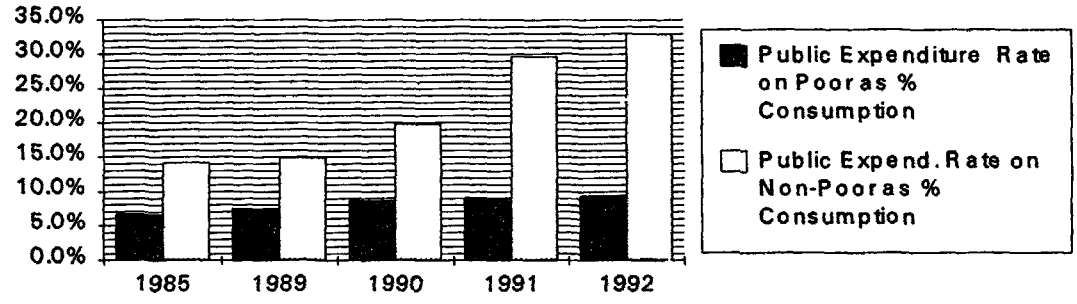
[15] These estimates have been prepared using the expenditure patterns from the expenditure survey of 1985. The low impact on the poor is due to the fact that the proportion of cash purchases is a much smaller part of the consumption basket of the poor than of the non-poor. It is possible that this proportion has increased since 1985. If that is so, the tax and expenditure system would be less equitable than shown in Figure 2.

Figure 3-1: Rwanda - Trends in Tax Incidence by Poverty Level



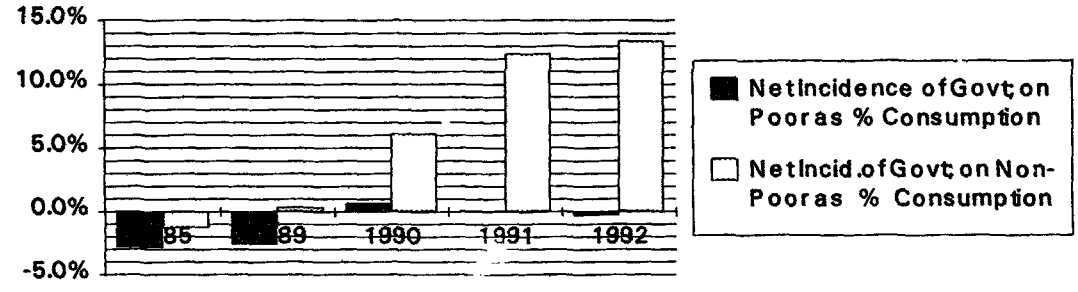
Source: Bank Staff Estimates

Figure 3-2: Rwanda - Trends in Incidence of Public Expenditure by Poverty Level



Source: Bank Staff Estimates

Figure 3-3: Rwanda - Net Incidence of Government Expenditures and Taxes by Poverty Level



Source: Bank Staff Estimates

IV. SECTORAL CONSTRAINTS TO POVERTY REDUCING GROWTH

A. OVERVIEW

4.1 Apart from the macroeconomic problems discussed in the previous chapter, several sectoral issues affect the onset of labor-using growth in Rwanda. These include: (a) rapid population growth and the ineffectiveness of family planning services; (b) environmental degradation; (c) constraints to urbanization impeding the development of markets for domestic agriculture and other production; (d) agriculture policies focused on specific crops rather than broad sectoral constraints; (e) land tenure problems; and (f) ineffective human resource development. This chapter addresses how these issues have impeded development and poverty reduction in the past and continue to do so at present.

B. POPULATION AND FAMILY PLANNING

1. Evolution and Consequences of Rapid Population Growth

4.2 Rwanda's population density is 280 persons per square kilometer and is increasing at 3% (or 8 persons per km2) per year. The results from the Demographic and Health Survey (DHS) of 1992 show the total fertility rate (TFR)[16] falling from 8.4 in 1982 to 6.2 in 1992. The fertility reduction between these two periods has been the most pronounced among younger cohorts implying that future surveys may find even lower TFR. The reduction in fertility seems to have been accomplished by a much sharper than expected increase in contraceptive use.

4.3 Despite this improvement, Rwanda has a long way to go before it has addressed the population problem which is one of the main constraints to its development and is also one of the main forces driving the rapid increase in poverty in Rwanda. The data in Table 4-1 illustrates the potential effect of continued population growth in Rwanda. The population projections in Table 4-1 already build in the impact of the reduction in fertility and assumes enough fertility decline to reduce the Net Reproduction Rate (NRR)[17] to 1 by 2040[18]. NRR to 1 means that the underlying growth rate of the population is zero even though age-structure effects (such as larger than normal proportion of women in child-bearing ages) may persist keeping the growth rat non-zero for a period). Even with some though slow reduction in fertility the population density is expected to increase to over

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16 The total fertility rate is number of children that a women would have if she went through her childbearing years at each age reflecting the average probability of having a child. In effect, the TFR measures the number of children born to an average mother in the country if she survives the whole span of her child-bearing years.

17 NRR = 1 means that the underlying growth rate of the population is zero even though age-structure effects (such as larger than normal proportion of women in childbearing ages) may persist keeping the growth rate non-zero for a period.

18 This is the slow fertility decline alternative prepared by the World Bank staff for comparison.

900 persons per square kilometer[19] before the population becomes stationary at about 25 million in about 2070.

Table 4-1: Rwanda - Historical Evolution and Projections of Population Density NRR=1 by 2040

Year	1960	1970	1982	1992	2000	2010	2020	2030
Density in Persons/Sq.Km.	106	142	210	280	340	453	578	705
Total Fertility Rate (TFR)	7.31	7.80	8.40	6.20	6.20	5.90	4.70	3.44
Rate of Natural Increase	3.3%	3.4%	3.2%	3.0%	2.6%	2.5%	2.3%	2.1%
Population in '000s	2,753	3,695	5,471	7,282	8,840	11,769	15,024	18,325

Source: Bank Staff Estimates using low fertility reduction variant

4.4 This rapid increase in population is a major constraint to achieving sustainable growth because it leads to: (a) increased investments in basic services such as health and education just to keep up with the population consuming scarce resources which could otherwise be used to improve access to and the quality of these services; (b) increased pressure on marginal lands increasing erosion and deforestation problems; (c) pauperization of families as land is divided among heirs in each generation; and (d) reduced household per capita resource availability to invest in improving the quality of their human capital. A more rapid reduction in fertility will be essential.

4.5 To reduce the potential for future catastrophe, Rwanda needs to ensure that family planning services are available to the whole population. It also needs to identify laws and customs that encourage high fertility and take effective measures to modify these. One of the most important determinants of lower fertility is increased mother's education and Rwanda needs to take a more aggressive approach to enrolling and retaining female pupils in primary, secondary and tertiary education.

2. Increasing the Demand for Family Planning Services

4.6 The DHS survey of 1992 showed that almost all Rwandese women were aware of modern contraceptive methods though only 17% had ever used them and only 12% were currently using them. This discrepancy is explained by several factors including: (a) opposition by some church leaders; (b) difficulty of access to contraceptives which are mostly available in public health clinics and usually not in private clinics (mostly church) which service a large part of the population; (c) traditional practices that tend to favor high fertility; and (d) poor understanding of the nature and risks of modern contraception. The contraceptive prevalence rate (CPR) is about 12% when traditional methods are ignored. This needs to rise to about 20% by 2000 if population growth rates are to fall to about 2%.

4.7 The opposition from some church leaders has to be countered by strong leadership by secular leaders. This could involve effective Information, Education and Communication (IEC) presentations showing the negative impact of high fertility and the

[19] The Nile Valley in Egypt, Java and parts of Bangladesh have higher densities but these areas are seeing increases in per capita income because they are better integrated into a market economy.

simplicity and safety of most modern contraceptives. These IEC messages should be developed after carefully examining the factors that drive household fertility decisions through using qualitative studies to complement results from traditional Knowledge, Attitudes and Practice (KAP) surveys.

4.8 Traditional practices such as land inheritance by only male heirs also tend to increase fertility as parents (particularly mothers) try to have as many male heirs as possible to maximize the possibility of at least one supporting them in old age.

3. Improving Supply of Family Planning Services

4.9 The quality and availability of modern family planning services have suffered because of: (a) weak leadership by the national population office (ONAPO); (b) poor management of the public health system which is the source of modern contraceptives for 96% of users; (c) poor coordination among donors; (d) family planning volunteers who are not well motivated or supervised; (e) poor logistics in distribution of materials to health centers; and (f) poor integration between ONAPO and the Ministry of Health (MOH). These problems can be addressed and some action is already underway as shown below.

4.10 The fundamental problems of weak ONAPO leadership and poor integration between ONAPO and MOH are being addressed in part by transferring the large IDA-supported population project (which has been inactive under ONAPO control) to MOH which will provide it with the resources to better equip and supply health centers with family planning materials. MOH can gradually take over family planning services leaving ONAPO to play an advocacy and multi-sectoral coordination role. Other donors active in the sector such as USAID and UNFPA have also been making efforts to make their programs more effective. Different donor projects are poorly coordinated and despite the fact that Rwanda can use all the assistance it gets in this area, many donors seem to keep chasing the same programs. This problem can be resolved with strong government leadership and by reducing the rivalry between ONAPO and MOH. Family planning is too important to be left to volunteers; health workers (part or full-time) need to be better prepared to provide family planning counseling and contraceptives. In view of the importance of the sector many donors are willing to provide resources for this.

C. Environmental Issues

4.11 The environmental situation in agricultural areas of Rwanda is worrying, and problems are starting to develop in some urban areas. The principal problems come from the vicious circle of poverty, high population growth and pressure on the environment. In this cycle, the poor are the chief victims and chief culprits. A reduction in poverty itself is therefore a step to environmental recovery, but environmental improvements can themselves contribute to the reduction in poverty.

4.12 In Rwanda, the rapid growth of the population and very high population density have led since the turn of the century to dramatic deforestation and settlement on very steep hilltops. Although agricultural productivity has been rising steadily, population growth has recently been out-stripping it, contributing to an increased frequency of periodic famines and high vulnerability of the population to slight changes in prices and weather. Other consequences for the poor include long hours spent in searching for fuel and water, with impact especially on women and girls. Additional environmental problems related to poverty include dangerous landslides from settlement on overly steep slopes (an increasing problem as peri-urban areas become more densely settled with illegal townships), and respiratory illnesses resulting from poor ventilation and indoor cooking fires.

D. AGRICULTURE ISSUES

4.13 Agricultural growth in Rwanda has been affected by: (a) a high risk environment; (b) chronic food insecurity which forces farmers to first try to assure their food supply before looking for ways to maximize output and income; (c) excessive intervention by the state particularly in favor of coffee; (d) inadequate access to markets despite the country's good infrastructure because of regulatory and licensing requirements; and (e) very low input use to restore and/or increase soil fertility. Small holders are several times more productive than larger farmers. One study[20] shows that farms under 0.37 hectares produce crops worth over 100,000 FRW per hectare while farms larger than 1.91 hectares produce under 18,000 FRW/ha. This variance may be partly explained by the fact that large farms do not have many opportunities to sell in markets as the latter are poorly developed. Furthermore, another factor is the interaction between risk and food security as small farmers try to produce as much food as they can on their small plots. Food insecure farmers are unlikely to diversify to produce cash crops including export crops unless they feel that they have addressed their food security problem. If markets are well developed and reliable, farmers will be willing to trust the market, but until that happens many are likely to define food security as food self-sufficiency.

4.14 It is difficult to subscribe to the view expressed by the "Commission Nationale d'Agriculture" in 1991 and echoed in the draft agriculture strategy submitted in 1993, that small farmers should be encouraged to sell their farms so that larger farmers could absorb their property and become "more viable and more efficient". It seems that on the contrary, smaller farms are far more productive. Thus, strategies designed by small farmers are valuable contributions towards effective intensification and small farmers should be encouraged as long as they use their meager plots in a sustainable and efficient manner. While this does not mean that decreasing farm-size will invariably increase productivity, it implies that the government should be careful about recommendations to consolidate small farms into larger units.

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20 Nicholas Minot. *La consommation et les sources de revenu des ménages en milieu rural.* Presented to the *Seminaire sur les Résultats de l'Enquête Nationale sur le Budget et de la Consommation des Ménages.* Kigali, October 14-16, 1991.

4.15 The Government's recommendation to consolidate dispersed parcels into single parcels could also have negative consequences for women, as they have no right to inherit land and are given user rights to small plots controlled by their husband's, father's or brothers' lineage. Consolidation may effectively deny women access to land, particularly in the case of widows.

4.16 Even though women are responsible for food production, some surveys[21] show that only 20% of women have any say in major farming decisions such as the purchase of agriculture equipment. These are decisions left to men by tradition. There has been a significant increase in the numbers of female headed rural households reaching 22% in 1990[22]. These households are highly disadvantaged and many have no land. Even for those with access to land, the plots are small averaging less than 0.5 hectares. Agricultural services and policies with their bias towards cash crops ignore these farmers and provide no assistance to them. Unless this bias is removed, future programs to stimulate agricultural productivity risk leaving behind a fifth of the farm-households (mostly poor and increasing in numbers)[23].

Table 4-2: Profitability per Hectare for Key Crops in Rwanda, 1990

Crop	Rank	Returns per Hectare in FRW
Sweet Potatoes	**1**	**79,026**
Potatoes	**2**	**74,026**
Coffee	**3**	**58,926**
Banana	**4**	**54,330**
Peanuts	**5**	**43,806**
Cassava	**6**	**36,970**
Soya-beans	**7**	**33,712**
Tea	**8**	**31,255**
Sorghum	**9**	**29,117**
Beans	**10**	**23,418**
Peas	**11**	**9,394**
Maize	**12**	**8,833**

Source: Bank Staff estimates based on IFPRI farm budget data and USAID/MinAgri Surveys of Production and prices. Prices used are net revenue per unit output sold rather than official prices.

4.17 The profitability data shown in Table 4-2 demonstrate why farmers have been switching to sweet-potatoes and other tubers. Even with price support, coffee is in third place and is the most profitable only if farmers value the opportunity cost of their time at more than 80 FRW per day. In reality farmers do not choose among the wide range of crops illustrated above but within a narrower range suited to their ecological conditions, but, even so farmers in every ecological zone can find food crops which are more

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21 From data collected by the *Réseau des Femmes Rwandaises*.

22 According to the preliminary results from the population census.

23 An example could be the Government/ EC/French Cooperation proposal to provide subsidized inputs during a transitory phase in order to increase agricultural productivity. If women headed households are not in contact with external services, they would not benefit and would end up paying a premium to those ho useholds in contact with agricultural services. In effect, these poorer households could end up subsidizing better-off households.

profitable than cash crops. They will nevertheless grow coffee (and other cash crops) because they need some cash income[24] and because of restrictions against cutting down coffee bushes.

4.18 The coping strategies being used by small farmers provide valuable clues about how to increase agricultural productivity per hectare in Rwanda, which remains on the whole low despite the high population density. Farmers in the poorer regions of Rwanda are moving to farming systems similar to those in other densely populated parts of the world. They are: (a) diversifying by combining food crops, cash crops and animal husbandry; (b) using animal husbandry (particularly pigs) to convert household residues and waste from beer production into organic fertilizers; (c) switching to sweet potatoes as a staple food crop; and (d) applying soil conservation techniques such as tree planting. These practices which are getting more and more widespread are not only good for reducing risk and food insecurity but also environmentally sustainable.

Box 4-1: Bananas and Food Security

In Rwanda, banana varieties introduced late in the last century now occupy dominant role, primarily in the preparation of beer. Banana, which was a secondary crop before 1900, is now the major source of food energy. In 1990, banana production reached one fifth of the food energy supply or 1,000 billion kcal for Rwanda as a whole. This was followed by 900 billion kcal for sweet potato, 600 billion kcal for beans and 300 billions for maize. Interestingly, banana could provide additional food energy, which is presently lost, since an estimated 40% of the banana's calories are lost in the fermentation process. A major contribution to food security could be obtained by the replacement of beer banana by cooking bananas. This transition will not be easy due to cultural contraints and the fact that much of the beer bananas are grown by better-off farmers who are not food-insecure.

4.19 Agricultural services in Rwanda are focused almost exclusively on cash crops. But food crops account for 95% of the value of agricultural production in Rwanda and growth in cash crops alone will have little impact on overall growth. While it is important to increase cash crop production to inject the stimulus necessary for reorienting the agriculture system from subsistence to market based, agriculture extension services should start paying more attention to food crops.

E. THE URBAN SITUATION IN RWANDA

4.20 The development of economically dynamic urban areas is a key to the economic development of the country at large as well as to a reduction in poverty, especially rural poverty. This section analyses the reasons for the low urbanization found in Rwanda and the relative weakness of its urban economy.

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[24] The data from the poverty profile also shows that cash earnings from sales of food crops are higher than that from sales of coffee (see Annex A).

4.21 To the outsider, one of the great puzzles about Rwanda is its persistently low level of urbanization despite the mounting land pressures in rural areas and the low productivity of farm land. With its high population density, it would be expected that urban agglomerations would develop, but this has hardly been the case. The urban population has been growing less than 5% per year since the late 1970s and remains less than 10% of the population. "Villages" are usually a collection of small farms, rather than population centers as is understood elsewhere. Remaining widely distributed, surplus labor is unable to combine into viable units of production (even small ones) and help develop manufacturing or other non-farm production skills.

4.22 This settlement pattern has been encouraged by policy. Rwanda avoided the mistakes of many other developing countries and avoided the urban bias in public policy. In a largely successful effort to avoid the creation of slums, shanty towns and other urban housing for the poor, successive governments since Independence have made a concerted effort to keep the population in the rural areas. These efforts have been manifested by regulations limiting the size of urban areas, as well as by a program of rural investment which provides significant social services (including schools, health clinics, roads and other infrastructure) in the rural areas. Much of present policy continues to reflect these wishes, policies which are largely supported by the NGO and church communities as well as by other intellectual groups in the country.

4.23 While the rural biased approach has served Rwanda well in the past, its sustainability has come increasingly called into question as land pressure mounts. Periodic famines have emerged in densely-settled rural areas such as Gikongoro. The slow development of private sector enterprise (including the informal sector) is a noticeable limit on GDP growth. The challenge of providing adequate social infrastructure to the rural population is growing increasingly insurmountable. Meanwhile, the growth of "quartiers spontanés" (spontaneous neighborhoods) and dense settlement just outside city limits, is alarming policy makers. There is a threat of destabilizing disorder in urban life, which they would like to constrain.

4.24 Kigali holds 60% of the urban population (about 5% of the overall population). About 70% of all registered businesses are in Kigali, as are more than a third of all banking deposits. These businesses account for more than 20% of GDP. Government surveys have shown, however, that Kigali's commercial influence on the neighboring population is low (reaching perhaps 400,000 people or 6% of the rural population), and much smaller urban centers such as Butare, Ruhengeri, Gitarama, Cyangugu and Kibungo serve over 300,000 people each, with Butare reaching over 800,000. This is due to the proximity of these other cities to traditional trade routes, and is facilitated by Rwanda's well-developed communications infrastructure. A government policy document recommends the development of 10 such urban centers other than Kigali[25]. Many of these

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[25] *Articulation de l'Impératif Urbain avec le Développement Régional* (Articulation of the Urban Challenge with Regional Development), Division of Regional and Communal Planning, Ministry of Planning, Government of Rwanda, November 1992

towns are extremely small and some have small catchment areas (for instance, Kibuye[26] has 4,000 residents and serves an estimated population of 12,000).

4.25 This report analyses the effects of these rural biased policies on the household, especially the poor household. The conclusions drawn also have an implication for the macro-economy, although these will not be quantified. These issues are under study by the Government, and recommendations are often along the lines presented here though actions in terms of important changes in regulation or in investment patterns have not followed. The following issues in particular describe the present situation in the urban sector in Rwanda.

4.26 Restrictions on the size of urban areas. A web of regulations exist limiting the size of urban areas, through residence and work permits, land tenure regulations, business registration and other bureaucratic instruments. These regulations have the effect of increasing the number of poor people in the country, and increasing the poverty gap as well (the severity of poverty for those who are poor). Poverty increases as pressure on rural land increases and people are not able to move to cities (or other rural areas for that matter) to relieve the pressure and are thus trapped in increasing poverty. Aside from land pressure, people are not able to take up more productive job opportunities in urban areas if these arise, reducing the potential earnings of the household. The dead-weight loss to the economy is hard to quantify but could be significant.

4.27 This conclusion was supported by the results of the poverty profile, which showed that urban mean incomes were (in 1984-85) more than twice rural mean incomes. Only 11% of urban households were classified as poor, as compared with over 41% of rural households. Although it is not expected that rural and urban incomes would be equal (rural poverty is more pronounced in almost all countries), this difference is more pronounced than in a number of neighboring countries and can be reduced significantly. However, the poverty gap in the two areas was similar, (the proportionate gap between the average expenditure of the poor and the poverty line),[27] a finding which is unusual. In other words, the poor are less common in the urban areas, but are as poor as their rural counterparts. These data are consistent with the proposition that policies have limited the number of the poor in urban areas. It also points to the fact that opportunities for the poor in urban areas are limited and more need to be developed (see section (d) below on the informal sector).

4.28 Investments in rural infrastructure have increased living standards in the rural areas and thus limited the tendency of the population to migrate to urban areas. Religious organizations have been a major partner in the rural development strategy, complementing their dense network of churches with substantial assistance to schools, health centers and other public services. Although this policy achieves the desired effects, it is expensive for

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[26] Kibuye is the prefectoral capital but even within the prefecture, the cross-roads market center Mabanza with 10,000 people and servicing over 25,000 is a larger urban center.

[27] Adjusted for cost of living differences.

the Government. Also, the geographical pattern of investment has been less than optimal as measured by the accessibility of services to the poor. For example, health facilities are widely dispersed in the rural areas, including 18 rural hospitals each with a limited catchment area due to its rural location. Thus people in other rural areas without a health facility find it more difficult and more expensive to gain access to care than would be the case if the facilities were hierarchically based on town sizes (especially for transport logistics, cost and distance). This also limits the ability of health practitioners to follow up on their patients. The Ministry of Planning estimates that a third of the population and 40% of the land area may be in this situation.

4.29 Other low-income countries in Africa and elsewhere usually tend to place more than two thirds of investment in urban centers where only a third of the population lives. In Rwanda, however, the only sectors where urban investment has outstripped the urban proportion of the population in 1987-92 were health and water (more than a quarter of investment being in urban areas). All other sectors, including those of education and energy, have favored rural areas. Overall, 18% of non-agricultural investments were in urban areas, or about 15% of the total PIP. Private investment tends to go in the opposite direction, with only a quarter flowing to rural and agricultural projects.

4.30 Land tenure security. Under Rwandese law, all land belongs to the state. Officially, it cannot be bought or sold. Although various studies have found the tenure situation of rural land to be relatively secure (operating essentially under traditional law, and provoking few disputes except in the case of female-headed households), the situation seems to be reversed in urban areas, where the rights of the state come more directly into play, and where new settlement patterns are being established. At present, if the Government wishes to use land occupied by someone for another purpose, the land is confiscated and the current user compensated for the value of the investment in it - usually one year's harvest. Prices were set administratively in 1982. Arrears to displaced people are thought to be substantial (see Box 4-2) and interest is not paid. Although informal land trading takes place, the price of land is devalued by the insecurity of its tenure.

4.31 These laws are not unusual in the world, but are carried to a rather severe extent in Rwanda. For instance, if a local government decides to zone an area for industrial development, or middle-class housing, peasants will have their land confiscated. As practiced, this policy is strongly anti-poor.

Box 4-2: Up and Down the Poverty Ladder with Government Assistance

1. Maria, a poor landless woman, has four teenage children, all girls. She lives on a tiny plot of land at the edge of a village near a major town. The land is on the crest of a ridge and there are no fields associated with it. One of her two tiny huts has collapsed. She has no education and works, sometimes, as an agricultural laborer. She buys her food and water in the town. However, she has managed, with the assistance of the commune and of the church, to send her eldest daughters to good secondary schools, one at Gikongoro and one locally. The sixteen-year-old is doing well and hopes to become a teacher.

2. Joseph, a farmer, helps out his old father who lives on a small but fertile plot of land on a hillside. He was formerly the owner of 5 fertile plots in a river delta, but these were expropriated in order to build a school. The school, which will attract qualified students from all over the country, has tennis courts and football fields on the scarce flat land. Joseph was compensated FRW15,000 (now about US$100) in 1983, when this occurred. The government owes him a further FRW10,000 which he has not received, and on which he will never receive interest.

Source: Prepared by Bank Staff based on interviews with households.

4.32 Local government is fairly well developed in Rwanda. There are 10 prefectures, of which Kigali is the only urban one. There are 147 communes, headed by a *bourgmestre*, presently appointed by the president. From 1994, local elections will cover all local officials. A 1979 law identifying 12 urban districts ("*circonscriptions urbaines*") in the largest cities and towns was not followed with any actions to create urban authorities for these districts.

4.33 Local governments are responsible for the construction of primary schools, health and nutrition centers, certain courts, development and training centers, and for local administration such as the police. In addition, they often perform the task of urban land management, such as land titling, zoning etc. Zoning laws are typically strict. Due to the weakness of services provided by urban authorities, the Ministry of Public Works and Energy (MINITRAPE) often performs public services such as garbage collection and street repairs. Funding for this has come from the Central Government.

4.34 Urban local authorities have powers of taxation on economic activity including numerous "umusanzu" or informal taxes, which account for about half of their revenue. Estimates in 1989 indicated that local taxes, including community labor, could total as much as 15% of central Government revenues. However, since the advent of multi-partism in 1992, there has been a country-wide tax revolt, especially against local and informal taxes, and against the "umuganda" system of cooperative labor, which was required once a week of all residents. Most local governments therefore find themselves in a very difficult financial situation, which has left them unusually vulnerable to taxpayer lobbies (see sub-section on informal sector development) as well as severely weakening

service provision. A tax harmonization project is under way which will streamline the system of local taxes.

4.35 The informal sector in Rwanda is relatively weak and, although called informal, often quite highly regulated and taxed (see Box 4-2). Transition to the formal sector is also difficult. As the informal sector will of necessity provide the majority of new opportunities for urban employment in the foreseeable future, actions to stimulate it will be an important determinant of living standards for much of the poor population, especially of towns. Unemployment among the youth in towns (ages 20-24) was estimated at over 80% by the 1992 Employment Survey, although this may be overstated as informal sector employment was not covered.

4.36 Numerous regulations constrain informal-sector operators, in particular: (a) residence permits for employees; (b) zoning regulations limiting sales and production areas; and (c) restrictive labor legislation when an enterprise wishes to become formalized. Local regulations have if anything grown in recent years as the tax-paying and voting public (frequently owners of registered businesses or residents of nice neighborhoods) put pressure on local governments to further restrict and tax informal actors.

4.37 Other limitations on the size of the informal sector include the poor skills and the frequently low level of education attained by informal sector operators. A shortage of semi-skilled workers has been made up traditionally with labor from Zaire. Literacy and other training services are available from the Government to registered informal sector operators.

Box 4-3: Three Registered Cooperatives in Kigali

The cooperatives below are all registered with the local government of Kigali. This provides each of them with a *carte ambulante*, specifying where they can sell their wares.

1. A trader's association of people who have all moved to the town from the same rural commune. They sell fruit in a downtown kiosk. Previously, the women sold fruit on the street as individuals but were frequently harassed by the police. Along with their husbands, they then formed an association and appealed to the local government for assistance. They were put in touch with a Canadian NGO, which helped them to build the kiosk, which is in a convenient location. The opening ceremony for the kiosk was attended by the Ministers of Planning and Women's Affairs. The traders are doing well and have plans for expansion into other businesses. However, they would like to restrict other individuals from hawking their wares close to their kiosk without permits.

2. An association of youths who sell cloth in the city streets. They are a sub-association of a larger group. This larger group keeps their accounts and funds, on which they do not receive interest. Local venders associations also restrict new associations from selling on their turf.

3. An association of women who sell peas and beans in a market. They were formally unregistered but were frequently harassed by the police. Now that they are registered this has stopped. They have received credit from the Banque Populaire (FRW 180,000 between the 6 of them) which they were able to pay off in 6 months. However, they used it for rolling funds and were unsure of the benefit of such a loan.

Responses to some questions put to members:

Would you let someone join your association who can't read and write?
To be able to work with the others is the most important criterion. However, we would send them for training at the Government's literacy schools -- it's fundamental to the business to be able to read and write.

What is the benefit of getting registered?
The main benefit is that the police no longer harass us. You don't need to be registered in order to get credit or other public benefits.

What advice would you give other people thinking about going into your area?
Creating an association allows you to make better use of financial resources, ideas, etc. In addition, there is a social function, such as allowing you to get credit. In order to form a successful organization, you have to learn from others that have been successful.

Source: Prepared by Bank Staff based on interviews with cooperatives.

4.38 Other costs. In addition to the obvious limitations mentioned above, there are other less quantifiable costs of a rural biased strategy including: (a) inability to develop a critical mass of human capital sufficient to trigger rapid industrialization; (b) urban markets remain small and unable to stimulate the production of surpluses in the rural areas, perpetuating the low level of monetization of the economy; and (c) returns to

education, especially primary education, remain low as people cannot get jobs in the urban sector which require their newly-acquired skills. These costs, although difficult to measure specifically, could have severe negative consequences for the economic development of the country far into the future.

F. HUMAN RESOURCES DEVELOPMENT

4.39 Human resource development is at the root of the success of all countries which have achieved sustained growth with reductions in poverty. A healthy trained labor force is essential for achieving sustained economic growth and may indeed help to drive economic growth. AIDS reduces productivity, with frequent need for absences for treatment, and workers tend to die in their most productive years. AIDS also increases poverty through either the death or the inability to work of the principal earner. Malnutrition has a debilitating effect on worker effort and tends to reduce earning capacity perpetuating poverty.

1. Education

4.40 If Rwanda is to achieve the economic transition to labor intensive industry, the number of students with general secondary education needs to increase. This is the group identified by most labor intensive industries as the most trainable and adaptable. Primary school enrollment rates in Rwanda are failing to keep up with population growth and the transition rate to secondary remains less than 10%. The weakness of the education system means that the labor force is not attaining the level necessary to attract labor intensive industries

4.41 Women (and girls) have special problems and they account for less than 40% of the enrollment in public secondary schools. Their drop-out rates are almost twice as high[28] as male students and may be explained by the cultural bias in favor of men entering the monetary economy. The situation is worse at the tertiary level where women account for 1% of total enrollment.

2. Health

4.42 Health conditions are poor because of: (a) a worsening malaria epidemic that is increasingly chloroquine resistant; (b) increasing AIDS which increases other diseases such as TB; and (c) the inability of the health system to tackle these difficulties. Most public health facilities lack medicines and other supplies and yet these are the centers that the poor rely on as they do not usually have the resources to pay even the nominal charges at the NGO centers. Whatever resources are available to the public health system are badly managed and more expensive curative medicine is favored over more cost effective preventive medicine.

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[28] The dropout rate for women was 14% as opposed to 9% for men.

3. AIDS

4.43 Thwarting the AIDS threat to overall economic and social progress and to the success of anti-poverty measures specifically will be a gargantuan challenge, given the high rates of HIV prevalence, the weaknesses in health and social services, and the deeply ingrained sexual behaviors of Rwandese culture. Many of the appropriate responses have already been initiated by the Rwandese authorities, but they will need to be scaled up several fold to have an appreciable impact.

3. Malnutrition

4.44 Rwanda's high rates of malnutrition could have the effect of lowering productivity. Results from on going Bank-financed research on Rwanda shows that poor nutritional status forces adults to take more rest between work periods. The data also shows that were they not forced to rest, they could have done some more work to improve productivity on their holdings. This means they are not resting just because they have nothing to do. The high levels of productivity achieved by small holders in sweet potatoes illustrate the possibility of increased productivity with increased effort even in land scarce situations.

V. RECOMMENDATIONS FOR A POVERTY REDUCING GROWTH STRATEGY

A. OVERVIEW

5.1 The poverty profile shows that poverty is widespread in Rwanda implying that it cannot be reduced simply by targeted programs. Poverty reduction in Rwanda will be achieved in the long term by sustained labor intensive growth, human resource development and slowing down population growth. Thus, poverty alleviation should encompass a series of measures including macroeconomic policy, regulatory issues, taxes and public expenditures. The challenge is not only to ensure that growth takes place in Rwanda but also to ensure that among the various choices for growth-inducing policies, the one that does most for poverty reduction is chosen. This goes beyond simply choosing labor intensive approaches over capital intensive approaches and includes a wide range of public actions and policies. Rwanda's future lies in effective utilization of its abundant hard-working labor force and in assuring that this labor force is productive and responsive to the needs of a modern economy. Thus, the quality of human resources needs to be enhanced through improvements in education and health. Any successful growth strategy needs to include an effective family planning program to slow down population growth. Moreover, any poverty reducing growth strategy for Rwanda will need to start with removing restrictions to free labor movement and moving agricultural policy and practices away from a bias towards specific crops towards encouraging an environment which allows farmers to produce the most profitable crops.

5.2 This chapter proposes a poverty reducing growth strategy for Rwanda taking account of the issues raised in Chapters II to IV. It starts by examining the overall economic framework which can underpin poverty reducing growth and proceeds to recommending essential macroeconomic, public expenditure and regulatory changes necessary to create the conditions for poverty reducing growth. It then examines the key sectoral policies that are needed to achieve such growth.

B. OVERALL VISION

5.3 Rwanda needs to move from a low productivity subsistence economy to a higher productivity market based economy [29]. To get its economy moving, it is necessary to infuse cash into the economy, mainly by increasing exports. Rwanda's principal resources are its labor force and eternal spring climate. Thus, the country needs to move towards labor intensive exports and high value agriculture to provide the cash injections needed to stimulate its economy. These initial cash flows into the economy can provide the catalyst

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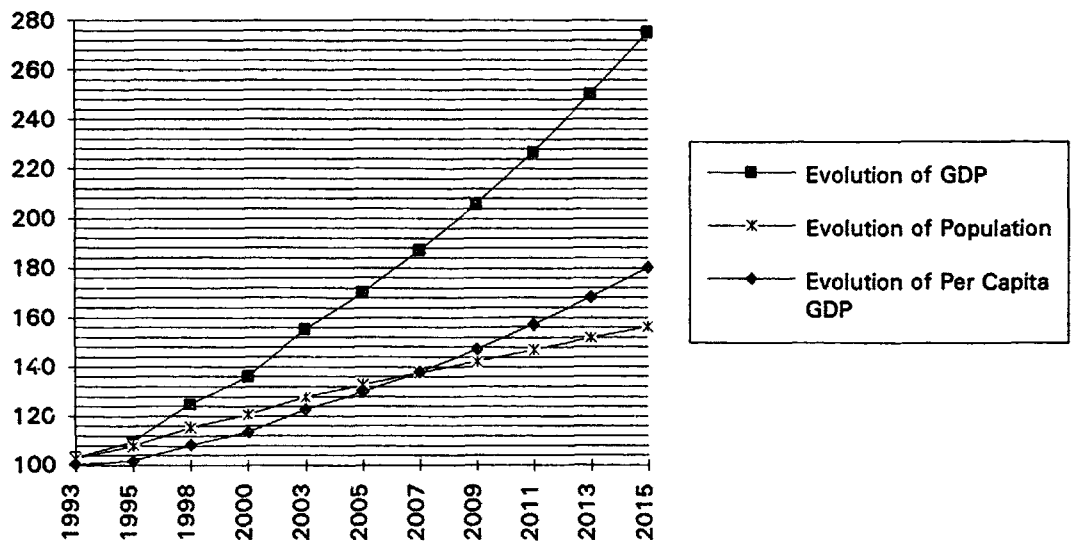
[29] The long term strategy described here is drawn from ***Rwanda: Note de Stratégie Economique: Vers une Croissance Durable,*** World Bank, 1993. (ESN) The macroeconomic framework in this report has been based on the ESN and underlies the projections given here.

to pull Rwanda's agriculture out of subsistence, and to develop an active non-agriculture sector creating employment opportunities for large numbers of the unemployed. Farmers will have the incentive to increase productivity to supply the industrial market centers; and with their cash incomes, can in turn provide the markets for urban goods. This should help to sustain growth.

5.4 The growth strategy described above can be put in place if the role of the state is reduced to: (a) providing a stable macroeconomic environment; (b) supporting family planning to reduce population pressures; (c) enforcing a coherent legal and regulatory system enabling private entrepreneurs to operate in a business friendly environment; (d) maintaining quality infrastructure; (e) promoting human resource development; and (f) protecting the environment. Specific actions to encourage foreign investors should include establishing a one stop investment approval system; revised commercial codes and setting up a commercial tribunal to arbitrate business cases. All regulations concerning movements of population and labor would need to be lifted and the state should be open to non-agriculture development and the emergence or expansion of major market centers. Growth rates that appear to be feasible (starting from 3% to 4% in the 1990s rising to 5% by 2010) in response to improved policies are shown in Figure 5-1 below. The population growth rate shown below assumes much more substantial decreases in fertility than assumed in table 4-1.

Figure 5-1: Evolution of Key Macroeconomic Indicators with 1992 = 100

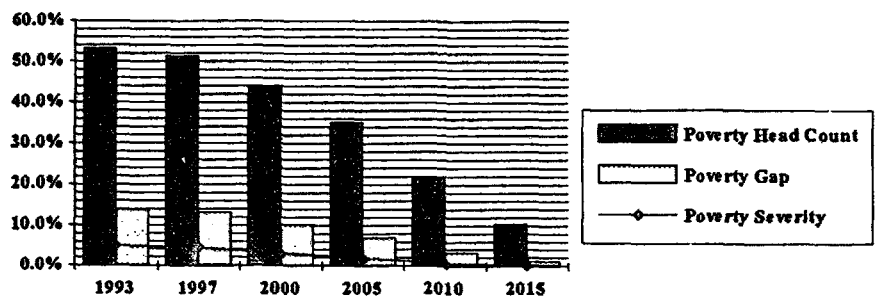


Source: Bank Staff Estimates

5.5 Attaining and sustaining the GDP and population growth rates described above could significantly reduce poverty as illustrated in Figure 5-2. If these growth rates are

achieved the population below the poverty line would drop from 53% in 1993 to 44% in 2000 and to only 10% in 2015. The amount of transfers necessary to bring those in poverty up to the poverty line would cost only 0.1% of GDP[30] in 2015 which is quite manageable. Even before the year 2000, these quite modest levels of growth can help reverse past trends and reduce poverty significantly.

Figure 5-2: Projections of the Impact of Sustained Growth on Poverty



Source: Bank Staff Estimates assuming constant income distribution with Gini=.27.

C. Recommendations for Macroeconomics and Public Finance

1. Macroeconomic Policies

5.6 The overall objective is to reach and maintain sustainable growth. Accelerated growth would be the result of coherent macroeconomic and sector policies. Macroeconomic policies would have to aim at lower government budget deficits which would be financed in a non-inflationary and sustainable way, mainly from external sources. The exchange rate would need to be competitive so as to make existing export crops profitable without government subsidies and to stimulate the development of new export activities. With declining government deficits and low inflation, monetary policy would be freed to provide credit at reasonably low real interest rates for accelerated private-sector growth.

5.7 As immediate steps to control the budget deficit the Government needs to (a) re-establish budgetary controls and discipline, (b) reduce spending in non-productive areas including the military, general administration and subsidies to public enterprises; and (c) improve resource mobilization by improving tax administration and expanding the tax base. In the long run, revenues would be increased by: (a) making the revenue base more income elastic; (b) economic growth; and (c) increased monetization of the economy. Expenditure growth can be restrained by: (a) controlling spending for general administration; (b) reducing recurrent spending in all areas except education, health, population and infrastructure maintenance; and (c) withdrawal of the state from the

[30] Compared with over 6% in 1992 and 4.6% in 1985.

productive sectors. If these targets are achieved, the fiscal current deficit could be reduced from almost 9% of GDP in 1993 to under 6% by 2000. If public investment were to be included the deficit would be higher, but there it is almost entirely donor financed in grants and concessional loans. The loan servicing costs are already included in current expenditures.

5.8 To stimulate growth, the Government needs to: (a) remove restrictions on spatial and sectoral labor mobility; (b) remove price fixing arrangements and regulations in transport which keep costs high and discourage the development of an open economy; (c) revise expropriation law so that expropriated land is compensated at full economic costs; and (d) improve land tenure to clearly define property rights and reduce transactions cost. Such deregulation would support the development of non-agricultural development and would require adequate investment in infrastructure.

2. Public Expenditure and Taxes

5.9 The public expenditure program is an essential tool in orienting a country's growth strategy and in reducing poverty. This section makes proposals for a public expenditure program to sustain growth and reduce poverty through a combination of (a) withdrawal of the state from productive sectors leaving them to more efficient private sector entrepreneurs, (b) reducing general administration budgets to the minimum necessary, (c) increased financing for human capital formation to provide the quality work-force necessary for a modern economy, (d) increased support for family planning, and (e) expanding infrastructure to facilitate overall growth of market centers. These are essential to encourage growth and to provide the poor with the tools necessary to contribute to and benefit from growth. Increasing the level of public expenditures for priority activities is a necessary but not sufficient condition for poverty reduction and growth. The additional resources should be used more efficiently and priority should given to targeting these expenditures to the poor and to areas with high positive externalities. (For example, increasing public higher education expenditures will not do much for poverty reduction and may not even be necessary for growth because private returns to higher education are high and people will finance it privately if need be either through their own resources or student loans). The arrival of peace and withdrawal of the state from productive sectors should permit deficit reduction even while increasing expenditures on human resources development, family planning and infrastructure. Tables 5-1 and 5-2 provide two examples of how public expenditure patterns can be revised to provide for spending on human resource development and infrastructure maintenance while reducing the deficit.

Table 5-1: Proposed Equitable Public Expenditure Program - Alternative I

	1993	1994	1995	1996	2000
Social Services	9,098	9,803	10,537	11,495	16,100
-Education	6,964	7,186	7,408	7,630	8,800
-Health	1,908	2,361	2,813	3,265	6,300
-Other	225	256	316	600	1,000
Economic Services	2,055	2,070	2,086	2,104	2,243
Other Items	27,847	27,529	27,185	26,620	26,148
Interest on Public Debt	4,851	4,931	5,013	5,095	5,605
Total Recurrent Expenditures	43,851	44,333	44,821	45,314	50,096
Public Investment Expenditures	29,350	33,274	37,573	39,755	45,438
Total Revenues	24,925	25,947	27,010	28,118	33,850
Current Deficit as % of GDP	8.7%	8.2%	7.7%	7.2%	5.8%

Source: Bank staff estimates. Amounts in Millions of Rwanda Francs at 1991 Prices

5.10 The proposals in Table 5-1 are based on the following assumptions. Expenditures for health, population and basic education to increase at the expense of defense expenditures and productive activities such as mining, and manufacturing which should be transferred to the private sector. Health expenditures to rise to $5/capita[31] by the year 2000 and education expenditures to $7/capita. This would increase public health expenditures from 1% of GDP to 2.3% of GDP by the year 2000 and would keep the share of education expenditures constant at 3.2% of GDP. The only other sector assumed to increase is transport and infrastructure to provide for the improvement in infrastructure necessary for future development. This scenario would restore social sectors share to about a third of government expenditures, which was their share when they were more adequately funded in the more normal year 1985.

Table 5-2: Proposed More Equitable Public Expenditure Program - Alternative II

	1993	1994	1995	1996	2000
Social Services	9,098	9,803	10,911	14,692	23,600
-Education	6,964	7,186	7,408	9,631	12,500
-Health	1,908	2,361	3,187	4,461	9,900
-Other	225	256	316	600	1,200
Economic Services	2,055	2,095	2,140	2,189	2,465
Other Items	27,847	27,504	26,758	23,337	18,426
Interest on Public Debt	4,851	4,931	5,013	5,095	5,605
Total Current Expenditures	43,851	44,333	44,821	45,314	50,096
Public Investment Expenditures	29,350	33,274	37,573	39,755	45,438
Total Revenues	24,925	25,947	27,011	28,118	33,851
Current Deficit as % of GDP	8.7%	8.2%	7.7%	7.2%	5.8%

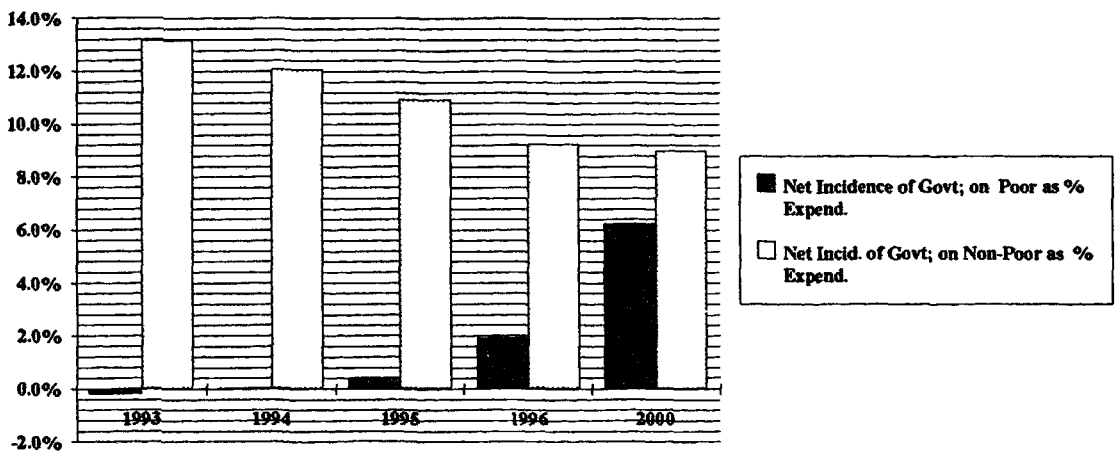
Source: Bank staff estimates. Amounts in Millions of Rwanda Francs at 1991 Prices

[31] Rwanda is classified among the low income group countries of SSA , with very low average public health expenditures of $1-2/capita. Middle grouping SSA countries are currently spending a more adequate $5/capita in average for health (*Better Health in Africa*, World Bank, 1993).

5.11 The second alternative proposes to increase health expenditures to $8/capita by 2000 (which is approximately the level recommended in *Better Health in Africa*[32] once population and water and sanitation expenditures are excluded). Education expenditures are proposed to grow to $10/capita and family planning expenditures to $1/capita. Under this alternative education expenditures are expected to rise from 3.2% of GDP to 4.5% of GDP while health expenditures rise from 1% to 3.6% of GDP. The share of the social sectors rises to 47% of expenditures in the year 2000 under this alternative. This is not too high compared to the 35% achieved in 1985 when one considers that the state was active in many areas in 1985 from which it should have withdrawn by the year 2000. The education sector is capable of absorbing this level of expenditures. Primary education enrollments need to keep up with the population and a major expansion in secondary education is required. Some public resources allocated to the education sector may also be used to support private secondary schools (as in Mauritius) and provide scholarship funds for poor students. The health sector should also be able to use the level of resources proposed with the changes in management underway. Furthermore, support to the NGO health sector can be increased on condition that they allow family planning workers and modern contraceptives on the premises. The public expenditure program proposed in Table 5-2 is also more equitable as shown by Figure 5-3.

5.12 The alternative in Table 5-2 is recommended as it would sustain growth and reduce poverty much more than that in Table 5-1. This alternative provides for significant increases in per capita education expenditures which is necessary to create appropriate conditions for growth. But in case public finance constraints are worse than projected in the ESN, the first alternative provides an acceptable fall-back position.

Figure 5-3: Net Incidence of Tax and Expenditure using Alternative II



Source: Bank Staff Estimates

[32] Report No. 12577-AFR *Better Health in Africa*, Africa Region, World Bank, December, 1993.

D. SECTORAL STRATEGIES

1. Population and Family Planning

5.13 Reduced population growth is an essential precondition for sustained poverty reducing growth because it: (a) reduces pressure on existing capital resources, (b) frees up resources for improving quality rather simply keeping up with population, (c) frees up household resources for investments in productive capital and improving the human capital of children, and (d) reduces pressures on the environment.

5.14 Rwanda needs to develop an aggressive family planning program by: (a) Information Education and Communication (IEC) campaigns targeting social constraints and mores opposed to family planning; (b) re-dynamizing family planning services through increasing professionalism in its corps of volunteers; (c) improving management and logistics in the public health systems as over 95% of contraceptive users get their contraceptives from this source; and (d) improving the quality of care to attract people to the public health centers[33]. Public health and family planning services often suffer from logistics problems in supplying centers. These should be addressed by contracting the private sector.

5.15 An aggressive family planning program will require courage and leadership from secular leaders as many ideas will run directly against official church policy. However, many Rwandese active in the Catholic Church are also getting more aware of the need to support family planning. This can be strengthened by offering grants to NGO centers conditional on provision of family planning services.

2. Environment

5.16 Conserving the environment is essential for long term poverty reduction even though short term benefits can be gained from exploiting the environment. An example is the case of burning a wooded hill-side to make charcoal. While this generates income in the short run, it leads to increased soil erosion reducing soil productivity and increasing poverty in the long run. Proper management of the environment can help conservation and increase the flow of income over the longer run, particularly for the poor.

5.17 The following policies would help to diminish the cycle population pressure-poverty-environmental degradation-poverty: (a) facilitating the population growth reduction already under way through better provision of family planning services; (b) improvements in agricultural techniques; (c) improvements in IEC for environment-related issues; (d) improvements in technology for energy use; and (e) improvements in water and sanitation infrastructure. It is difficult to envisage environmental protection without reducing poverty or providing the poor a stake in protecting the environment.

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[33] This is important because while public clinics provide contraceptives and advice on family planning most church clinics do not because of the Catholic Church's interdiction on most contraceptive methods.

This can be done through participative management of common areas and allowing poor families to derive an income from sustainable exploitation of common areas such as community woods. Specific environmental protection measures include: (a) inter-cropping food crops, cash crops and tree crops; (b) using animal husbandry to recycle soil nutrients; (c) developing urban centers to reduce population pressures on marginal land; and (d) promoting use of more efficient stoves and alternative energy sources to reduce fuel-wood consumption.

3. Strategies to Stimulate Agricultural Growth

5.18 Growth in domestic agriculture, both food and cash crops, is essential to help propel Rwanda to a sustainable growth path. Cash crop growth can help inject cash into a subsistence economy moving it towards a market economy. Growth in food crop production not only helps to increase food security but also allows the country to become more competitive through exchange rate devaluation and with few adverse effects. As the importance of domestically produced food in the consumers market basket grows, the likelihood of consumer prices increasing following currency devaluation decreases. Nominal wages follow consumer prices and when consumer prices increase less than the devaluation, the competitiveness of the economy increases. Furthermore, as the bulk of the poor live in rural areas and are farmers, increases in agricultural productivity will help to reduce poverty.

5.19 A successful strategy to achieve sustained agricultural growth in Rwanda will need to include the following: (a) allow the growth of larger market centers; (b) reduce risk by promoting proper inter-cropping practices[34]; (c) promote animal husbandry[35] to diversify agriculture and help replenish soil nutrients; (d) improve food security by providing research and extension in crops such as sweet-potatoes; and (e) target agriculture services to women farmers who constitute a fifth of farm-households, a proportion which is growing. Furthermore, in view of the higher productivity of small farmers, the government should reconsider recommendations to consolidate farms into larger units.

5.20 Women farmers have special needs and, as they are the primary food producers, results of food crop research should be targeted to them. It is also recommended that women be integrated in the design and implementation of programs and projects aimed at improving agricultural productivity.

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[34] This is necessary because private incentives are geared to increasing short run output. Proper inter cropping is good for the environment and while immediate yields may be somewhat lower, the long-term stream of yields will be higher.

[35] As in footnote 28 above social benefits are likely to be higher than private benefits.

4. Strategies for Stimulating the Non-Agriculture Sector

5.21 Growth outside agriculture and progressive growth of larger market centers are essential preconditions for moving Rwanda from a subsistence to a market economy and relieving pressures on the fragile rural environment. These centers would provide markets for rural production and provide the critical mass necessary for labor intensive industries and other activities that would be spawned from these industries. The increased population concentration would also reduce the per capita costs of delivering basic services. Increased growth of large market centers would help to reduce or slow the growth of rural poverty though the proportion of poor in market centers would rise as people migrate from rural areas. The poor in the market centers are likely to be better off in their new locations than they would have been before moving as they would have opportunities to work in the informal sector. Thus, overall poverty would decline.

5.22 This report recommends that the government relax its policy toward population movements and allow the population to flow where it wishes. This will probably lead to increased urbanization. While the poor population of market centers will unavoidably increase, the stimulus to greater economic activity in both urban and rural areas should make this policy a cornerstone of the government's poverty-reduction program. In order to reduce the negative consequences of such an influx, this report recommends also that the government make selective investments in these centers, favoring the poor and protecting the environment. The types of changes necessary include: (a) regulatory changes concerning population movements; (b) strengthened role for urban and local authorities; (c) development of roads and utilities; and (d) development of private and informal sectors.

a. Regulatory Changes Concerning Population Movements.

5.23 There are two sets of regulatory changes concerning population movements which could have a positive impact on the living standards of the poor:

5.24 **Improved land tenure,** especially in urban and peri-urban areas where land use patterns are rapidly changing, could make a significant impact on the lives of the poor. Rather than being further impoverished by urban development, if they need to be expropriated, they will be able to capitalize on rising land prices. Furthermore, they will have incentives to make long-term investments in the land they own, including housing, sanitation and roads. Secure land tenure would allow the private sector to provide appropriate, affordable housing. Attempts by the Government to provide low-income housing or housing credits will probably confront the same obstacles seen in other countries -- capture by the wealthier and more influential members of society. These are therefore not recommended as a strategy for poverty alleviation. A cadastral project to establish some tradable property rights is under way on an experimental basis in Butare. However, progress is slow and limited by zoning regulations requiring the building of access roads before titles can be issued. It should be accelerated and, if successful, implemented elsewhere.

5.25 **Easing Residence Permits.** In principle, if a person stays more than three days away from his official place of residence, he is supposed to get a residence permit from the new local government, especially if he is planning to work. The policy is still popular with many in central government and local government although there are many violations of this rule (especially for short-term visitors). Its existence reduces the incentive for labor to move, as well as reducing employment security. The abolition of residence permits has been tabled in parliament and should be approved as soon as possible.

b. Strengthening the Role of Urban and Local Authorities.

5.26 Local institutions, especially elected ones, are of necessity responsive to local needs and demands. National policy must counter-balance the lobby of the richer urban residents who are understandably unwilling to allow increased immigration of the poor into their towns. In order to reduce the local government's excessive dependence on the few taxpayers; and their consequent and natural inclination to heavily tax all small entrepreneurs, the central Government must transfer more resources for distribution at the local level until local tax bases grow large enough. This will allow local authorities to balance the interests of the public at large against the anti-competitive instincts of their few significant taxpayers. In addition, a reduction in the tax rate and simplification of registration procedures and requirements will bring more businesses into the taxpaying group, broadening the tax base.

c. Avoiding Problems of Urbanization

5.27 The government's desire to avoid the most obvious problems of third-world cities (large slums, crime, drugs, etc), is understandable. Though not all problems can be avoided as development progresses, some can be alleviated or their impact reduced as discussed below.

5.28 **Development of low-income *quartiers*.** To support urbanization in an orderly and progressive way, this report recommends a program of investment in basic infrastructure, complemented by simple schemes to cover recurrent costs. In particular, areas zoned for the dense housing associated with lower income groups should include sufficient water and sanitation infrastructure, which should be built as a priority. Preferably, these should be put in place before settlement occurs, which will require zoning decisions in the coming few years.

5.29 Investment in infrastructure specifically for the poor can be much cheaper than an overall subsidy to the population in general (poor and non-poor). In order to attain its objectives at reasonable cost, such a policy must be well-targeted. For this reason, self-targeting could be the most efficient method of transferring resources to the poor. In this case, public provision of infrastructure would limit itself to relatively unpopular kinds of structures to avoid capture by wealthier groups. For instance, public standpipes and hand pumps would be self-targeting as opposed to indoor water systems. This way, the

Government can assure the poorer residents of minimal health, hygiene and environmental standards, without forcing them to bear the extra costs of a "comfortable" living.

5.30 Governments should ensure that other public service provisions (schools, health clinics) keep pace with the rising population in the new market centers. Present policies favoring the wealthy (in particular zoning and investment policies) should be re-examined and perhaps eliminated. Examples of such policies are development of large lots for villas.

5.31 **Use of labor-based techniques for infrastructure development.** In order to improve infrastructure in the new market centers while providing substantial employment, the Government can make use of labor-based techniques. These could be especially useful in the construction of roads, water supply systems, sanitation and public buildings such as schools and health facilities.

d. Development of the Private Sector

5.32 **Liberalization of restrictions on (small-scale) private business** will be imperative for the growth of non-agriculture employment and the private sector. Local governments should consider substantially liberalizing the zoning regulations on these operators, allowing them to produce and sell where they find the market. Registration requirements should be simplified and kept cheap to encourage businesses to register and to allow the state to do the necessary public health and environmental supervision. Restrictions on all firms employing fewer than 15 or 20 people should be removed except for regulations pertaining to public health and safety. Restrictions and taxes on trade with neighboring countries should likewise be reduced. Only with massive growth in employment can Rwanda foresee a socially quiet, prosperous future.

5.33 Most formal *lending* is already concentrated in urban areas, especially Kigali. Constraints on credit appear to be those of collateral, information and lack of viable investments rather than an absolute shortage of funds to invest. The policies mentioned throughout this paper, which would improve land tenure (collateral), education (information) and the climate for entrepreneurship development, would all have a positive effect on improving the use and efficiency of available credit sources.

5. Strategies for Human Resource Development

a. Education

5.34 Education is the principal way for the poor to acquire the skills necessary to escape from poverty. Furthermore, a labor force with a good level of basic education is needed to attract labor intensive industries to Rwanda. The following steps are needed: (a) improve quality and relevance of education; (b) develop primary schools which tend to generate the highest social benefit; (c) develop general secondary education including support to private secondary schools; (d) increase the participation and performance of women at all levels of education; (e) establishment of a program to help poor families

finance their education costs e.g. free primary education for children and cost recovery for higher and technical education; and (f) eliminate controls on labor movement to improve economic returns to education.

b. Health

5.35 A healthy and productive labor force is an important precondition for economic growth. Poor health conditions can affect productivity reducing incomes and increasing poverty. To achieve better health for the population, the following steps are needed:(a) increase resource allocation to basic health care and priority programs (AIDS, malaria, TB, malnutrition); (b) make essential drugs accessible to the entire population through a pharmaceutical sector reform; (c) improve health sector organization and management at both administrative and service delivery levels; and (d) develop new health financing mechanisms to increase resource availability as well as equity and efficiency.

c. AIDS

5.36 Increasing numbers of children including those from formerly middle class families are becoming pauperized as parents or other income earners fall victim to AIDS. It is rapidly becoming one of the leading causes of increasing poverty among children in urban areas and the problem is spreading to rural areas. More information and analysis of the impact of AIDS is needed to enlighten public policies and to mobilize the political will and resources to attack the problem. Sustained efforts are needed to: (a) change sexual practices, especially among the young; (b) expand the availability of condoms through public services and social marketing, as well as creative IEC to convince high risk individuals to use them; (c) expand training and services for detection, treatment and prevention of sexually transmitted diseases (STDs), including the integration of STD/AIDS concerns into family planning programs; (d) develop and implement home-based care of AIDS patients to free up hospitals and health centers for non-AIDS cases; and (e) develop low-cost, family-oriented approaches to the care and education of orphans.

d. Malnutrition

5.37 Poverty is at the core of the malnutrition problem. While the complete elimination of malnutrition is difficult without major reductions in poverty some improvements can be achieved at low cost through nutrition monitoring and nutrition education. It is recommended that the following steps be taken: (a) monitor nutritional status of children; (b) provide nutrition education; and (c) support supplemental feeding integrated with nutrition education where possible.

6. Special Issues Affecting Women

5.38 Changes in Rwandese society have resulted in many women losing their traditional roles as food producers without gaining a new role consistent with an

increasingly monetized economy. These women are heads of household with little access to arable land and they and their children are forced to live in poverty. Strategies to redress the special problems faced by women and to help increase their income include: (a) adopting laws improving women's rights in marriage and land ownership; (b) launching IEC campaigns to raise women's awareness of their rights; (c) expanding women's organizations to promote credit programs targeted to poor women such as the Grameen Bank in Bangladesh; and (d) promoting female enrollment at all levels of education.

ANNEXES

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ANNEX A: POVERTY PROFILE FOR RWANDA[40]

A. Introduction

1. With a GNP per capita estimated at $230 in 1992, Rwanda is among the world's least developed and poorest countries. However, while Rwanda has a very low average income, some groups in the country are clearly poorer than others. A premise of this report is that these groups have a special claim on targeted assistance to raise their income and consumption possibilities. This presupposes, in turn, that an effort be made to establish a poverty profile and to identify target groups and regions for priority assistance.

2. A poverty profile is a study in which (i) the incidence of poverty in specified regions and socioeconomic groups is measured by reference to a poverty line and (ii) the differences in the sources of income, the patterns of expenditure, and living standards achievements between the poor and the non-poor are analyzed. This should make it possible to identify targeted policy measures capable of reaching the poor and to evaluate the impact of proposed policy measures on the poor. For example (and hypothetically), if coffee producers displayed a high incidence of poverty relative to the national average, a reduction in the price of coffee to raise government revenue would have to be judged with caution from a poverty alleviation perspective. If rural poverty were found to be concentrated largely among those with landholdings below a certain critical acreage, changes in land rights and inheritance practices, and employment schemes targeted to the land-poor, would likely figure high on the list of poverty alleviation interventions. If tradeables weighed more heavily in the consumption patterns than in the income sources of the poor, a devaluation would be expected to further reduce the well-being of the poor in the absence of favorable general equilibrium effects. Interventions to reduce poverty in the short run might in this case again include public works projects, but would also need to focus on measures to overcome the constraints which limit the participation of the poor in the production of tradeables. And finally, if subsidies to goods and services heavily consumed by the poor were cut, poverty would again be expected to rise in the country. An understanding of the consumption patterns of the poor (as opposed to the population at large) is indispensable to guide efforts to restructure the composition and regional allocation of public expenditure for poverty reduction.

3. This annex develops a poverty profile for Rwanda for the period 1983-85 which can thereby serve as a benchmark against which the future evolution of welfare in the country can be evaluated. The Rwandan economy is currently undergoing a period of profound change engendered by internal and external shocks, including high population growth, ethnic strife, an AIDS epidemic, structural adjustment, and unfavorable terms of trade. Both government and the donor community attach great importance to the monitoring of living conditions over time in this context, and to efforts to trace changes in

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40 This annex was prepared by Marco Ferroni with help from Nicholas Minot.

living conditions to changes in the policy environment. The poverty profile presented in this report is "static" in the sense that it refers to one particular point in time. Longitudinal household data will be collected in future years under the Food Security and Social Action Project currently under preparation in Rwanda with assistance from UNDP and the World Bank. The poverty profile presented below, therefore, serves as a point of departure for the analysis of future data which will permit "dynamic" or over-time analysis. At the same time, it is hoped that the analysis below will serve the purpose of guiding policy decisions aimed at the reduction of absolute poverty in Rwanda.

4. The report is divided into 9 sections, including this Introduction. The sections cover methodological aspects (sections 2 - 4), an analysis of the regional distribution of poverty (section 5), a discussion of the assets held by the poor (section 6), detailed descriptive analyses of income sources and expenditure patterns (sections 7 and 8), and a brief conclusion (section 9).

B. Data Source

5. Our analysis is based on the results of the Enquête Nationale sur le Budget et la Consommation (ENBC), conducted by the Ministry of Planning of Rwanda over 1983-85. The ENBC employed a stratified random sample of 270 rural households and 297 urban households. Data were collected on household composition, income, expenditures, food consumption, daily activities, and household assets. Estimates of cash expenditure, cash income, transfers, and barter are obtained from two budget questionnaires, one involving four rounds of 14 daily interviews and the other involving four retrospective interviews. Estimates of the home production of food are derived from the food consumption survey, which was administered in four rounds of seven daily visits.

6. For non-cash transactions (including the home production of food), monetary values were imputed using prices observed for cash purchases in the same round and in the same region. In addition, all monetary values are deflated using a regional price index based on the price of 35 basic commodities. The monetary values in this report are thus expressed in Rwandan francs at the prices of the capital, Kigali, in 1985 (the price index is explained in greater detail in Annex A). Weighting (or expansion) factors were calculated for each household as a function of the probability of selection given the sampling method. For example, urban households represent about half the sample but barely 5% of the Rwandan population; the use of weights ensures that urban households are not over-represented in the national averages and percentages.

The small sample size while being robust enough for national estimates and estimates for broad sub-regions does not lend itself to analysis at the prefecture and commune levels. The ongoing prioritiy survey will provide a more robust base for analysis at the prefecture and sub prefecture level.

C. Definition of Poverty

7. In order to define poverty, it is necessary to have a measure of the standard of living and to choose a level which separates the poor from the non-poor. Various measures of the standard of living have been suggested, including income, expenditure, the proportion of expenditure allocated to food, caloric intake, and nutritional status, as well as "intangible" criteria such as freedom, the right to vote, gender equality, and other factors. The data available to us for the purpose of this report do not include intangibles or physical quantities of food consumed. We use total real expenditure per capita as a proxy for the standard of living of the households interviewed by the ENBC. Total expenditure is the sum of cash expenditure on consumption goods and services, the value of own-produced food, the value of transfers received in kind, and the value of goods received in barter transactions. It includes some durable expenditures but excludes the purchase of buildings, land, and vehicles. Because the imputed rental value of houses could not be calculated, rent payments were also excluded. This measure of total expenditure is "real" in that it is adjusted for the level of prices in each region (Annex A). It is expressed in per capita terms to adjust for household composition.[41]

8. Total expenditure is a broader measure of the standard of living than caloric intake and nutritional status since it reflects the plausible assumption that household welfare is affected by food variety and non-food amenities as well as more specifically nutritional variables. Compared to income, total expenditure is more easily measured, particularly in the context of less developed countries where many households have business expenses which must be netted out of income. In addition, households probably "smooth" their expenditure over time in the face of fluctuations in income. The result is that the level of expenditure is a measure of the "permanent" or "average" income of the household. This is the income concept which theory suggests should be used for the kind of analysis which is presented below.

9. Given this measure of a household's standard of living, the next task is to choose the level which distinguishes the poor from the non-poor (the poverty line). Various approaches have been suggested, from the value of a basket of "necessary" goods to the level at which caloric intake is considered "sufficient." However, all of these measures involve some subjective decisions. A simpler, and perhaps no more arbitrary, approach is to choose a percentile level. For the purpose of this paper, we define the "poor" as the bottom 40% of our sample in terms of expenditure per capita, and the "hard-core poor" as the bottom 20%. Because of sample size limitations, the tables in this report rely only on the distinction between poor and non-poor households, although the text makes occasional reference to the characteristics of the hard-core poor. While we are, therefore,

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41 A more accurate adjustment for household composition would take into account the ages and gender of household members. However, the construction of adult equivalent scales is a complex task beyond the scope of this paper. Both per capita and per adult equivalent indicators ignore intra-household distribution by assuming that the welfare of all members of the household is proportional to the "average" welfare in the household.

using a relative poverty line, our focus is on the lower end of the distribution of income and, in this sense, on the absolute poor.

D. Indices of Poverty

10. In the previous section, we defined poverty in terms of total real expenditure per capita. However, we still need indices of the extent and depth of poverty. Foster, Greer, and Thorbecke (1984) suggest a class of indices which take the following form:

$$P_\alpha = \frac{1}{N} \sum_{i=1}^{n} \left(\frac{(z-y_i)}{z} \right)^\alpha$$

where N is the total number of households, n is the number of poor households, z is the poverty line in terms of per capita expenditure, y_i is the expenditure per capita of the i^{th} poor household, and α is a parameter which can be any positive number.

11. One advantage of these indices is that they are decomposable by region or socioeconomic group. In other words, the population-weighted average of the indices of various groups of households is equal to the poverty index of all the groups together. For example, the population-weighted average of male- and female-headed households is the poverty index of all households. These indices can be used to calculate the proportion of poverty which is attributable to each group.

12. Another advantage is that the index can reflect any desired weight on the depth of poverty by adjusting the parameter α. As α is increased, P_α puts greater weight on the depth of poverty. When $\alpha=0$, the index (P_0) is the proportion of the households which are below the poverty line. This "head count" measure does not incorporate the depth of poverty. When $\alpha=1$, the index (P_1) may be interpreted difference between the average income of poor and the poverty line expressed as a proportion of the poverty line. Thus, P_1 incorporates information about "how far" the poor are, on average, from the poverty line. However, P_1 is insensitive to redistribution among poor households which preserves mean expenditure among them. P_2, on the other hand, is sensitive to such a redistribution, since it puts a greater weight on the depth of poverty. Although α may take values above 2, in this paper we present calculations for just the first three indices: P_0, P_1, and P_2. P_0 is commonly known as the Poverty Head Count, P_1 is commonly known as the Poverty Gap Index and P_2 is commonly known as the poverty severity index.

E. Regional Distribution of Poverty in Rwanda

13. This section describes the extent of poverty in Rwanda and its distribution among various regions of the country. Table A-1 provides an overview of the distribution of Rwandan households according to the level of expenditure per capita. The mean value is 18,670 FRw per person per year, or approximately US $ 184 per capita at the official exchange rate at the time of the survey. The poorest 40% of the households have per capita expenditure levels below 13,810 FRw, while the poorest 20% fall below 11,142 FRw per capita. These two figures are, thus, the upper limits of expenditure for households defined as "poor" and "hard-core poor," respectively.

14. Table A-2 presents the distribution in a slightly different way. It shows the percentage of Rwandan households that have per capita expenditure levels below various multiples of the mean. For example, 3% of the households fall below 40% of the mean expenditure level, while less than one quarter (23%) have expenditure levels above 120% of the mean level. These figures indicate that household expenditure is relatively evenly distributed in Rwanda. For example, a similar study of Ghana showed that 13% of the households in that country fall below 40% of the mean expenditure level in that country and that 27% of the households are above 120% of the mean level (Boateng, et al., 1990).

15. The poverty indices discussed in the previous section are shown in Table A-3, disaggregated into rural and urban areas. The most notable aspect of the table is the gap between urban and rural expenditure levels. The urban areas enjoy expenditure levels averaging 42,285 FRw/person/year, approximately 2.4 times the rural mean of 17,396 FRw/person/year. It is worth recalling that these figures have already been adjusted for differences in the cost of living between rural and urban areas (see Annex A) and that the value of home production is included. The P_0 column indicates the incidence of poverty, that is, the percentage of households below the poverty line (13,810 FRw/person/year). By this definition, only 11% of the urban households are poor, whereas 41% of the rural households are so classified. By construction, 40% of all Rwandan households are considered poor.

16. The P_1 and P_2 columns in Table A-3 confirm that poverty is greater in the rural areas than in urban areas, even when the depth of poverty is incorporated into the index. As described in the previous section, we can multiply the national figure for P_1 (0.09) by the poverty line (13,810 FRw) to estimate the cost of a perfectly targeted redistribution scheme to eliminate poverty. This amounts to 1,243 FRw per person per year (about 7% of mean household expenditure), or about $ 30 million per year at the prevailing exchange rate at the time of the survey. Inflating this figure to 1991 prices and applying the post-devaluation exchange rate brings the current cost of just raising the poor out of poverty to a much higher figure. Any realistic program would be even more costly owing to imperfect targeting and incentive effects.

17. Although the incidence of poverty is much greater in the rural areas than urban areas, the poverty gap in the two areas is similar. Dividing P_1 by P_0, the proportionate

gap between the average expenditure of the poor and the poverty line is 22% in the rural areas and 27% in the urban areas. In other words, although the poor are less common in the cities than in the countryside, they are no better off than their rural counterparts.

18. The last three columns in Table A-3 show the proportion of poverty, as defined by each of the three indicators, in the urban and rural areas. According to all three indicators, the rural areas represent more than 98% of all poverty in Rwanda.

19. Hard-core poverty, as defined earlier, affects 21% of the rural households, but only 6% of the urban ones. The cost of a hypothetical perfectly targeted program to eliminate hard-core poverty would have been 445 FRw per person per year at the time of the survey. The rural areas represent 97-98% of the hard-core poverty, depending on which poverty index is used.

20. The figures are further disaggregated by region in Table A-4. The rural area is divided into five geographic zones, while the urban area is divided into the city of Kigali and other urban areas. These numbers should be interpreted with caution due to the small sample size.[42] Mean expenditure is roughly similar across the rural zones, with the Northwest and East being somewhat better off and the South Central and Southwest being somewhat poorer. The residents of the capital, Kigali, enjoy a mean expenditure level of 46,901 FRw/person/yr, 2.7 times greater than the rural average. Urban areas outside Kigali hold an intermediate position, with mean expenditure about half way between Kigali and the rural areas. Thus, while we concluded, earlier on, that the distribution of income across quintiles (or other income groups) is relatively even in Rwanda, we find considerable inequality in the distribution of income across regions.

21. The incidence of poverty (P_1) is the highest in the South Central zone (58%) and the lowest in Kigali (6%). These patterns are repeated when we consider P_1 and P_2, which incorporate the depth of poverty. The contribution to total poverty is also greatest for the South Center, which accounts for 30-38% of national poverty, depending on which indicator is used. By contrast, poverty in Kigali accounts for less than 1% of the total.

22. It is worth noting that the most densely populated areas of Rwanda are in the South Central and Northwest zones. However, the Northwest zone enjoys more plentiful rainfall and richer volcanic soils than the South Central zone. Thus, it is not surprising that, according to the ENBC results, the South Central zone suffers the highest incidence of poverty. These factors may also help explain the fact that the localized famines in 1989 were concentrated in the South Central and Southwest zones. The South Central zone should clearly receive particular attention in public expenditure reform aimed at reducing poverty.

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42 Each rural geographic zone is represented by an average of 54 households. The urban sample includes 201 households in Kigali and 96 in the other urban areas.

F. Productive Assets: Family Composition and Land Holdings

23. Labor and land are the two most important assets of the poor. The quantity and quality of labor available to the household is determined by the family size, the age/sex composition of the household, and the level of schooling of adult family members. Aspects of the age/sex composition include the dependency ratio (the ratio of dependents to working adults) and the gender of the head of household.

24. The average household size is 4.9 in the rural areas and 5.6 in the urban areas. Among poor households (urban and rural combined), the average family size is 5.5, while non-poor households have, on average, 4.6 persons. The mean dependency ratio (number of persons under 15 divided by the number of persons over 15) is 1.14 for poor households and .87 for the non-poor. Table A-5 shows that over half (54%) of the households in Rwanda have five or more members. The Table A-also confirms that (as expected on the basis of the average family size figures) poverty is more common among large households than among small ones. This is reflected in the levels of mean per capita expenditure for each category, as well as in the poverty indices. For example, P_0 indicates that 40% of the households with four members are below the poverty line, whereas 55% of those with six or more members fall below this level. According to these data population control would not only be beneficial at the societal level, but would also make sense from the point of view of household welfare.[43]

25. We can also disaggregate poverty according to the sex of the head of household. Table A-6 shows that slightly over 20% of the households in Rwanda are headed by women. The mean level of expenditure per capita among these households is virtually the same as that among male-headed households, the difference being less than 2%. The incidence of poverty (P_0) is greater among female-headed households, but the difference is very small (0.41 compared to 0.39). Likewise, the other poverty indices (P_1 and P_2) indicate levels of poverty among female-headed households which are only somewhat greater than the levels among male-headed households.

26. It is interesting to note that the disparities between male- and female-headed households are somewhat greater for the indices which place more weight on the depth of poverty. Nonetheless, even using P_2, the difference is not marked: female-headed households account for 20% of the households and 26% of the poverty. The results for the indices of hard-core poverty (not shown) reflect these same general trends.

27. On the other hand, Table A-6 hides an important distinction between rural and urban trends. In the rural areas, standards of living do not vary much with the sex of the head of household, as found in the national figures. In the urban areas, by contrast, female-headed households are significantly poorer than their male-headed counterparts.

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43 This result must be qualified because per capita expenditure overstates the welfare of small families and understates that of large families. This is true because large families tend to have larger propor ion of children, for whom expenditure requirements are smaller. Nonetheless, it is worth noting that caloric intake per adult equivalent and expenditure per adult equivalent are also inversely related to the size of the household.

Households headed by a female in the cities have a mean level of expenditure 35% lower than those headed by a male, and the incidence of poverty (P_0) among them is 20% compared to 9% among male-headed households. However, even female-headed households in the cities are significantly better off by all standards than rural households, whether they are male or female headed.

28. Turning to land, it is of interest to note some characteristics of rural households by farm size. In particular, Table A-7 points to a clear inverse relationship between farm size and the net value of agricultural production per hectare. This finding, which is well established in the farm management literature, indicates that smaller farms have larger per-hectare productivity (for a discussion of this see also Annex D). The table also indicates that, as one would expect, the importance of non-farm activities (or part-time farming) grows as farm size declines.

29. Tables A-8 and A-9 provide indices of rural poverty by farm size and farm size per person, respectively. The association between poverty and farm size per person is negative, as expected. Therefore, even though farm productivity rises with declining farm size, the productivity increments are not sufficient to compensate for the decline in arable land per person. It should be noted, however, that poor people are encountered in all the farm size classes accounted for in Table A-9. There is little difference in the poverty gap (for α equal to 1 and 2) between the lower four farm size classes. The lack of arable land is endemic in Rwanda and is an important factor in the etiology of poverty.

G. Income Patterns

30. For present purposes, income refers to the value added attributable to household labor and land. It is calculated as the value of goods and services produced (whether sold, bartered away, given away, or consumed in the household) minus the costs of production.[44]

31. Table A-10 presents the structure of income for poor and non-poor households in Rwanda. According to the survey data, 54% of the household income is derived from agriculture, while artisanal activities account for 24% of the total. Over half the value of artisanal activities is accounted for by traditional beer brewing. The income from beer brewing is calculated in such a way as to include the value of self-provided raw materials, principally bananas and sorghum. If this component were counted as agricultural production, the role of this sector (agriculture) would loom larger than is shown in Table A-10.

32. The sources of income vary significantly between poor and non-poor households. Agricultural production and agricultural wages account for over 70% of the income of poor households, but only 52% of that of non-poor households. In contrast, other employment income and commerce represent 18% of the income of non-poor households,

[44] This includes the value of food produced for the consumption of the same household. The data collected by the ENBC do not allow calculation of the value of non-food home production.

almost three times the corresponding level among poor households (Table A-10). Table A-11 shows a different side of the same pattern: poor households account for almost 47% of agricultural wages earned and 32% of the value of agricultural production, but only 4% of the income earned from non-agricultural wages and only one-fifth of the total income earned from trading activities. Contrary to what might have been expected, the poor are not more likely to work as agricultural laborers than the non-poor in the range of this sample (this is intuitively understandable because of the small average farm size in this society).

33. Several conclusions can be drawn from these two tables. First, policies which strengthen agriculture have the best chance of alleviating poverty in Rwanda (focusing on incomes only for the moment and are ignoring the basic needs dimension). This is true for policies that stimulate agriculture in general. It is also particularly true of policies which augment the demand for labor in the agricultural sector, because the income share which the poor derive from agricultural labor exceeds that derived from own-production. However, a sizeable portion of new agricultural employment is likely to be absorbed by the non-poor (Table A-11). Therefore, if the poor are to be absorbed disproportionately by newly created employment in agriculture, it is necessary to target the employment. One targeting criterion is region, as discussed earlier. Other (self-) targeting effects might operate through the kind of task to be performed and, in public employment schemes, the payment of a wage low enough that better-off workers would not report to work. Strenuous physical work, particularly when exposed to the sun, can be given as an example of self-targeting employment. However, this is only applicable to the able-bodied and strong. Other targeting criteria may be needed to provide public employment to the full range of persons willing to work, but unable to find employment in the open labor market.

34. Second, although urban wage rates are often used as an indicator of the welfare of the poor, in the context of Rwanda virtually all such wages are earned by non-poor households (Table A-11). In other words, there is practically no direct connection between urban (non-agricultural) wage rates and the welfare of the poor. Third, although the standard of living of the poor in Rwanda is quite low, there is little evidence of distress sales of assets among the poor, at least during the year of the survey (Table A-11)

35. Another way to look at income patterns is to calculate the indices of poverty by the principal occupation of the household, defined as the activity which generates at least 50% of net income. Net income is the value of goods and services produced by the household, whether sold, consumed, given away, or bartered away, minus the value of business expenses. The activities are defined as follows:

- Farmer: At least 50% of net income derived from self-employment in crop and livestock production.

- Artisan: At least 50% of net income derived from self-employment in manufacturing and services other than commerce.

- Trader: At least 50% of net income derived from self-employment in commerce, that is buying and reselling goods without transforming them.

- Employee: At least 50% of net income derived from wages earned for labor services.

- Diverse: None of the above activities accounts for the majority of net income.

36. Although virtually all Rwandan households have some agricultural production, Table A-12 shows that somewhat less than three quarters of them depend on agriculture for a majority of their income. About 10% of Rwandan households derive most of their income from artisanal activities. This includes a large number of brewers, as well as masons, tailors, wood and metal workers, and so on. Just 4% of the households obtain most of their income from trading, while 6% depend primarily on wage employment. For the remainder, no single activity accounts for the majority of net income.

37. The mean level of expenditure varies by occupation. Farmers have the lowest level of expenditure (16,523 FRw/person/year), followed by those with "diverse" sources of income. At the other extreme, salaried employees have the highest mean expenditure level, about twice that of farmers. It is worth noting that mean expenditure varies less among occupation than it does between rural and urban areas. This implies that within the same occupation, urban expenditure levels are higher than rural ones.

38. The incidence of poverty, P_0, is the highest among farmers (45%) and traders (42%). This appears to contradict the observation that traders are among the wealthiest individuals in the economy. The solution to this apparent contradiction lies in the fact that the category includes both large-scale wholesalers and importers and very small-scale retailers. Although the former are highly visible, the latter are more numerous. When the depth of poverty is incorporated into our indicator (P_1 and P_2), it is households with diversified activities that exhibit the most poverty. Farmers represent the bulk of poverty nationwide, since farming is the most common "principal occupation" and the incidence of poverty within the occupation is relatively high. Depending on which indicator is used, farmers account for 82-83% of the poverty.

39. Given the importance of agriculture in Rwanda, it is worth examining more closely the structure of agricultural production, as is done in tables A-13 to A-20. These tables refer only to the rural sector: although there is some agricultural activity in the urban sector, it plays a negligeable role in Rwandan agriculture overall.

40. Tables 13 and 14 show the composition of agricultural income by poverty group. The most noTable A-result is the predominance of food produced for own-consumption, which represents 75% of the gross value of agricultural production for the sample average (calculated on the basis of Table A-13). Among the remaining categories, it is interesting to note that food crop sales are significantly larger than cash crop sales. And finally, this

table illustrates the relatively minor role of purchased agricultural inputs in Rwandan agriculture. Purchased inputs represent only about 8% of the gross value of agricultural production.

41. These patterns do not vary greatly between poor and non-poor households. For example, the value of home produced food is somewhat higher among poor households (80% of agricultural [as opposed to total] income) than among non-poor households (73%), but it is not drastically higher. Self-provisioning is the mainstay of the Rwandan rural economy. The value of purchased inputs among poor households represents a slightly lower proportion of the gross value of agricultural production (6%) than it does among non-poor households (9%).

42. Table A-15, on the composition of agricultural production, does not point to marked differences in cropping patterns between the poor and the non-poor. Cassava and sweet potatoes are slightly more important in the cropping patterns of the poor; white potatoes and livestock are somewhat more predominant for non-poor farmers. The relative income contribution of sorghum and beans is similar among the two groups under study. The contribution of cash crops, including coffee, to the value of agricultural production is only slightly less important for the poor than it is for the non-poor. But cash crops taken together contribute only 7% of the value of agricultural production. This illustrates both the scope and the difficulty (linked to the land and productivity constraint) of promoting cash cropping in Rwanda. (For an analysis of the share of total production of various commodities produced by the poor and the non-poor, the reader is referred to Table A-16.)

43. Tables A-17 and A-18 are similar to the previous two tables, except that they refer to the value of agricultural sales rather than the full value of agricultural production. According to the figures presented in Table A-17, the most important individual cash crop is coffee. At the same time, it should be noted that the value of all food crop sales is greater than that of export crop sales for both poor and non-poor farmer families.

44. Table A-18 shows the percentage of agricultural revenue for each crop which accrues to poor and non-poor households. In the case of cassava and sweet potatoes, the poor represent over 40% of the total value of sales, implying that the sales revenue per household is greater in absolute terms than it is among non-poor households. In the case of sorghum and beans, the poor's share in sales is approximately equivalent to its share in overall agricultural production. In contrast, the poor account for a smaller share of white potatoes, export crops, and animals.

45. Although agricultural inputs currently play a relatively minor role in Rwanda, it is worth briefly considering the composition of these expenses. Table A-19 shows that about half the value of agricultural inputs takes the form of hired labor. The percentage is lower among poor households (32%) than among non-poor households (53%). Rented land, planting materials, and hoes account for most of the remainder, other inputs such as fertilizer representing just 5% of the total. The poor represent a disproportionate share of

the demand for planting materials and hoes. Overall, they account for less than a quarter of the purchases of agricultural inputs in the rural sector (Table A-20).

H. Expenditure Patterns

46. Earlier in this report, we considered the levels of total real expenditure per capita in poor and non-poor households. In this section, we decompose expenditure to determine the differences in spending patterns between poor and non-poor households. Such information is useful in evaluating the impact of alternative policies on the poor. This section begins by disaggregating expenditure into five broad groups: home production of food, food purchases, non-food purchases, transfers, and barter. Later, food and non-food expenditures are further disaggregated.

47. Table A-21 shows that home produced food and purchased food represent 70% of expenditure in Rwanda (sample average), non-food purchases account for 22%, and the remainder is primarily in the form of transfers received. Barter, defined as the simultaneous exchange of goods and/or services, is quite rare, accounting for less than 1% of total expenditure. Home production of food is the most important single source of consumption goods, accounting for almost half of total expenditure and 70% of food consumption.

48. The picture changes somewhat when we distinguish between poor and non-poor households. Home production of food is fully 60% of the expenditure of the poor, while the corresponding figure among the non-poor is only 44%. In contrast, non-food purchases are significantly less important in the budget of poor households (12%) than they are in those of non-poor households (26%). Interestingly, the relative importance of cash expenditure on food does not vary much between the two type of households. The importance of transfers and barter are also quite similar between the two groups.

49. Table A-22 provides the same numbers expressed in row percentages. The bottom line indicates that the poor, representing 40% of the households, account for slightly more than a quarter (27%) of total expenditure. These households generate one third of all home production of food, but only 15% of all non-food purchases. Such figures are useful in evaluating the efficiency of subsidy schemes, where efficiency is defined as the proportion of the subsidy benefits which is perceived by the poor. For example, a subsidy on all purchased food would be relatively inefficient in that only a quarter of the benefits would be perceived by the poor, with non-poor households receiving the remaining three quarters of the benefits.

50. Table A-23 provides the data needed to examine in more detail the composition of food expenditure. Beans, sweet potatoes, banana beer, and cassava together constitute over half of the value of food consumption (sample average). It is worth noting the

relatively minor role of animal products in the Rwandan dietary: meat, fish, eggs, and milk account for just 9% of the value of food consumption.

51. The pattern varies somewhat when we separate poor and non-poor households. Beans, sweet potatoes, and cassava are more important in the food budget of the poor than in that of other households, as one would expect. This is particularly true of sweet potatoes, for which the food budget share is twice as high among the poor as among the non-poor (18% compared to 9%). Thus Bennet's law, which states that the starchy staple ratio in people's diets declines as incomes increases, is borne out in the data under examination as it is in other countries. On the other hand, the non-poor households allocate a larger share of their food budget to rice, white potatoes, animal products, and factory beer. For example, animal products represent only 4.6% of the value of food consumption among poor households but 10.9% among the non-poor.

52. Table A-24 presents the same data in terms of row percentages, that is, the percentage of total expenditure on each food category which is incurred by poor and non-poor households. Thus, the table indicates the portion of benefits perceived by the poor from reducing the cost of a given food product to all consumers, including both those that purchase the good and those that produce it for their own consumption. One type of policy which has this effect is agricultural research which lowers the cost of production.[45] Thus, the poor would receive the highest proportion of the benefits of cost-reducing research on sweet potatoes (46.5%). In fact, sweet potato research would have a more progressive impact than any commodity-based food subsidy. Similarly, over 35% of the benefits of agricultural research on cassava, sorghum, and beans would accrue to the poor. By contrast, less than 10% of the benefits of reducing the cost of factory beer and milk and eggs would be perceived by the poor. Plantains, rice, white potatoes, and other animal products fall in between these two extremes, with the poor accounting for 20-30% of total expenditure on each item.

53. Table A-25 decomposes the first line of Table A-21 to show the relative importance of each food product in the cash food budget. Banana beer and beans are the most important food items on which people spend money (sample average). These items account for 19% and 15% of the total food budget, respectively. In interpreting the first figure, it is important to recall that almost all rural households both buy and sell banana beer (78% sell it, while 80% buy it according to the ENBC). With respect to beans, both the ENBC and the Agricultural Survey show greater volumes of bean purchases than bean sales, implying the existence of informal bean imports (see Ministère du Plan, 1988 and Loveridge, 1991). Comparing poor and non-poor households, beans, cassava, sweet potatoes, and sorghum beer appear to be more important among poor households, while rice, white potatoes, animal products, and factory beer play a larger role in the food budgets of the non-poor.

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45 This assumes that cost savings are passed on to consumers. Given the high degree of competition in agricultural markets, this is a safe assumption for the long-run impact of research.

54. Table A-26 shows the row percentages of cash food expenditure. This table illustrates the distribution of benefits of a policy which affects the consumer price of marketed food products, such as selective food subsidies.[46] The most notable aspect of this Table is that there are no inferior foods. The fact that the poor account for 40% of the households but less than 40% of the spending on any given food product means that absolute food spending rises with income for all goods. The policy implication is that there are no foods for which a subsidy would be progressive; that is, there are no commodities for which a subsidy would yield larger absolute benefits to the poor than to the non-poor. Food subsidies could, at best, be neutral. For example, in the case of subsidies on beans, cassava, sweet potatoes, and sorghum beer, the bottom 40% of Rwandan households would receive 37-40% of the benefits. For other goods, the poor would receive a smaller share of the benefits. (Food policy decision-makers should note that this analysis implies that there is no obvious self-targeting food in Rwanda which could be used as a carrier for an efficient subsidy.)

55. In Table A-27, the importance of self-provisioning is analyzed for individual commodities. Most of the starchy staples are overwhelmingly supplied by subsistence production. For example, home production accounts for over 80% of the total consumption of cassava, sweet potatoes, and bananas. The proportions are only slightly lower for beans, maize, and white potatoes. By contrast, purchases play a larger role in the consumption of sorghum, rice, beef, beer, cooking oil, and salt. Somewhat surprisingly, there appears to be very little difference between poor and non-poor households with regard to the proportion of food coming from own-production.

56. We turn now to cash expenditure on non-food items. Table A-28 shows the disaggregated pattern of expenditure on non-food items. Clothing (the first six categories) represents 23% of non-food cash expenditure, one third of which is in the form of used clothing. [47] School uniforms, currently an issue in policy discussions in Rwanda, absorb less than one percent of the average family's non-food budget. Housing costs (including construction, improvement, and repair) account for 35% of the total, wood products being the most important component. Household effects represent slightly less than 10% of non-food spending, transport 9%, and fuel and utilities about 7%. The remainder of the non-food budget (17%) is allocated to health, education, hygiene, tobacco, leisure, and services.

57. Naturally, this pattern varies between poor and non-poor households. The poor spend a larger share of their non-food budget on used clothing, wood products, health care, soap, and tobacco. These items make up over half (52%) of the non-food budget for the poor, but less than a quarter of it for the non-poor. On the other hand, the non-poor allocate a larger portion of their non-food spending to construction services, transportation, and leisure and services. These categories account for 29% of the non-food budget of the non-poor, but only 8% of that of poor households.

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46 Note that the impact of food price controls (instead of consumer subsidies) would be more complex, in that it would also influence growers of these commodities.

47 Almost all the used clothing is imported commercially from Europe and the United States.

58. Table A -29 presents the same information in terms of row percentages, indicating the relative importance of poor households in the total expenditure on each item. Overall, the poor represent less than 15% of the non-food cash expenditure. Looking at the individual items, the most striking result is that the poor account for 40% of the spending on health services. Since, by construction, the poor represent 40% of the households, this means that they spend as much, in absolute terms, on health services as the non-poor. Given the budgetary constraints of the poor, this is a surprising result. The poor also account for a relatively large percentage (over 28%) of expenditure on used clothing, school uniforms, tobacco leaves, and kerosene. By contrast, the poor represent a small proportion (less than 5%) on construction services, transportation other than "taxis," and leisure and services.

59. These results have various policy implications. First, they suggest that to the extent that devaluation raises the price of imported goods, the main non-food impact on poor consumers will be in the form of higher prices for used clothing. Reduced tariff rates and improvements in marketing efficiency in the used clothing sector would serve to cushion the impact of devaluation on the poor (improvements in these areas could, in theory, more than compensate losses resulting from devaluation). Devaluation would also raise the price of kerosene and drugs, a relatively large share of which are purchased by the poor. However, the impact of price increases would be less severe than higher prices for used clothing because kerosene and drugs represent a much smaller share of the budget of the poor.

60. Second, changes in the cost of health-care services have a significant impact on the poor. The poor receive about 40% of the benefits of subsidizing the cost of health care services. This means that health subsidies are almost as efficient in improving the well-being of the poor as reducing the cost of sweet potatoes (discussed above). At the same time, it should be recognized that in the rural areas, part of this expenditure is on traditional healers. The ENBC indicates that over half of the health service spending in rural areas is on traditional healers, although modern services are used with greater frequency (Ministère du Plan, 1988: 35). This raises an interesting question of user charges and the quality of health care provided by the public sector relative to that of the private sector (i.e. the healers). The question is: To what extent is there a trade-off between people's willingness to pay for health consultations and the quality of the care. It may be that the real issue at hand is not to lower the cost of public care, but to raise its quality and cost-effectiveness (this would lower the cost to the government per unit of care), thereby creating a more efficient supply mix (healer and public care) from which the population could choose.

61. Third, and still on health, the ENBC expenditure data just described, lead to the conclusion that subsidizing the cost of drugs is a less efficient way to help the poor than subsidizing the cost of health care services.

62. Fourth, these results help identify non-food items which could be taxed with little impact on the poor. "Other clothing" (principally accessories), construction services, fuels other than kerosene, and leisure and personal services are all consumed disproportionately by the non-poor. Thus, taxes on these items would be progressive in the sense of reducing after-tax income inequality. A tax on banana beer (i.e. the part of production which passes through taxable marketing channels) would be more or less neutral in terms of the distribution of the burden between the poor and the non-poor.

I. Conclusion

63. The above analysis has shown that there is considerable regional and socioeconomic or between-group variation in the incidence of poverty in Rwanda. The policy implications of the identified characteristics of poverty have been explored to the extent that this was feasible on the basis of the descriptive analytical apparatus which was employed. No attempt is made here to repeat these conclusions. However, a comment is in order with respect to employment and labor productivity. The analysis has shown that one of the most critical poverty alleviation issues in Rwanda relates to labor productivity in agricultural and non-agricultural occupations. The income share which the poor derive from agricultural and non-agricultural off-farm labor exceeds that derived from their own subsistence production. What can be done to increase the demand for, and productivity of, rural labor?

64. The two fundamental policy areas which come to mind in the context of this question are (i) agricultural intensification to overcome yield barriers and (ii) measures to raise effective demand to enlarge the market for farm produce and, in time, to promote growth linkages between sectors.[48] These policy areas are interlinked. Agriculture is the main source of employment and income in Rwanda. This is true even though current and projected person-land ratios call for an acceleration of the rate of growth of off-farm employment relative to the rate of growth of on-farm employment. Therefore, and given the demographic pressures on the land, technological change (i.e. modern inputs and higher-yielding varieties) and land improvement ("terraces radicales," afforestation, soil quality improvement, etc.) are needed to raise current and future productivity of land and labor. Hence:

- Agricultural research and extension must be stepped up (Rwanda does not have a strong record in agricultural research, with the possible exception of potatoes).

- Cash incomes need to rise to (i) enable people to buy yield-enhancing inputs, (ii) enable people to supplement subsistence-produced food with purchased food, and (iii) to elicit and absorb the agricultural surplus (together with export demand) which can be generated by means of technological change.

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48 Other important policy areas include the improvement of human resources, population control, and the conservation and enhancement of natural resources. Time and data constraints preclude a thorough analysis of these issues in the context of this report.

65. These are complex areas of policy and analysis. A fresh look is currently being taken at these issues in Rwanda in the context of the structural adjustment program and the reform of governmental spending and investment. While the promotion of agricultural research and extension is a long-run measure, public works programs can lend considerable short-run support to the second objective identified above. The Food Security and Social Action Project which was mentioned in the Introduction to this report will contain a massive program of public works and employment. Other projects and programs pursue the same objective. It is to be hoped that these and other endeavours will be productively integrated into a new, longer-run strategy of development-cum-poverty alleviation for the benefit of the poor as identified in this report, i.e. the families in the lower 40% of the distribution of income and expenditures in Rwanda.

ATTACHMENT A: CALCULATION OF PRICE INDICES

The monetary values in this report have been deflated using a Tournquist (or Stone's) price index based on 36 products (see Table A-1). These products, including 26 food products and 10 non-food items, account for 80% of the average rural budget and 53% of the average urban budget. The prices for each good were obtained from consumer purchases recorded in the two budget questionnaires. Average prices were calculated for each of the five rural zones and each of the four urban areas. These prices were then expressed as a proportion of the prices for the same products in the city of Kigali, the base region. National average budget shares were used as weights to combine product-zone-level price indices into a single zone-level price index. The Tournquist (or Stone's) Index uses a weighted geometric average of the following form:

$$\ln(P_i) = \sum_{j=1}^{n} s_j \ln(Pij)$$

or

$$P_i = \prod_{i=1}^{n} (P_{ij})^{sj}$$

where P_i is the price index in zone i where the Kigali index is 100, s_j is the national average budget share for product j, and P_{ij} is the ratio of the price of good j in zone i relative to the price of good j in Kigali.

Products and weights used in the price index

Product	Weight	Product	Weight
Sorghum	.01305	Banana wine	.11299
Rice	.00560	Sorghum beer	.03634
Bread	.00369	Factory beer	.01467
Cassava	.04850	Soft drink	.00598
Cassava flour	.01156	Palm oil	.01178
Sweet potatoes	.10907	Salt	.00976
White potatoes	.05032	Sugar	.00460
Plantains	.06478	Prepared meal	.00632
Dry beans	.20663	Soap	.02469
Dry peas	.01399	Kerosene	.01544
Dried peanuts	.00864	Batteries	.02569
Plantains	.00229	Clinic visit	.01101
Eggplant	.00546	Medication	.01368
Cabbage	.00064	Used shirt	.03478
Fresh tomatoes	.00157	Used blouse	.03440
Beef	.01765	Cloth	.02492
Goat meat	.01545	Cigarette	.01368
Indagala fish	.01016	Tobacco leaf	.01024

Source: Bank Staff Estimates from raw data from the Enquête Nationale sur le budget et la consommation

The resulting price indices are shown in the next table. In general, food prices are highest in Kigali and lowest in the rural areas. In contrast, non-food prices tend to be higher in the rural areas than in the cities. These differences reflect transportation costs, since most food is produced in the rural areas, while most non-food items are produced in (or imported through) the cities. The relatively low cost of non-food items in the North Center zone may be explained by its proximity to Uganda, through which most imports pass on their way to Rwanda.

The overall price index varies from 84 to 101 in the cities and from 62 to 75 in the rural areas. In general, the cost of living appears to be at least 50% greater in the cities than in the country. This is because food, which represents the bulk of the average budget, is more expensive in the urban areas.

Price indices for each zone and city

Zone or city	Food index	Non-food index	Overall price index
Cities			
Kigali	100.00	100.00	100.00
Butare	93.55	126.30	99.44
Gisenyi	103.85	89.93	100.96
Ruhengeri	83.24	85.86	83.76
Rural zones			
Northwest	53.37	115.57	62.77
Southwest	59.44	111.88	67.83
North Center	56.18	91.75	62.29
South Center	68.60	106.88	75.22
East	62.17	109.29	69.86

Source: Bank Staff Estimates from raw data from the Enquête Nationale sur le budget et la consommation.

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Table A-1. Range and mean of expenditure quintilles (FRw/person/year)

Quintile	Minimum	Maximum	Mean
1	-	17,848	9,405
2	8,545	27,850	12,413
3	11,239	24,233	15,550
4	14,150	34,455	20,167
5	8,214	-	35,720
TOTAL			18,670

Source. Bank Staff Estimates from raw data from the Enquête Nationale sur le Budget et la Consommation.

Table A-2. Percentage of households below multiples of mean expenditure per capita

Multiples of Mean	Pct. of households
.4	3.4
.6	21.1
.8	48.7
1.0	66.2
1.2	76.9
1.4	83.5

Source: Bank Staff Estimates from raw data from the Enquête Nationale sur le Budget et la Consommation.

Table A-3. Indices of Poverty in Rural and Urban Areas

	Pop share(%)	Mean expenditure F/yr/pers)	P0	P1	P2	Share P0	Share P1	Share P2
Rural	94.9	17,396	.41	.09	.03	98.6	98.4	98.0
Urban	5.1	42,285	.11	.03	.01	1.4	1.6	2.0
Total	100.0	18,670	.40	.09	.03	100.0	100.0	100.0

Source Bank Staff Estimates from raw data from the Enquête Nationale sur le Budget et la Consommation

Table A-4. Indices of Poverty in Region

	Pop. share(%)	Mean expenditure F/yr/pers)	PO	P1	P2	Share PO	Share P1	Share P2
Rural								
Northwest	14.0	19,801	.34	.07	.02	11.8	11.4	11.2
Southwest	15.3	15,956	.38	.08	.02	14.5	13.4	12.9
North Central	21.5	17,380	.45	.09	.03	24.2	21.1	20.0
South Central	20.3	14,622	.58	.16	.05	29.9	35.5	37.5
East	23.8	19,292	.30	.06	.02	18.2	17.0	16.4
Urban								
Kigali	3.7	46,901	.06	.02	.01	.5	.7	.9
Other urban	1.5	30,624	.23	.06	.02	.8	1.0	1.1
TOTAL	100.0	18,670	.40	.09	.03	100.0	100.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête Nationale sur le Budget et la Consommation.

Table A-5. Indices of Poverty by Household Size

	Pop. share(%)	Mean expenditure F/yr/pers)	PO	P1	P2	Share PO	Share P1	Share P2
Up to three	26.8	23,628	.21	.05	.01	14.3	13.5	12.2
Four	18.7	18,625	.40	.08	.02	19.0	16.8	14.6
Five	14.5	`17,115	.45	.11	.04	16.5	17.3	20.0
Six	17.4	15,722	.44	.11	.04	19.4	20.6	22.6
Over six	22.4	16,075	.55	.13	.04	30.9	31.8	30.6
TOTAL	100.0	18,670	.40	.09	.03	100.0	100.0	100.00

Source: Bank Staff Estimates from raw data from the Enquête Nationale sur le Budget et la Consommation.

Table A-6. Indices of Poverty by Sex of Head of Household

	Pop. share(%)	Mean expenditure F/yr/pers)	PO	P1	P2	Share PO	Share P1	Share P2
Female	20.4	18,437	.41	.11	.04	21.1	24.8	25.7
Male	79.6	18,729	.39	.09	.03	78.9	75.2	74.3
Total	100.0	18,670	.40	.09	.03	100.0	100.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête Nationale sur le Budget et la Consommation.

Table A-7: Characteristics of Rural Households by Farm Size

Farm size (hectares)	Size of household (persons)	Net Value of ag. production per hectare (FRw/hect./yr)	Importance of non-farm activities (% of income)
Under 0.38	3.6	104.731	35.50%
0.38 - 0.65	4.6	56.631	19.60%
0.66 - 1.07	4.8	39.634	22.70%
1.08 - 1.90	5.6	26.584	17.60%
Over 1.90	6.2	17.126	9.60%

Note: Non-farm activities include wage labor, commerce, services, and artisanal activities other than beer brewing

Table A-8: Indices of Poverty in Rural Areas by Farm Size

	Pop. share(%)	Mean expenditure F/yr/pers)	P0	P1	P2	Share P0	Share P1	Share P2
Under 0.37	19.8	18,302	.34	.08	.03	16.6	16.3	17.7
0.38 - 0.65	20.1	16.639	.56	.13	.04	27.5	28.0	27.4
0.66 - 1.07	20.0	15,981	.49	.11	.04	24.1	24.0	24.0
1.08 - 1.90	20.0	18,720	.27	.07	.02	13.3	14.6	15.9
Over 1.90	20.1	17,832	.37	.08	.02	18.6	17.2	15.0
TOTAL	100.0	17,495	.41	.09	.03	100.0	100.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-9. Indices of Poverty in Rural Areas by Farm Size per Person

	Pop. share(%)	Mean expenditure F/yr/pers)	P0	P1	P2	Share P0	Share P1	Share P2
Under 0.08	16.9	15,710	.56	.13	.04	23.3	24.3	25.2
0.08 - 0.13	17.2	15,826	.46	.09	.03	19.7	16.9	15.7
0.13 - 0.21	20.6	16,887	.46	.11	.04	23.2	23.7	25.3
0.21 - 0.38	23.5	17,342	.38	.10	.03	21.9	24.9	24.5
Over 0.38	2.17	20,955	.22	.04	.01	11.9	10.1	9.3
TOTAL	100.0	17,495	.41	.09	.03	100.0	100.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-10. Sources of income by poverty group
(column percentages)

	Poor	Non-poor	All
Agricultural production	64.4	49.9	53.9
Artisanry and services	21.7	24.8	24.0
Commerce	5.1	7.5	6.8
Agricultural wages	6.1	2.6	3.5
Other employment income	1.3	11.7	8.9
Sale of assets	1.1	2.2	1.9
Rental income	.2	1.2	.9
TOTAL	100.0	100.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-11. Sources of income by poverty group
(row percentages)

	Poor	Non-poor	All
Agricultural production	32.3	67.7	100.0
Artisanry and services	24.5	75.5	100.0
Commerce	20.3	79.7	100.0
Agricultural wages	46.7	53.3	100.0
Other employment income	4.0	96.0	100.0
Sale of assets	14.8	85.2	100.0
Rental income	6 3	93.7	100.0
TOTAL	27.0	73.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-12. Indices of Poverty by principal occupation

	Pop. share(%)	Mean expenditure F/yr/pers)	P0	P1	P2	Share P0	Share P1	Share P2
Farmer	73.7	16,523	.45	.10	.03	83.9	82.4	82.8
Artisan	9.7	24,443	.13	.01	.00	3.1	1.3	.8
Merchant	4.1	21,073	.42	.10	.03	4.4	4.5	4.0
Employee	5.93	3,444	.19	.04	.02	2.9	2.8	3.3
Other	6.5	19,363	.35	.11	.04	5.8	8.0	9.1
TOTAL	100.0	18,670	.40	.09	.03	100.0	100.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-13. Sources of Agricultural Income Among Rural Households by Poverty Group (FRw/household/year)

	Poor	Non-poor	All
Food crop sales	3,234	7,061	5,481
Cash crop sales	2,599	4,565	3,753
Animal product sales	2,569	4,643	3,787
Home produced food	33,405	44,893	40,150
Crop production costs	-2,361	-5,258	-4,062
Animal prod. costs	-797	-1,062	-952
Land purchases	-297	-263	-277
TOTAL	38,352	54,580	47,880

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-14. Sources of Agricultural Income Among Rural Households by Poverty Group (row percentage)

	Poor	Non-poor	Total
Food crop sales	24.4	75.6	100.0
Cash crop sales	28.6	71.4	100.0
Animal product sales	28.0	72.0	100.0
Home produced food	34.4	65.6	100.0
Crop production costs	4.0	76.0	100.0
Animal prod. costs	34.6	65.4	100.0
Land purchases	44.2	55.8	100.0
TOTAL	33.1	66.9	700.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-15. Composition of Gross Value of Agricultural Production by Poverty Group (colum percentages)

	Poor	Non-poor	All
Sorghum	2.6	2.2	2.4
Cassava	10.7	7.0	8.2
Sweet potato	20.6	12.2	14.9
White potato	5.0	8.5	7.4
Banana	9.7	11.0	10.6
Beans	25.8	23.2	24.1
Fruit/vegetables	5.1	4.9	4.9
Other food crops	5.8	7.4	6.9
Coffee	4.7	5.4	5.1
Other cash crops	1.5	1.9	1.8
Cattle	2.2	4.2	3.5
Other animals	6.4	12.0	10.2
TOTAL	100.0	100.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-16. Composition of Gross Value of Agricultural Production by Poverty Group (row percentages)

	Poor	Non-poor	All
Sorghum	36 0	64.0	100.0
Cassava	42.0	58.0	100.0
Sweet potato	44.5	55.5	100.0
White potato	21.7	78.3	100.0
Banana	29.6	70.4	100.0
Beans	34.5	65.5	100.0
Fruit/vegetables	33.0	67.0	100.0
Other food crops	26.9	73.1	100.0
Coffee	29.2	70.8	100.0
Other cash crops	27.6	72.4	100.0
Cattle	19.7	80.3	100.0
Other animals	20.2	79.8	100.0
OTHER	32.2	67.8	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-17 Composition of Agricultural Sales by Poverty Group (column percentages)

	Poor	Non-poor	All
Sorghum	7.7	6.1	6.5
Cassava	6.7	4.1	4.8
Sweet potato	3.7	3.9	3.8
White potato	2.8	9.8	7.9
Banana	9.5	7.1	7.7
Beans	4.3	5.3	5.0
Fruit/vegetables	1.5	3.1	2.7
Other food crops	2.6	3.7	3.4
Coffee	23.5	21.0	21.7
Other cash crops	7.1	7.1	7.1
Cattle	10.1	12.2	11.6
Other animals	20.5	16.7	17.7
OTHER	100.0	100.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-18. Composition of Agricultural Sales by Poverty Group (row percentages)

	Poor	Non-poor	All
Sorghum	31.7	68.3	100.0
Cassava	37.5	62.5	100.0
Sweet potato	25.9	74.1	100.0
White potato	9.5	90.5	100.0
Banana	33.1	66.9	100.0
Beans	23.1	76.9	100.0
Fruit/vegetables	14.8	85.2	100.0
Other food crops	2 3	79.7	100.0
Coffee	29 1	70.9	100.0
Other cash crops	27.0	73.0	100.0
Cattle	23.2	76.8	100.0
Other animals	31.1	68.9	100.0
OTHER	26.9	73.1	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-19. Composition of agricultural input purchases by poverty group (column percentage)

	Poor	Non-poor	All
Seeds/plants	33.0	10.3	15.8
Hoes	19.4	8.7	11.2
Other inputs	2.4	6.2	5.3
Hired labor	32.0	53.2	48.1
Rented land	13.2	21.6	19.6
TOTAL	100.00	100.00	100.00

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-20. Composition of agricultural input purchases by poverty group (row percentage)

	Poor	Non-poor	All
Seeds/plants	50.3	49.7	100.0
Hoes	41.4	58.6	100.0
Other inputs	10.8	89.2	100.0
Hired labor	16.0	84.0	100.0
Rented land	16.2	83.8	100.0
TOTAL	24.0	76.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-21. Composition of expenditure by poverty group (Column percentages)

	Poor	Non-poor	All
Cash Expenditure on food	20.1	22.1	21.6
Home production of food	60.1	44.3	48.6
Cash expenditure on non-food	11.8	25.6	21.9
Expenditure via transfers	7.3	7.4	7.4
Expenditure via barter	.7	.6	.6
TOTAL	100.0	100.0	100.0

Source: Bank Staff Estimates from raw data from the "Enquête sur le budget et la consommation.

Table A-22. Composition of expenditure by poverty group (row percentages)

	Poor	Non-poor	All
Cash Expenditure on food	25.1	74.9	100.0
Home production of food	33.3	66.7	100.0
Cash expenditure on non-food	14.5	85.5	100.0
Expenditure via transfers	26.7	73.3	100.0
Expenditure via barter	32.2	67.8	100.0
TOTAL	26.9	73.1	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-23. Composition of food expenditure by poverty group (column percentages)

	Poor	Non-poor	All
Sorghum	1.9	1.3	1.4
Maize	1.4	1.8	1.7
Rice	.6	1.0	.9
Cassava	9.1	5.6	6.7
Sweet Potatoes	18.0	9.1	11.8
white Potatoes	4.5	6.8	6.1
Bananas	6.8	7.4	7.2
Beans	26.5	21.0	22.7
Fruit/vegetables	4.5	4.2	4.3
Beef	1.6	2.5	2.2
Other Meats	1.3	2.0	1.8
Fish	.9	1.5	1.3
Milk and Eggs	.8	4.9	3.7
Banana Beer	10.0	13.5	12.4
Sorghum Beer	3.7	4.2	4.0
Factory Beer	.5	2.8	2.1
Oils and Fats	1.0	1.7	1.5
Condiments	1.5	2.1	1.9
Prepared meals	.5	.9	.8
Other	4.7	5.9	5.5
TOTAL	100.0	100.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-25. Composition of cash food expenditure by poverty group (row percentages)

	Poor	Non-poor	All
Sorghum	33.76	62.24	100.0
Maize	38.8	61.2	100.0
Rice	12.7	87.3	100.0
Cassava	38.1	61.9	100.0
Sweet Potatoes	38.7	61.3	100.0
white Potatoes	18.4	81.6	100.0
Bananas	16.6	83.4	100.0
Beans	39.9	60.1	100.0
Fruit/vegetables	16.8	83.2	100.0
Beef	20.9	79.1	100.0
Other Meats	18.8	81.2	100.0
Fish	22.5	77.5	100.0
Milk and Eggs	2.3	97.7	100.0
Banana Beer	25.3	74.7	100.0
Sorghum Beer	37.1	62.9	100.0
Factory Beer	6.9	93.1	100.0
Oils and Fats	18.7	81.3	100.0
Condiments	23.9	76.1	100.0
Prepared meals	19.2	80.8	100.0
Other	18.1	81.9	100.0
TOTAL	25.1	74.9	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-26. Importance of home production by poverty group (percentage of value of consumption)

	Poor	Non-poor	All
Sorghum	42.1	31.6	35.7
Maize	70.2	77.4	75.6
Rice	29.1	.0	5.7
Cassava	81.6	79.9	80.6
Sweet Potatoes	98.7	90.7	90.2
white Potatoes	77.1	67.9	70.0
Bananas	93.1	88.7	90.0
Beans	75.9	79.1	78.0
Fruit/vegetables	88.5	76.5	80.3
Beef	6.2	.6	1.8
Other Meats	56.1	42.9	45.9
Fish	52.1	55.4	54.7
Milk and Eggs	62.4	80.0	78.8
Banana Beer	21.8	25.7	24.7
Sorghum Beer	40.8	40.1	40.3
Factory Beer	.0	.0	.0
Oils and Fats	.0	.1	.1
Condiments	5.4	4.6	4.8
Prepared meals	.0	.0	.0
Other	74.9	67.6	69.5
TOTAL			

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table A-27. Distribution of Cash Purchases by Poverty Group
(column percentages)

	Poor	Non-poor	All
Cloth	3.2	3.1	3.1
Used Clothing	16.9	6.7	8.2
New Clothing	5.9	5.7	5.7
School Clothing	1.7	.7	.8
Shoes and Boots	2.7	2.9	2.9
Other Clothing	2.3	2.2	2.2
Construction	26.0	37.1	35.4
Household Equipment	6.1	10.1	9.5
Kerosene	3.5	1.5	1.8
Other Energy/Water	4.2	5.5	5.3
Medication	2.9	1.3	1.6
Medical Services	6.3	1.6	2.3
Soap	5.7	2.8	3.2
Other Hygiene	.8	.9	.9
Education	1.8	1.8	1.8
Trasnsportation	4.0	9.4	8.6
Tobacco	5.2	2.7	3.1
Leisure/Services	.8	4.0	3.6
TOTAL	100.0	100.0	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

Table 28. Distribution of Cash Purchases by Poverty Group
(row percentages)

	Poor	Non-poor	All
Cloth	15.4	84.6	100.0
Used Clothing	30.8	69.2	100.0
New Clothing	15.4	84.6	100.0
School Clothing	31.4	68.6	100.0
Shoes and Boots	14.4	85.6	100.0
Other Clothing	15.4	84.6	100.0
Construction	11.0	89.0	100.0
Hous hold Equipment	9.6	90.4	100.0
Kerosene	28.4	71.6	100.0
Other Energy/Water	11.7	88.3	100.0
Medication	27.4	72.6	100.0
Medical Services	40.2	59.8	100.0
Soap	26.0	74.0	100.0
Other Hygiene	13.8	86.2	100.0
Education	14.6	85.4	100.0
Trasnsportation	7.0	93.0	100.0
Tobacco	25.3	74.7	100.0
Leisure/Services	3.2	96.8	100.0
TOTAL	14.9	85.1	100.0

Source: Bank Staff Estimates from raw data from the Enquête sur le budget et la consommation.

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ANNEX B: TECHNICAL NOTES

A. Overall Growth Rates for Projections

1. The growth rates for GDP, population, revenues, public expenditure and public debt were based on the rates used the Rwanda Economic Strategy Note (ESN)[49]. These rates are summarized in Table B-1 below:

Table B-1: Growth Rates for GDP, Population, Government Expenditures and Revenues (%)

	1993	*1995*	*1998*	*2000*	*2003*	*2005*	*2007*	*2009*	*2011*	*2013*	*2015*
GDP Growth Rate	3.0	3.2	4.6	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.0
Population Growth Rate	2.7	2.5	2.4	2.2	2.0	1 9	1.8	1.7	1.7	1.6	1.5
Growth i 1 Govt. Rev.	4.1	4.1	4.1	5.4	5.8	5.8	5.8	5.8	5.8	5.8	5.2
Growth in Govt. Exp.	1.1	1.1	4.0	4.0	4.4	4.4	4.4	4.4	4.4	4.4	4.4

Source: Bank Staff Estimates.

2. The rates are not extra-ordinarily ambitious for when compared with those achieved by low-income densely populated countries elsewhere. They do require substantive progress in family planning coverage, a degree of economic liberalization and substantial investments in human capital.

B. Poverty Estimates 1985-1992 and Projections to 2000

1. Poverty Estimates 1985-1992

3. While poverty estimates for 1985 were based on the survey results discussed in Annex-A estimates of the poverty head count, poverty gap and poverty severity between 1985 and 1992 were calculated using the POVCAL program[50]. The first alternative was based on no changes in income distribution between 1985 and 1992 i.e. the Lorenz curve was held constant and the only thing that changed was the mean expenditure. Mean expenditure was assumed to vary with per capita income on a one to one basis.

4. The second alternative was prepared in view of the high likelihood that income distribution had worsened between 1985 and 1992 due to frequent localized famines and the effects of the civil war. This happens as households facing a crisis sell of assets to tackle the immediate problem and are forced to start the next period with less assets and less income earning potential. The effects combined with the overall downward economic trend to increase inequality. The arbitrary assumptions of a deteriorating distribution by quintile for the second alternative are given below for illustrative purpose. Under this scenario, the Gini coefficients worsens about 0.01 per year to 0.34 in 1992

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[49] *Rwanda: Note de Stratégie Economique: Vers une Croissance Durable,* World Bank, 1993.

[50] POVCAL was developed in the World Bank by Martin Ravallion, Gaurav Dutt and Shahoua Chen, PRDPH.

from 0.27 in 1985. These data were fed into POVCAL to produce new Lorenz curves and various poverty coefficients.

Table B-2: Rwanda - Income Distribution Patterns over Time Assuming Worsening of Gini

Group	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*	*1991*	*1992*
					Shares of Income Held by Quintile			
1st Quintile	10.09%	9.81%	9.54%	9.26%	8.99%	8.72%	8.44%	8.17%
2nd Quintile	13.31%	12.95%	12.59%	12.23%	11.87%	11.50%	11.14%	10.78%
3rd Quintile	16.67%	16.44%	16.21%	15.98%	15.75%	15.51%	15.28%	15.05%
4th Quintile	21.63%	21.99%	22.35%	22.71%	23.07%	23.43%	23.79%	24.15%
Top Quintile	38.30%	38.81%	39.32%	39.82%	40.33%	40.83%	41.34%	41.85%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00 %
Estimated Gini	0.281	0.290	0.298	0.307	0.316	.325	0.334	0.342

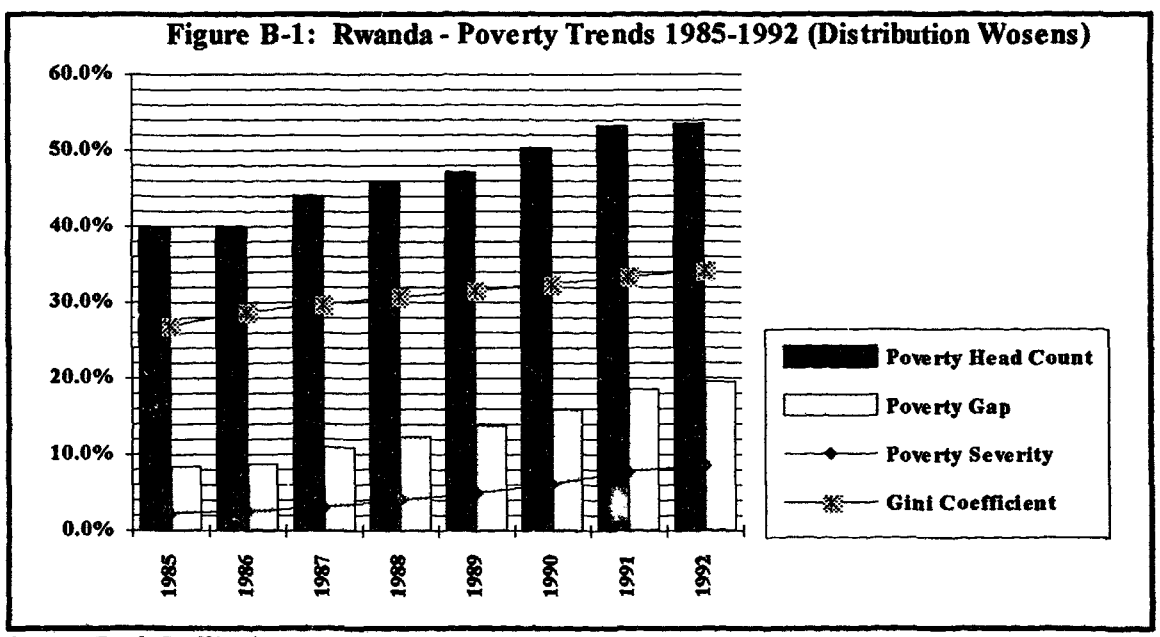
Source: Bank Staff Estimates.

5. The results for the option with no changes in income distribution are given in Chapter 2. Table B-3 and Figure B-1 presents results for the alternative with worsening income distribution.

Table B-3: Rwanda - Poverty Estimates 1985-1992 with increasing inequality

Item	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**
Poverty Head Count	40.0%	3. 9%	44.0%	46.0%	47.2%	50.3%	53.3%	53.5%
Poverty Gap	8.4%	8.7%	10.9%	12.3%	13.8%	15.9%	18.6%	19.5%
Poverty Severity	2.4%	2.5%	3.1%	4.1%	4.9%	6.1%	7.8%	8.6%
Gini Coefficient	0.270	0.287	0.298	0.307	0.316	0.325	0.334	0.342
Changes in Inc./Cap.		1.9%	-3.7%	-1.3%	-1.4%	-3.3%	-4.7%	-2.4%

Source: Bank Staff Estimates.



Source: Bank Staff Estimates.

2. Projections for 1993-2015

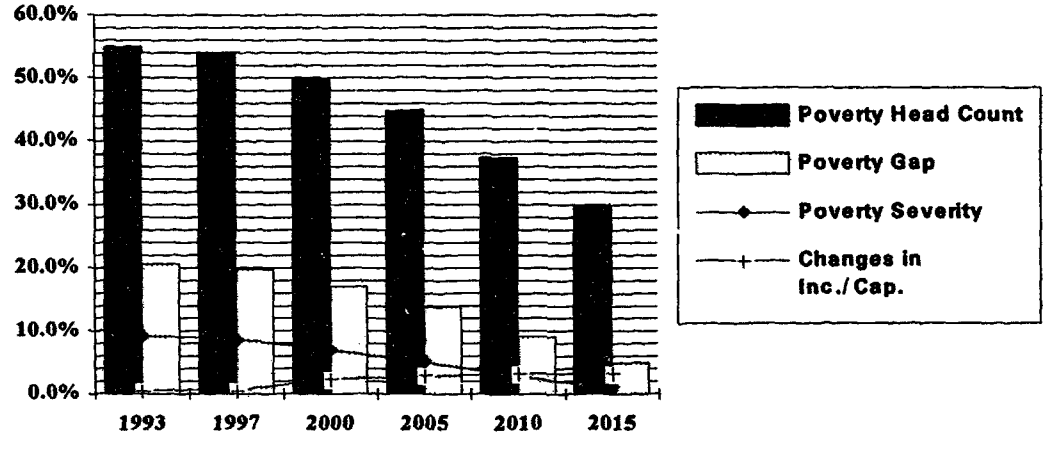
6. The projections for 1993-2015 were carried under two assumptions of Gini (0.27 and 0.34). Per capita expenditures are expected to grow along the lines predicted in the Economic Strategy Note for Rwanda. Even with the somewhat optimistic growth rates in the ESN, under both scenarios, the poverty head count remains stubbornly high. The results for both scenarios are given in Table B-4 and a graphic presentation of the results with Gini=0.34 is given in Figure B-2.

Table B-4: Poverty Estimates with different levels of inequality 1993-2015

Alternative I - Gini Coefficient = .27						
Item	**1993**	**1997**	**2000**	**2005**	**2010**	**2015**
Poverty Head Count	53.3%	51.4%	44.1%	35.3%	22.0%	10.5%
Poverty Gap	14.0%	13.1%	10.1%	7.0%	3.3%	1.1%
Poverty Severity	4.8%	4.4%	3.1%	1.9%	0.7%	0.2%
Changes in Inc./Cap.	0.6%	0.6%	2.3%	2.8%	3.2%	3.2%
Alternative II - Gini Coefficient= .34						
Item	**1993**	**1997**	**2000**	**2005**	**2010**	**2015**
Poverty Head Count	55.0%	53.9%	49.9%	45.0%	37.4%	29.9%
Poverty Gap	20.6%	19.8%	17.0%	13.8%	9.1%	4.9%
Poverty Severity	9.2%	8.7%	7.0%	5.1%	2.7%	1.1%
Changes in Inc./Cap.	0.6%	0.6%	2.3%	2.8%	3.2%	3.2%

Source: Bank Staff Estimates from raw data from the "Enquête Nationale sur le budget et la consommation."

Figure B-2: Projections of Impact of Sustained Growth on Poverty Gini=.34



Source: Bank Staff Estimates.

C. INCIDENCE ANALYSIS

1. Illustrative Example of Incidence Analysis Methodology

7. The incidence analysis was carried out using data from the poverty profile, administrative data on taxes and expenditures as well information gathered during field visits. The analysis was carried out at the national level and the only local expenditure included is central transfers to communes. Communes rely heavily on head taxes for revenue. This is quite regressive though communes tend to provide assistance with their own resources for the poor. For each category of tax and expenditure the percent going to the poor and non-poor established primarily based on the results of the poverty profile but also on additional information gathered from field visits to schools, health centers, farmers, commune tax offices etc. This was easier for expenditures with direct beneficiaries such as education and health than for expenditures such as general administration which are public goods. For the latter value judgements were necessary and this study opted for the simplest approach of assigning incidence to direct beneficiaries such as civil servants for general administration. This approach could be considered tautological but has the advantage of avoiding value judgements.

8. The population was divided into two large groups - poor and non-poor. These groupings follow those in the detailed poverty profile in Annex-A. Due to the limited sample size, it was considered safer to stay with two groups rather than disaggregating further. Depending on data availability, the analysis can be carried out in quintiles or deciles or in even more detail.

9. After examining public expenditure patterns (as shown in the detailed tables in Annex-A), and administrative data on use of different services, each type of of public expenditure was given a weight. Expenditures such as health, education etc. were broken down in great detail and weights assigned to the detailed breakdwon. Table B-5 demonstrates using health sector data.

Table B-5: Calculating Poverty Coefficients for Health Care

Item	Expenditures	Exp. Dist %	% Poor	% Non-Poor
Personnel	997,390,000	48.5%	45%	55%
Medicines	400,000,000	19.4%	40%	60%
Technical Materials	181,500,000	8.8%	40%	60%
Preventive Medicine	20,680,000	1.0%	60%	40%
Medical Equipment Maintenan.	5,000,000	0.2%	25%	75%
Building Maintenance	25,000,000	1.2%	35%	65%
Special Care	80,000,000	3.9%	5%	95%
Other Ministry Costs	198,794,500	9.7%	30%	70%
Transfers to Hospitals	91,698,000	4.5%	30%	70%
Transfers to NGO sector	31,440,000	1.5%	35%	65%
Transfers for Blood Transfusion	25,378,000	1.2%	40%	60%
Total	2,056,880,500	100.0%	40%	60%

Source: Bank Staff Estimates.

10. Weighted averages were established in detail for all sectors and are given in Table B-6.

Table B-6: Allocation Poor/Non-Poor by Category

Economic Category	Non-Poor %	Poor%
General Public Services	96%	4%
Defense	90%	10%
Social Services		
-Education	75%	25%
-Health	60%	40%
-Other	50%	50%
Economic Services		
-Agriculture	90%	10%
-Mining, Manufac. and Construction	99%	1%
-Energy and Public Works	90%	10%
-Transport and Communications	99%	1%
-Other Economic Affairs	90%	10%
Interest on Public Debt		
-Domestic	100%	0%
-Exterior	60%	40%
Other Expenditure	100%	0%

Source: Bank Staff Estimates.

11. Similarly, weighted averages were established for revenue incidence by poverty group and are given in table B-7.

Table B-7: Source of Revenue by Poverty Group and Category

Revenue Source		
Tax on Income and Profit		
-Corporate	99%	1%
-Patents	99%	1%
-Individual	99%	1%
-Other	90%	10%
Taxes on Property	90%	10%
Domestic Taxes on Goods & Services		
-Excise	90%	10%
-Sales Taxes	90%	10%
-Petroleum	90%	10%
Taxes on International Trade		
-Import Duties	85%	25%
-Export tax on Coffee	71%	29%
-Other Export taxes	80%	20%
-Misc. Trade axes & Fees	90%	10%
Non-Tax Revenue and Adjustment	60%	40%

Source: Bank Staff Estimates.

12. Based on the coefficients on table B-4 expenditures going to the poor and non-poor were calculated. These totals were divided by the numbers in each category as established by the poverty projections described in section A. The population poor/ non-poor was established by multiplying the total population by the Poverty Head Count Index. An example of such calculation is given Table B-8 for 1991.

Table B-8: Calculation of expenditures poor & non-poor 1991

Economic Category	Poor	Non-Poor
General Public Services	422	10,128
Defense	889	8,001
Social Services	2,244	5,747
-Education	1,618	4,853
-Health	536	804
-Other	90	90
Economic Services	217	2,713
-Agriculture	59	531
-Mining, Manufac. and Construction	1	119
-Energy and Public Works	131	1,179
-Transport and Communications	7	713
-Other Economic Affairs	19	171
Interest on Public Debt	556	4,146
-Domestic	0	3,312
-Exterior	556	834
Other	0	4,768
Expenditures	4,328	35,502
Population	3,705,134	3,531,456
Expend/Capita	1,168	10,053

Source: Bank Staff Estimates.

13. The expenditures and revenues per capita were dived by the average expenditures for each group to calculate the tax and expenditure rate by poverty group. Average expenditures for the poor were calculated by multiplying the poverty line adjusted to current prices by $(1- P_1)$ where P_1 is the poverty gap index. The average expenditures for the non-poor was then calculated as residual. Similar calculations were carried out for revenue.

2. Mathematical Structure Underlying Incidence Analysis

14. The equations underlying the incidence calculations are as follows:

Eqn. 1 $E_{p,t} = \sum_i (E_{i,t}\ W_{p,i})$

Eqn. 2 $E_{n,t} = \sum_i E_{i,t}\ (I-W_{p,i})$

Eqn. 3 $R_{p,t} = \Sigma R_{i,t}\ QW_{p,i}$

$$\text{Eqn. 4} \quad R_{n,t} = \sum_{i} (R_{i,t}(I-W_{p,i})$$

$$\text{Eqn. 5} \quad 0_t = P_t H_t$$

$$\text{Eqn. 6} \quad N_t = P_t(I-H_t)$$

$$\text{Eqn. 7} \quad e_{p,t} = E_{p,t}/0_t$$

$$\text{Eqn. 8} \quad e_{n,t} = E_{n,t}/N_t$$

$$\text{Eqn. 9} \quad r_{p,t} = R_{,t}/0_t$$

$$\text{Eqn. 10} \quad r_{n,t} = R_{n,t}/N_t$$

$$\text{Eqn. 11} \quad Y_{p,t} = L_t(I-G_t)/0_t$$

$$\text{Eqn. 12} \quad Y_{n,t} = (Y_t P_t - Y_{p't} 0_t)/N_t$$

$$\text{Eqn. 13} \quad t_{p,t} = r_{p,t}/Y_{p,t}$$

$$\text{Eqn. 14} \quad t_{n,t} = r_{n,t}/Y_{n,t}$$

$$\text{Eqn. 15} \quad X_{p,t} = e_{p,t}/Y_{n,t}$$

$$\text{Eqn. 16} \quad X_{n,t} = e_{n,t}/Y_{n,t}$$

$$\text{Eqn. 17} \quad I_{p,t} = (e_{p,t} - t_{n,t})/Y_{p,t}$$

$$\text{Eqn. 18} \quad I_{n,t} = (e_{n,t} - t_{n,t})/Y_{n,t}$$

where,

$W_{p,i,t}$	=	Proportion of expenditures for item "i" going to poor or proportion tax "i" being paid by the poor at time "t". In this exercise, it has been assumed constant over time
$E_{i,t}$	=	Public Expenditure in category "i"at time "t".
$R_{i,t}$	=	Revenue Category "i"at time "t ".
$E_{p,t}$	=	Total public expenditure on poor at time "t".
$E_{n,t}$	=	Total public expenditure on non-poor at time "t"
$R_{p,t}$	=	Total Revenues from poor at time "t"
$R_{n,t}$	=	Total Revenue from non-poor at time "t"
$e_{p,t}$	=	Per capita expenditure on poor at time "t"
$e_{n,t}$	=	Per capita expenditures on poor at time "t"
$r_{,pt}$	=	Per capita revenues from poor at time "t"
$r_{n,t}$	=	Per capita revenues from non-poor at time "t"
O_t	=	Number of poor at time "t"
N_t	=	Number of non-poor at time "t"
P_t	=	Total population at time "t"
H_t	=	Head count poverty index at time "t"
G_t	=	Poverty gap index at time "t"
L_t	=	Poverty line at time "t"
$Y_{p,t}$	=	Average expenditures of poor at time "t"
$Y_{n,t}$	=	Average expenditure of non-poor at time "t"
Y_t	=	Average expenditure at time "t"
$t_{n,t}$	=	Tax rate on non-poor at time "t"
$t_{p,t}$	=	Tax rate on poor at time "t"

$X_{n,t}$	=	Public Expenditure incidence rate on non-poor at time "t"
$X_{p,t}$	=	Public Expenditure incidence rate on poor at time "t"
$I_{n,t}$	=	Net incidence of Public Expenditure and Revenues on non-poor at time "t"
$I_{p,t}$	=	Net incidence of Public Expenditure and Revenues on poor at time "t"

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ANNEXE C - ENQUETE PARTICIPATIVE DE LA PAUVRETE AU RWANDA

RESUME

Dans le cadre de l'étude entreprise par la Banque Mondiale sur la lutte contre la pauvreté et la croissance durable au Rwanda, une enquête-participation a été lancée fin 1993 afin d'essayer de saisir la réalité des pauvres, de les écouter et de comprendre la manière dont ils perçoivent leurs problèmes et les solutions à y apporter.

L'enquête a été menée dans huit préfectures du Rwanda couvrant une zone urbaine, une zone semi-urbaine et six zones rurales. La méthodologie est celle des enquêtes participatives basées sur des interviews non structurées des ménages et des groupes particuliers ciblés. L'échantillon, choisi en fonction des objectifs de l'enquête, comprend les ménages les plus démunis des communes enquêtées. Les informations supplémentaires proviennent des archives des communes et des enquêtes formelles auprès des institutions concernées.

Les résultats de l'enquête, tout en confirmant les données existantes dans les secteurs de l'agriculture, de l'éducation et de la santé, soulignent que la situation est devenue grave, désespérée même pour les ménages qui ont fait l'objet de l'enquête. Les groupes particulièrement vulnérables sont les mères célibataires, les femmes répudiées, celles qui vivent en union libre et leurs enfants.

Dans le domaine agricole, l'enquête a noté l'impérieuse nécessité d'accroître la surface des terres cultivables et d'augmenter leur productivité. Les agriculteurs vivent de cultures d'autosubsistance qui, dans la majorité des cas, ne suffisent pas à produire le minimum vital nécessaire. Les cultures de rente sont réservées aux familles mieux nanties qui emploient des journaliers pour des salaires minimes. Toutes les suggestions des agriculteurs portent invariablement sur les besoins en intrants et sur une meilleure distribution et plus grande compétence des services d'extension. Le regroupement des exploitations agricoles, ainsi que l'accès au crédit et la promotion d'activités non agricoles ont aussi été mentionnés. Dans les préfectures de Ruhengeri et de Butare, les agriculteurs ont suggéré l'exploitation des marais afin de les transformer en terres cultivables.

Les réflexions et attitudes des enquêtés démontrent qu'une méthode participative de vulgarisation intégrant la recherche et le développement pourrait être efficace comme stratégie pour le secteur agricole et pourrait mener à l'adoption de nouvelles cultures correspondant aux besoins de la population telles que le soja par exemple.

Dans le domaine de l'enseignement primaire, l'enquête a indiqué le coût élevé des frais scolaires et l'absence d'intérêt vis-à-vis de l'éducation de la part des parents et des enfants. Dès lors, il apparaît qu'avant même d'aborder les besoins de l'enseignement secondaire qui n'ont par ailleurs pas été couverts par cette enquête faute d'élèves inscrits dans l'échantillon, des efforts intégrés devront être menés sur divers fronts : sensibilisation des parents à l'importance de l'enseignement primaire, frais scolaires, malnutrition et morbidité des enfants, matériel scolaire inadéquat et programme non adapté aux besoins et capacités des enfants.

En ce qui concerne la santé, l'insuffisance de médecins, de médicaments, de moyens de transfert des malades et les mouvements des déplacés et des réfugiés font que dans ce secteur aussi, les besoins sont immenses. La lutte contre la malaria, le SIDA et le kwashiorkor pour ne citer que ces maladies exigerait la mise en place de vastes programmes. De plus, étant donné l'état alarmant de la nutrition, spécialement parmi les groupes les plus défavorisés de femmes et d'enfants, il est impératif d'examiner la possibilité d'inclure systématiquement dans les programmes existants et dans les programmes mentionnés ci-dessus les composantes destinées à procurer de l'aide alimentaire aux plus démunis. Quant aux programmes de planification familiale, ils sont loin d'avoir atteint leurs objectifs. Tandis que des efforts de sensibilisation se font dans tout le pays, la distribution des moyens contraceptifs est interdite dans les centres de santé tenus par des organisations religieuses et l'enquête révèle aussi de sérieuses contraintes culturelles à l'usage des moyens contraceptifs.

Il y a encore lieu de noter que parmi les centaines de ménages enquêtés non représentatifs, aucun n'a mentionné l'option d'émigrer vers la ville et n'a fait référence aux limitations administratives imposées par l'Etat à l'exode rural. Cette particularité mérite d'être relevée et de donner lieu à des recherches sur les transferts du milieu urbain vers le milieu rural et sur les possibilités d'émigration soit dans des villes secondaires ou encore à l'étranger.

INTRODUCTION ET JUSTIFICATION DE L'ENQUETE

La Banque Mondiale a entrepris une étude sur la lutte contre la pauvreté et la croissance durable au Rwanda. Cette étude comprend un profil de pauvreté qui examine la nature et l'étendue de la pauvreté, un examen des politiques gouvernementales en cours liées à la pauvreté, une analyse des dépenses publiques, des institutions et des dispositifs de sécurité en vigueur et des suggestions quant aux mesures prioritaires que le gouvernement pourrait entreprendre pour réduire la pauvreté.

Les expériences de la Banque et autres organismes internationaux ont montré qu'une stratégie efficace de lutte contre la pauvreté doit être comprise et respectée par les bénéficiaires eux-mêmes et se doit donc de refléter leurs besoins et leurs priorités. Ce qui permet d'assurer que les politiques et programmes destinés à lutter contre la pauvreté auront l'impact voulu sur les conditions de vie des populations en question. De plus, les chances de durabilité de ces programmes issus de la participation populaire sont accrues. Les pauvres sont en général désavantagés non seulement dans l'accès et la distribution des ressources mais aussi par rapport à la puissance et l'influence exercées par les groupes d'intérêt. Par conséquent, leur permettre de s'exprimer augmente leurs possibilités de contrôler leur situation et de l'améliorer.

Des politiques économiques adéquates peuvent créer les opportunités nécessaires pour la réduction de la pauvreté, mais il faut que les pauvres puissent les saisir. Tandis que la pauvreté est souvent appréhendée au travers de politiques ou de réformes structurelles venant "d'en haut", il est également important de mieux comprendre les besoins des pauvres et les institutions dont ils dépendent ou au sein desquelles ils pourront s'efforcer de dépasser leur situation.

A ces fins, une enquête participation a été lancée au Rwanda en octobre 1993 couvrant six zones rurales, une zone semi-urbaine et une zone urbaine. Cette enquête de type qualitatif sert de complément aux données quantitatives qui fournissent les bases de l'étude sur la lutte contre la pauvreté et la croissance durable au Rwanda.

METHODOLOGIE

Un atelier d'une semaine destiné à la formation des enquêteurs et à la définition et l'identification des zones à couvrir a été organisé par Claudine Voyadzis, consultante pour la Banque Mondiale. L'équipe se composait de Verediana Kaligirwa, chef d'équipe, d'Immaculée Mukankubito et de Daniel Karenzi, assistants coordinateurs et de 16 enquêteurs de l'Organisation Non-Gouvernementale "Réseau des Femmes Oeuvrant pour le Développement Rural". Un homme et une femme ont couvert chacune des huit zones d'enquête dont six sont dans les régions rurales, une dans la périphérie de Kigali et une dans la ville de Kigali même. Le choix des zones a été décidé par consensus entre tous les participants de l'atelier :

1. Kigali (Préfecture de la Ville de Kigali), Commune de Nyarugenge.
2. Kigali (Préfecture de la Ville de Kigali), Commune de Rutongo.
3. Préfecture de Ruhengeri, Commune de Ruhondo.
4. Préfecture de Kibuye, Commune de Rutsiro.
5. Préfecture de Gikongoro, Commune de Karama.

6. Préfecture de Butaré, Commune de Kigembe.
7. Préfecture de Gitarama, Commune de Mukingi.
8. Préfecture de Rwamagana, Commune de Rutonde.

Le chef d'équipe et les deux assistants coordinateurs ont supervisé les enquêteurs en trois fois : (i) au démarrage de l'enquête (après un ou deux jours), (ii) après environ 10 jours où une première identification des éléments dynamiques a eu lieu pour permettre une rencontre de groupe avec les enquêteurs et les superviseurs, et (iii) à la fin de l'enquête où une dernière réunion de groupe a eu lieu avec les mêmes personnes ou d'autres personnes selon la dynamique de l'enquête.

Le nombre de jours consacrés à l'enquête sur le terrain était de vingt-cinq moins les jours consacrés au déplacement des enquêteurs.

Etapes

1. Présentation de l'enquête, de ses objectifs et de sa finalité au Bourgmestre avec lettre de créance.
2. Elaboration d'un profil socio-économique de la commune à l'aide de la documentation trouvée sur place (monographies, archives de la commune, etc.)
3. Entretiens avec les autorités communales et les agents de développement (Centre Communal de Développement pour la Formation Primaire, paroisses, ONG, etc.). Selon ces entretiens, la localisation des secteurs les plus défavorisés s'est faite selon les deux critères principaux : (i) occupation de terrain inférieur à 0.25 ha, les "sans terre" et (ii) état de l'habitat, les "mal logés".
4. Choix raisonné du secteur (le plus défavorisé) et choix de 12 ménages au hasard dans ce secteur.
5. Visites et interviews structurées des institutions desservant le secteur à enquêter: centres de santé, centres nutritionnels, écoles, paroisses, organisations religieuses ou communautaires, ONG, etc. Un ensemble de questions de base servant de cadre de référence ont été élaborées en commun, avec la participation du chef d'équipe, des deux assistants et de tous les enquêteurs pour chaque type d'institutions.
6. Interviews de type EMIC des différentes catégories : chefs de ménages, membres des ménages et, selon l'identification procurée par les groupements religieux, les ONG ou d'autres sources d'information, des groupes sociaux homogènes ou personnes isolées qui peuvent être des enfants de la rue, des mères célibataires, des délinquants, des vieillards abandonnés ou des handicapés. Ces interviews ont été répétées à deux ou trois reprises afin de pouvoir obtenir un maximum d'informations. Un ensemble de questions de base servant de cadre de référence ont été élaborées en commun, avec la participation du chef d'équipe, des deux assistants et de tous les enquêteurs pour les ménages et les groupes sociaux.
7. Trois supervisions par le chef d'équipe et ses assistants dans les zones d'enquêtes ont été effectuées au début, au milieu et à la fin de l'enquête. Au cours de ces

supervisions, des rapports partiels ont été discutés et des réunions avec certains éléments dynamiques identifiés parmi les enquêtés ont été organisées.

8. Le rapport des deux enquêteurs comprenait un profil socio-économique de la commune, le type de services offerts par les institutions, les caractéristiques des ménages et les réponses, commentaires et opinions des enquêtés.

RESULTATS PRELIMINAIRES DE L'ENQUETE

Les résultats préliminaires de l'enquête ne sont pas représentatifs parce que l'échantillon n'est pas choisi au hasard. Ils devraient être utilisés pour interpréter les résultats d'une enquête statistiquement représentative dont l'échantillon est choisi au hasard.

A. PERCEPTIONS DE LA PAUVRETE PAR LES MENAGES ENQUETES ET LES ENQUETEURS

1. Priorités dégagées par les ménages des communes enquêtées

L'ensemble des problèmes et priorités soulevés par les ménages enquêtés sont repris ci-dessous. Les communes pour qui ces problèmes sont prioritaires sont indiquées entre parenthèses. De manière générale, l'ordre de priorité varie légèrement selon les communes mais toutes mettent l'accent sur l'exiguïté des terres et la faible productivité des sols.

- Le besoin d'explorer toutes les possibilités d'accroître la surface des terres cultivables (toutes les communes rurales);

- La nécessité d'obtenir des fertilisants, des pesticides et des semences sélectionnées afin d'augmenter le rendement des terres (toutes les communes rurales);

- L'examen de la possibilité d'obtention de parcelles à exploiter à travers les groupements coopératifs (Rutonde);

- Le développement de l'habitat groupé en village pour récupérer les terres cultivables qui ne sont actuellement pas mises en valeur (Rutsiro, Karama et Nyarugenge);

- L'absence de crédit, l'impossibilité d'obtenir des crédits ou même de pouvoir rembourser des crédits obtenus (Ruhondo);

- La nécessité d'avoir un revenu autre que le revenu tiré de l'agriculture et de soutenir ou de créer des activités extra agricoles (Karama);

- La nécessité pour l'Etat d'accroître les projets de développement pourvoyeurs d'emploi (Karama);

- La requête pour une plus grande participation des autorités communales et autres techniciens d'encadrement dans le développement rural;

- La modification du code de la famille afin de protéger les droits des femmes répudiées, des femmes célibataires et des femmes des ménages polygames ainsi que ceux de leurs enfants (Rutonde);

- La possibilité de l'éducation gratuite pour les enfants (Nyarugenge);

- L'augmentation par l'Etat des campagnes de sensibilisation des méthodes modernes de planification familiale (Nyarugenge).

2. Identification de groupes particulièrement vulnérables par les enquêtés

En termes de groupes vulnérables, l'enquête a mis en évidence la situation critique des mères célibataires et des femmes répudiées ou abandonnées : la plupart d'entre elles vivent dans des conditions déplorables. Même si elles ont droit à l'usufruit des terres, les champs sont trop petits pour les nourrir ainsi que leurs enfants. Ce qui les pousse à recourir au commerce de leur corps pour se faire un peu d'argent pour survivre. Cette situation est aussi dramatique en milieu urbain qu'en milieu rural. Il y aurait un nombre croissant de mères célibataires à Kigali qui vivent d'expédients et ne bénéficient d'aucune aide, ni pour elles ni pour leurs enfants.

3. Obstacle culturel à la planification familiale de vie détecté par les enquêteurs

Les effets alarmants de la croissance démographique et l'absence de résultats tangibles de la planification familiale ont également été soulignés par l'enquête. Même si l'ONAPO a fait des efforts de sensibilisation de la population, la fertilité reste extrêmement élevée et la mentalité pro-nataliste encore fermement ancrée dans les esprits. La mortalité infantile elle aussi très élevée pousse la population à mettre au monde beaucoup d'enfants afin qu'il y ait au moins quelques survivants. Dans certaines régions comme celle de Rutsiro (Kibuye), la population est redevenue très réticente envers les méthodes de limitation des naissances se basant sur le principe : plus une famille est nombreuse mieux elle se défendra. Le système polygame et le nombre croissant de mères célibataires viennent encore aggraver le problème de forte natalité.

B. PROBLEMES SOULEVES ET SUGGESTIONS DES ENQUETES CONCERNANT

1. L'agriculture et l'élevage

Il convient de rappeler ici que l'échantillon choisi pour l'enquête est un échantillon raisonné ciblant les ménages les plus pauvres des communes enquêtées. En conséquence, la surface des terres est très réduite (0,25 ha environ) et ne suffit pas à nourrir les ménages. La revente des produits agricoles ne se fait que pour satisfaire des besoins primordiaux, la production étant en général entièrement auto-consommée et le stockage inexistant. Le rendement de toutes les cultures a diminué dans des proportions significatives. Aucun des 96 ménages interrogés ne possède de cultures de rente (banane à bière, café, thé).

L'absence d'assistance technique adéquate et de moniteurs agricoles compétents est durement ressentie par les paysans. Dans les préfectures de Gikongoro et Gitarama, par exemple, le service de vulgarisation existe au niveau communal, mais ne s'est jamais manifesté sur le terrain pour donner des conseils ou distribuer des intrants. Les hommes des ménages démunis sont souvent des ouvriers agricoles pour survivre et cultivent les terres des mieux nantis. Leur salaire journalier est extrêmement bas (70 FRW en moyenne). Dans la commune de Karama par exemple, les indigents visités ne sont même capables d'adopter une stratégie pour survivre et ils n'ont pas de biens mobiliers ou immobiliers à vendre ou à louer pour se procurer un peu d'argent.

La guerre et les mouvements de population dans la préfecture de Ruhengeri ont accentué le problème de l'exiguïté des terres et de leur productivité. En conséquence, disettes et famine y règnent et comme les ménages n'ont d'autres ressources que les ressources agricoles, il n'y a pas de stratégie de survie en période de soudure.

Parmi les possibilités d'extension de terres cultivables disponibles, il semble que seules les terres en haute altitude de la Crête-Zaïre-Nil peuvent être louées. Mais le type de culture y est différent et les agriculteurs n'aiment pas y rester à cause des conditions climatiques difficiles. La productivité de ces terres n'est donc pas ce qu'elle pourrait être si des agriculteurs s'y installaient.

L'élevage est extrêmement réduit, faute de pâturages et de fourrages, et ne rapporte pratiquement rien. On trouve toutefois un peu d'élevage de poules, de chèvres, de lapins, de porcs et de moutons tandis que l'élevage des bovins reste l'apanage des plus aisés. Environ la moitié des ménages interrogés ont seulement la garde du petit bétail. Presque tous les ménages des communes rurales se plaignent du manque de pâturages et souhaitent pouvoir élever du petit bétail (porcs, lapins, chèvres, moutons) ou de la

volaille. Il faut encore ajouter que les vaccins et les soins vétérinaires sont inexistants ou trop coûteux.

Parmi les suggestions des enquêtés, les thèmes suivants sont à retenir pour les besoins de cette étude :

1. Des procédures innovatives de crédit agricole devraient être étudiées pour permettre aux paysans l'obtention de produits dont ils ont grandement besoin tels que les intrants: engrais minéraux, semences sélectionnées, etc.

2. Une assistance technique et un service de vulgarisation offerts dans les zones les plus défavorisées et les moins desservies du Rwanda, portant sur tous les types de cultures et pas uniquement les cultures de rente.

3. Des possibilités d'élevage de petit bétail pouvant procurer aux ménages de l'alimentation et de la fumure organique.

4. L'instruction de la meilleure façon de pratiquer l'élevage de petit bétail et de volaille sans pâturages, l'élevage en stabulation, la construction de chèvreries et les possibilités d'obtention des vaccins, de médicaments et d'encadrement de vétérinaires.

5. Le développement agricole des marais dans les préfectures de Ruhengeri et de Butaré mériterait de faire l'objet d'une étude approfondie compte tenu des besoins aigus en terres cultivables.

2. L'éducation

Les résultats de l'enquête révèlent que plus de la moitié des chefs des ménages ne savent ni lire ni écrire. Le plus haut niveau d'instruction des ménages enquêtés est le cycle primaire. De rares cas d'élèves anciens ou actuels des CERAI apparaissent et la plupart sont des garçons. Il n'y a pas eu parmi les ménages enquêtés de cas d'élèves inscrits au cycle secondaire.

La plus grande difficulté rencontrée au niveau de l'éducation est le coût de la scolarisation, c'est-à-dire, le minerval, les fournitures scolaires et l'uniforme. La presque totalité des parents éprouve beaucoup de peine à payer ces coûts. Certains parents payent par tranches, mais malgré cela, ils n'arrivent pas à régler la totalité du minerval. Dans la plupart des communes, des organisations caritatives prennent en charge la scolarité des enfants en tout ou en partie. D'autre part, les indigents sont exempts du paiement du minerval, mais ils n'arrivent pas à payer les fournitures scolaires et l'uniforme. Il convient encore de remarquer que le port de l'uniforme n'est plus obligatoire dans la plupart des communes.

Les performances scolaires laissent à désirer et le pourcentage d'enfants acceptés au ...veau secondaire est minime. Le redoublement, l'absentéisme et l'abandon de la scolarité en cours de route sont des phénomènes courants parmi les enfants pauvres et dans une plus grande proportion chez les filles que chez les garçons.

Les familles se sentent peu concernées par la vie de l'école car elles sont trop préoccupées par leurs problèmes de survie quotidienne. La plupart des parents se contentent d'apprécier le classement de leurs enfants à la fin des trimestres mais rares sont ceux qui perçoivent la valeur relative des points obtenus par ces derniers aux interrogations et aux examens. Tout en reconnaissant les vertus de l'alphabétisation et de l'instruction, la plupart des parents manifestent un intérêt limité au déroulement de la scolarité de leurs enfants, ce qui ne fait que décourager ces derniers. La pauvreté dans ces ménages entraîne un défaitisme qui se traduit par la question rituelle : "à quoi bon ?". Cependant, pour des réalisations concrètes, les parents sont volontiers plus actifs (réfection ou construction de bâtiments scolaires par exemple).

Enfin, en ce qui concerne les distances parcourues pour se rendre à l'école, elles restent dans les normes acceptables au Rwanda grâce à des infrastructures scolaires bien réparties dans le pays.

1. Education et Formation des Adultes: Centres Communaux de Développement et de Formation Permanente (CCDFP ou IGA)

Le taux d'analphabétisation varie assez fort d'une commune à l'autre. Dans la commune de Karama où il s'élève à 28,32% (9.021 sur 31.859), l'enquête révèle que 70,3% des analphabètes ne s'intéressent pas à l'apprentissage de la lecture et de l'écriture,et parmi eux, 41,1% sont des hommes et 58,9 % des femmes. Parmi les 29,7% qui voudraient apprendre à lire et à écrire, 52,15% sont des hommes et 47.85% des femmes. Il n'y a donc pas beaucoup d'intérêt pour l'alphabétisation, la demande est cependant plus importante chez les hommes que chez les femmes.

La même commune comprend 40 associations pour la formation au niveau de l'hydraulique rurale, la lutte contre les maladies infectieuses, l'utilisation des engrais et l'intensification de l'élevage. Cependant, les ressources communales ne parviennent pas à couvrir les salaires des animateurs qui n'ont pas les moyens de se déplacer et souvent n'ont pas le niveau requis. De plus, la population n'a pas l'argent nécessaire pour se procurer les engrais et suivre les conseils des animateurs.

Dans l'ensemble, les ménages interrogés recourent rarement à ces Centres pour l'alphabétisation fonctionnelle et autres formations populaires qui ne semblent pas constituer des structures mobilisatrices pour les ménages pauvres.

2. Enseignement primaire

Il convient de noter tout d'abord que les écoles maternelles (gardiennes) n'existent qu'en milieu urbain et la demande ne paraît pas exister en milieu rural.

A part les communes de Ruhondo et Rutongo où 32% d'enseignants n'ont pas les qualifications requises, la qualification des instituteurs est satisfaisante à plus de 80%.

Les chiffres concernant les taux d'abandon de l'école primaire ne sont pas toujours disponibles et ceux qui le sont ne précisent pas en quelle année ces abandons se sont produits. On peut toutefois noter que ces taux sont élevés pour Karama, Rutongo et Mukingi. Les causes de ces abandons sont le vagabondage (souvent des orphelins ou des enfants de mères célibataires), la famine ou l'impossibilité de payer le minerval. En milieu urbain, la délinquance est aussi souvent citée.

Les taux de redoublement varient d'une classe à l'autre et dépassent parfois les 25%. Les raisons invoquées sont les mêmes que celles des taux d'abandon. Dans trois communes, le matériel scolaire est fourni aux élèves par des associations caritatives (Caritas, Bornefonden, Rhenanie-Palatinat) ou encore par la commune ou la paroisse. A Rutonde, les élèves étudient sans matériel. Quant aux uniformes, ils sont obligatoires dans la plupart des communes sauf pour les pauvres et ils sont fournis dans deux communes par les organisations caritatives.

Selon les instituteurs, le programme imposé par le Ministère de l'Enseignement Primaire et Secondaire est surchargé par rapport aux possibilités des enfants souvent mal nourris. Les programmes des 5ème et 6ème en particulier devraient être réexaminés. Certains avancent que le français devrait être enseigné dès la première année. Ils souhaitent que le programme soit conçu en tenant compte du milieu et en collaboration avec les enseignants. Les programmes mal conçus seraient à l'origine des échecs rencontrés en fin de 6ème et du petit nombre (parfois moins de 10%) accepté au niveau du secondaire.

3. CERAI (formation post-primaire de trois ans)

Il y a quatre établissements dans les communes de Kigali et deux dans toutes les autres communes enquêtées. Cependant l'enquête n'a fourni aucune information sur les CERAI.

4. Enseignement secondaire

Dans les communes enquêtées, le nombre d'établissements d'enseignement secondaire varie entre un et deux à l'exception de Kigali. L'enquête n'a pas fourni de

renseignements sur l'enseignement secondaire car les ménages enquêtés n'avaient pas d'enfants à ce niveau.

5. Intégration dans la vie active

Il n'y a en général de travail ni pour les non-diplomés ni pour ceux qui ont un certificat du primaire ou du CERAI. Dans certaines communes cependant, des coopératives sont mises en place ou se joignent à des coopératives existantes. Les filles se placent dans des ateliers de couture et les garçons dans des ateliers de maçonnerie ou de menuiserie. Toutefois, ils ne peuvent écouler leur production par manque de marchés.

3. La santé

La malaria reste la maladie la plus fréquente et la plus grande cause de mortalité et ce pour toutes les régions enquêtées y compris la préfecture de Ruhengeri autrefois considérée à l'abri de la maladie. Dans toutes les régions enquêtées et surtout en milieu rural, le kwashiorkor atteint les jeunes enfants à partir de 2 ans. Verminoses et dysenterie sont également citées comme affections très répandues.

En milieu urbain, le SIDA et les infections des voies respiratoires sévissent tandis que les enfants de 4 à 15 ans sont surtout victimes du SIDA, de la malaria et des maladies sexuellement transmissibles. Le SIDA a commencé à se répandre en milieu rural, surtout dans la Préfecture de Rutonde.

Selon les données de la commune de Karama, les filles de 2 à 8 ans sont plus sensibles au kwashiorkor (60% par rapport à 40% pour les garçons) et entre 18 et 45 ans les femmes sont plus sujettes à la malaria (55% contre 45 %). En ce qui concerne la fréquence des visites des centres de santé crées pour la plupart à l'initiative des paroisses et des congrégations religieuses, les données ne sont pas disponibles car ces centres ne tiennent pas de registre, et ceux qui les tiennent n'ont pas toujours leurs registres à jour.

Les médicaments proviennent du Ministère de la Santé, de Caritas, des subventions de l'OPHAR ou encore ils sont achetés à BUFMAR. Certains centres pratiquent l'initiative de Bamako. Les médicaments sont en général distribués gratuitement aux indigents et aux orphelins.

Le taux de couverture des vaccins pour enfants dépasse les 90% pour toutes les communes sauf pour Rwamagana où il est inférieur à 60%. Pour les adultes, ce taux est d'environ 30%.

Dans toutes les régions enquêtées, la plupart des femmes enceintes font des consultations pré et postnatales. En milieu rural, presque 90% des femmes accouchent à la maison avec l'assistance de sages-femmes ou de la famille.

Le poids à la naissance des enfants est faible en milieu rural (2 à 3 Kg), tandis qu'en milieu urbain où les femmes enceintes reçoivent un complément alimentaire durant la période de grossesse, ce poids est plus élevé. L'enquête indique encore que par exemple dans le Centre Médical de Rwaza (Ruhondo) où les femmes enceintes reçoivent un complément alimentaire subventionné par CARITAS, le poids des enfants à la naissance peut atteindre 3,5 kg. A Kigali, les compléments alimentaires fournis par les Centres de Santé sont des fruits, du lapin et du poulet, au Centre de Rwaza du riz et des haricots et au centre de Kabuye, du lait, des légumes et de l'huile. Les autres centres enquêtés ne fournissent aucun complément si ce n'est de la bouillie de sorgho au centre de Cyanika (Karama).

Services rendus par les centres médicaux

En général, tous les centres médicaux visités assurent des consultations aux malades, leur fournissent des médicaments quand ils sont disponibles, hospitalisent et effectuent les transferts des cas graves. Les consultations sont de 120 FRW au Centre de Santé de CYANIKA, de 300 à 1000 FRW au Centre de Santé de RWAZA et de 1000 à 2000 FRW à l'hôpital de Rwamagana. Les seuls coûts déclarés de transfert à l'hôpital de KIGEME s'élèvent à 1500 FRW.

Les problèmes rencontrés dans tous les centres de santé sont le manque de moyens financiers, de médicaments, de personnel et de matériel

Automédication et médecine traditionnelle

Dans presque toutes les régions, les malades ont tendance à recourir aux médecins traditionnels ou à l'automédication avant de venir se faire soigner au centre de santé. Ceci est dû à la fois à l'ignorance et à la capacité limitée des paysans de payer les frais de consultations et de distribution des médicaments.

4. La planification familiale (PF)

La sensibilisation de la population à l'utilisation des méthodes de PF tant naturelles que modernes se fait dans tous les centres de santé. Cependant, les centres médicaux dirigés par les religieux ne distribuent pas de contraceptifs. De même, la plupart de ménages interviewés ne comprennent pas les méthodes de la PF, en particulier dans la commune de Rutonde.

Quant aux méthodes les plus utilisées, les données disponibles de l'hôpital de Rwamagana révèlent que l'injection (57,6%) est la plus populaire et viennent ensuite la pilule (28,3%) et le Dispositif Intra-Uterin (6,0%). Parmi toutes les femmes qui

pratiquent les méthodes modernes de contraception, 3,8% utilisent le Norplan. La vasectomie est pratiquée par 0,3% de ces ménages.

En rapport avec la PF, les problèmes des mères célibataires, des femmes répudiées et de leurs enfants ont été soulevés de la manière suivante :

- Les enfants nés des mères célibataires et des femmes répudiées sont le plus souvent victimes du Kwashiorkor;
- Le nombre d'enfants nés des mères célibataires augmente de façon inquiétante;
- Les hommes qui vivent en concubinage abandonnent souvent leurs enfants après séparation.

5. La nutrition

La majorité des ménages enquêtés vit en état de malnutrition chronique. Leur vie même est en danger : pendant la durée de l'enquête (25 jours), à Rutsiro, une vingtaine personnes sont mortes de faim. La commission nationale agricole a estimé que 57% des ménages agricoles (soit 94 % de la population rurale) sont incapables de dégager un surplus de leur production. Au moindre désordre climatique, cette situation se transforme en famine.

Dans toutes les régions visitées, les ménages pauvres vivent principalement de patates douces et d'autres féculents et aliments à base d'amidon dont la production diminue sans cesse. Il a été constaté que pour produire les 2100 calories indispensables par personne selon les rendements actuels, il faut disposer d'au moins 0,7 ha. Or, la majorité des ménages disposant de moins de 0,5 ha, ils sont donc exposés à une malnutrition chronique. De plus, les activités non agricoles sont rares et ne permettent pas de générer un revenu suffisant pour compenser le déficit alimentaire.

Les pathologies infectieuses et la malnutrition constituent un cercle vicieux, l'un entraînant l'autre et vice-versa. Au Rwanda, plus de 5,2 % des enfants de moins de 5 ans souffrent d'une malnutrition aiguë et plus de 52% souffrent d'une malnutrition chronique. La guerre a encore aggravé cette situation dans les préfectures de Ruhengeri et Byumba, mais il n'existe à l'heure actuelle aucunes statistiques à ce sujet.

La malnutrition se manifeste particulièrement dans les cas d'unions libres, de polygamie et de mères célibataires. En effet, dans les unions libres et la polygamie, les femmes se retrouvent chefs de ménage avec peu de ressources et peu de terres. La situation des mères célibataires est encore pire dans la mesure où elles sont souvent en conflit avec leurs familles dont elles ne reçoivent généralement aucune assistance. Ces femmes et leurs enfants forment donc le groupe le plus démuni parmi les pauvres en milieu rural et en milieu urbain.

En ce qui concerne le nombre de repas par jour, rares sont ceux qui mangent deux fois par jour. La grande majorité ne mange qu'une fois par jour et certains ne mangent parfois pas de toute la journée. Les aliments de base sont la patate douce et le manicc (cultures de soudure) car le haricot s'est raréfié. Les interdits alimentaires sont rares et l'enquête révèle que tout ce qui est disponible et accessible est consommé sauf certaines vieilles femmes qui ne prennent jamais la viande de porc, de chèvres et de lapins pour des raisons de croyances populaires.

Centres de Nutrition

Dans toutes les régions visitées sauf Mukingi, il y a des centres nutritionnels mais la plupart sont peu fréquentés. Autrefois, les femmes se rendaient aux centres nutritionnels pour recevoir de l'aide alimentaire plutôt qu'une formation. Actuellement, l'aide étant devenue rare, le taux de fréquentation a chuté. La plupart des centres s'occupent surtout des enfants qui souffrent de malnutrition et de ceux atteints de Kwashiorkor.

Le centre de Rwamagana semble le plus actif et suit l'état nutritionnel de 64% de la population enfantine cible. Les responsables font des visites à domicile pour sensibiliser les familles sur la vaccination, la nutrition et la planification familiale. Les autres centres enquêtés sont moins fréquentés ou le sont principalement pour les enfants à faible poids.

Problèmes rencontrés au niveau des centres de nutrition

A Kigali, selon les ménages enquêtés, les problèmes liés à la malnutrition sont dus à l'augmentation des nombre de femmes libres, d'orphelins et d'enfants de la rue, du manque de travail et des maladies contagieuses.

En milieu rural, l'arrêt des subventions de PAM et CARITAS dans deux communes (Karama et Rutonde) représente un problème majeur pour les centres. Parmi les autres problèmes, le manque de bois de chauffe à Ruhondo suite à l'abattage des arbres par les déplacés de guerre et le manque de locaux et l'ingérence de la commune dans la gestion du centre à Rutongo peuvent encore être cités. Parmi les solutions présentées, la demande d'assistance alimentaire, la distribution de parcelles de terre et d'engrais et la sensibilisation de la population à l'élevage de lapins, de poules et de rats comestibles semblent être les priorités.

6. Les infrastructures

Les résultats de l'enquête en ce qui concerne les infrastructures ne sont pas très détaillés, mais permettent toutefois de se faire une idée très générale de leur état.

Etat des routes

Les routes et ponts joignant Kigali à Gikongoro (Karama: PSTP-HIMO) et Cyahafi sont en général en bon état, mais celles des préfectures de Rutonde, Rutsiro, Citarama et Rutongo sont en mauvais état et mal entretenues.

Etat des marchés

A l'exception des marchés de Kigali (Nyarugenge et Rutongo) qui sont en bon état, couverts et bien approvisionnés, les marchés des autres préfectures enquêtées ont lieu une à deux fois par semaine et ne présentent que les produits de la région à des prix jugés exorbitants par les enquêtés. La préfecture de Ruhengeri (Ruhondo) qui n'a présentement qu'un seul centre de négoce a un projet de construction d'un marché public avec la commune de Rixensart (Belgique). Le marché moderne de Nyacyonga à Rutongo est actuellement hors fonctionnement car il abrite des déplacés de guerre

Approvisionnement en eau

Les communes de Ruhondo et Nyarugenge (préfectures de Kigali) ainsi que Karama (Gikongoro) utilisent l'eau du robinet et des fontaines et ce à des distances jugées raisonnables (entre 200 et 500 m). A Karama, chaque paysan participe à l'entretien en payant 100 FRW par mois? et ils ont formé un comité de gestion de trois paysans par robinet.

Les autres communes enquêtées utilisent en zone rurale l'eau des fontaines, des robinets, des marais, des lacs ou l'eau de ruissellement des ravines. Les distances à parcourir pour chercher l'eau sont souvent très grandes et l'eau n'est pas potable. Par exemple la commune de Rutonde a exprimé le désir d'avoir au moins un robinet par secteur.

7. Les projets de développement

Les projets de développement dans les communes enquêtées ont été examinés par les enquêteurs. Leurs objectifs, la population ciblée, le rôle de la population dans le projet et enfin l'acceptabilité du projet par les bénéficiaires ont été évalués dans la mesure du possible.

Le projet PADEC (Coopération Internationale des Pays-Bas) a de multiples objectifs concernant les coopératives dans le développement rural et vise principalement les ménages à revenu moyen. Dans la commune de Mukingi, les coopératives sont devenues très actives, mais dans la commune de Masango, où ce projet est également en cours, la population et les coopératives sont nettement moins motivées.

Par contre, le projet Kibungo II (Coopération belge) dans la commune de Rutonde dont les objectifs varient de la production de nouvelles cultures (soja et maïs), l'amélioration des techniques d'élevage (insémination artificielle) et de la construction d'infrastructures aurait 80% de ses objectifs atteints. Cependant, les résultats concernant l'acceptabilité du projet indique que bien que les femmes soient actives dans la culture du soja, elles seraient peu motivées par le projet. Et la population elle-même, selon les enquêteurs n'aurait pas compris le rôle du projet et seraient peu intéressés par les nouvelles techniques agricoles.

Le projet Bornefonden (Coopération du Danemark) dans la commune de Karama est destiné à réduire la pauvreté de la région et s'occupe de 600 ménages démunis. Les actions de ce projet portent sur des subventions pour les frais de scolarité, l'aide à l'auto-construction, l'élevage et la distribution de produits alimentaires et de soins de santé aux enfants. De plus, un programme d'alphabétisation et de planning familial complète ces activités. L'enquête souligne le fait que les femmes sont particulièrement actives dans ce projet tandis que les hommes préfèrent s'occuper de politique. Certains problèmes subsistent cependant qui sont liés au découragement des ménages devant l'énormité de la tâche, à leur ignorance parfois et au manque de collaboration avec les centres de nutrition.

Enfin, le projet SOPRORIZ financé par la Coopération Rwando-Chinoise a été très apprécié par les bénéficiaires pour les avantages qu'ils ont retiré de la culture du riz. Cependant, les agriculteurs ont du mal à écouler leur riz à cause de la concurrence du riz importé.

Les derniers projets rapportés par les enquêteurs sont des projets qui s'autofinancent. L'un est un projet de développement agricole et l'autre de transformation de cassérite. Les activités de ces projets se sont ralenties considérablement en partie à cause du manque de ressources.

C. CONCLUSION

A la lecture des résultats de l'enquête, l'on peut noter que, parmi les solutions envisagées par les ménages enquêtés, aucun n'a mentionné la possibilité ou l'option d'émigrer vers la ville et aucun n'a fait référence aux limitations administratives imposées par l'Etat à l'exode rural. Cette constatation est assez surprenante quand on se réfère aux théories des déterminants économiques des migrations : l'effet "push" incite vers l'exode lorsque les moyens de survie dans le lieu d'origine deviennent précaires même si l'effet "pull" (opportunités économiques dans le lieu de destination) n'est pas entièrement démontré. Ces théories, valables pour beaucoup de pays du Sud du Sahara, démontrent aussi que même si les émigrants savent que leurs chances de trouver du travail sont

minimes, la disparité entre les revenus urbains et ruraux est telle qu'ils la tentent quand même.

Il serait donc intéressant à cet égard de mesurer l'ampleur des transferts du milieu urbain vers le milieu rural. Dans l'hypothèse la plus plausible de transferts minimes, l'on peut comprendre que l'exode rural est une solution à laquelle les agriculteurs ne donnent pas de suite ou n'ont peut-être même pas envisagée. Mais si les transferts ne sont pas négligeables, une série de questions se pose, et en particulier, pourquoi, malgré la politique gouvernementale, aucun effort n'est fait pour infléchir cette politique ou pour émigrer soit dans des villes secondaires ou encore à l'étranger.

Un autre facteur qui peut-être n'est pas entièrement indépendant de ce qui précède est que la plupart des ménages s'en remettent à l'Etat pour la solution de leurs problèmes. Il y a eu peu d'initiatives personnelles ou de suggestions relatives au développement communautaire. Cela indique que des efforts importants devront se concentrer sur l'encadrement et l'assistance au développement communautaire incluant une formation pour la participation active de la part des bénéficiaires dans l'initiation, la préparation et la mise en place des projets de développement.

Dans le domaine agricole, l'enquête a noté une demande considérable, désespérée même dans la mesure où il s'agit de survie, d'extension des terre cultivables, d'encadrement efficace avec moniteurs agricoles compétents, d'approvisionnement en intrants et d'accès au crédit agricole. Pour répondre à cette demande, parmi les voies possibles, l'applicabilité de l'expérience du Burundi peut être explorée. Cette méthode participative de vulgarisation intégrant la recherche et le développement et encourageant la collaboration entre paysans et services agricoles a eu tellement de succès qu'elle va être développée à l'échelle nationale.

Il ressort encore de l'enquête la possibilité de développer la culture du soja de façon généralisée. Son rendement est élevé économiquement (77,9% de rendement réel par rapport au rendement théorique dans la commune de Runyinya) et son apport nutritionnel excellent .

Dans le domaine de l'éducation, de grands efforts devraient être consentis pour améliorer l'enseignement primaire, motiver parents et enfants et les convaincre du bien fondé et de l'utilité de l'instruction. Pour arriver à des résultats tangibles, les barrières suivantes devraient être surmontées : frais scolaires élevés (minerval, fournitures et uniformes), malnutrition et morbidité des enfants, matériel scolaire inadéquat et programme non adapté aux besoins et capacités des enfants. Il convient encore de noter ici qu'aucun des ménages n'a émis de suggestions concernant l'amélioration de l'enseignement.

L'insuffisance de médecins, de médicaments, de moyens de transfert des malades et même l'insuffisance d'eau dans certains cas ne font qu'aggraver la situation critique de

la santé au Rwanda. Les besoins sont immenses et la lutte contre la malaria, le SIDA et le kwashiorkor pour ne citer que ces maladies exigerait la mise en place de vastes programmes. Les conséquences des mouvements de déplacés et de réfugiés se font aussi sentir dans le domaine de la santé et devaient être pris en considération dans l'élaboration de ces programmes.

Alors que le niveau élevé de la croissance démographique est l'une des causes principales des problèmes agricoles et en particulier du morcellement et de l'appauvrissement des terres, les progrès réalisés dans la planification familiale restent nettement insuffisants. Tandis que la sensibilisation, l'information et la communication en la matière semblent être répandues dans tout le pays, la distribution des moyens contraceptifs modernes est interdite dans les centres de santé tenus par des organisations religieuses. L'enquête révèle aussi que les populations de certaines communes s'opposent à la contraception soit pour des raisons religieuses ou culturelles soit pour des raisons politiques. Par conséquent, les actions de sensibilisation et d'information réalisées jusqu'à ce jour par l'ONAPO devraient être réexaminées et reconduites avec un personnel qualifié dans les communes où l'accès aux contraceptifs reste difficile tandis que les autres communes continueraient à bénéficier de ces services.

Etant donné l'état alarmant de la nutrition spécialement parmi les groupes les plus défavorisés de femmes et d'enfants, il est impératif d'examiner la possibilité d'inclure automatiquement dans les programmes existants et dans les programmes mentionnés ci-dessus les composantes destinées à procurer de l'aide alimentaire aux plus démunis. Et, étant donné que la distribution d'aide alimentaire varie largement d'une commune à l'autre, il est essentiel de mettre en oeuvre une action collective assurant une distribution égale et suffisante dans tout le pays.

En ce qui concerne les projets de développement en cours dans les régions enquêtées, il est difficile de dégager une conclusion sur leurs activités. Ils présentent tous des problèmes sérieux et même s'ils atteignent une grande partie de leurs objectifs, ils ne semblent pas bien acceptés par la population à l'exception de SOPRORIZ. Ce dernier est un projet axé sur la culture du riz; il est bien défini, n'utilise pas de main-d'oeuvre féminine, mais il a été très bien accepté par les bénéficiaires. Tandis que dans celui de Bornefonden dont les objectifs sont la lutte contre la pauvreté dans ses multiples aspects, les femmes sont les plus actives, mais le projet rencontre beaucoup de difficultés dans la réalisation de ses objectifs.

AGRICULTURE ET ELEVAGE

1. Commune de Karama, Préfecture de Gikongoro		
Type de cultures, Superficie et Elevage	**Problèmes rencontrés**	**Solutions proposées**
Patate douce, soja *Haricot + sorgho* Sup.:les 2/3 ont entre 20 et *60 ares et 1/3 ont plus de 1* ha. **Elevage** porc, chèvre, poules, vache *(1 sur 12) La moitié des* ménages est propriétaire, le *reste est gardien et partage* les profits.	**Agriculture** Manque d'engrais, pesticides, Monagri, vivres et terres Etat de pauvreté absolue, les besoins de base ne peuvent plus être satisfaits; Les indigents *visités ne sont même* plus capables d'adopter une stratégie pour la survie. *Ils n'ont pas de biens* mobiliers ou immobiliers à louer pour se procurer un peu de revenu. **Elevage** Vente d'animaux: 7 ménages ont déclaré qu'ils vendent leurs animaux pour deux motifs majeurs : trouver de la nourriture et acheter des vêtements et satisfaire d'autres besoins. Un ménage a déclaré qu'il mange ses porcs lorsqu'ils sont malades. Pâturages : 9 ménages ont déclaré ne pas avoir de pâturages; 1 seul déclare posséder un pâturage suffisant et se plaint du fait qu'il n'a pas beaucoup d'animaux; le dernier possède un petit lopin de pâturage. Certains soins vétérinaires sont fournis grâce au concours du ccf Bornefonden, mais il n'y a pas de distribution de médicaments.	**Agriculture** Il n'y a pas véritablement de solutions proposées et les besoins sont immenses : -Engrais chimiques, semences sélectionnées, pesticides; des demandes ont même été faites pour un crédit en nature pour les engrais et les semences sélectionnées -Outils (houe, etc.) -Monagris compétents -Aide alimentaire -Terres à louer **Elevage** 11 ménages sur 12 souhaitent avoir d'autres animaux pour le petit bétail ou la volaille car, estiment-ils, ils ne demandent pas beaucoup d'espace et sont donc plus faciles à élever. Parmi les petits animaux souhaités, il y a notamment les *cavias, les lapins,* les chèvres, les moutons et bien sûr la volaille. Ils souhaitent également qu'il y ait des facilités pour vacciner et soigner leurs animaux.

2. Commune de Mukingi, Préfecture de Gitarama		
Type de cultures, Superficie et Elevage	**Problèmes rencontrés**	**Solutions proposées**
Patate douce, manioc, haricot, soja, colocase, fruit Sup.: 2 ménages ont moins de 10 ares, 5 ont entre 10 et 40 ares, et 4 entre 40 et 75 ares. **Elevage** 3 ménages sont propriétaires d'une vache, les autres ménages ont chacun un animal (chèvre, porc et lapin).	Exploitations trop petites, pauvres et surexploitées; manque d'engrais Ils gagnent un peu d'argent grâce à la sous-traitance (main d'oeuvre agricole) mais leur état de santé fait qu'ils ne sont pas rentables. Les encadreurs agricoles ne sont pas d'une grande aide car aucun ne les contacte et eux-mêmes n'osent s'adresser aux techniciens. Il n'y a pas de système de crédit agricole car ils ne peuvent pas fournir de garanties. Comme stratégie de survie, les hommes deviennent des ouvriers du secteur agricole. **Elevage** pas de pâturages, les sous-produits sont très peu rentables et la vente se fait rarement et seulement pour acheter des produits indispensables.	non déclaré **Elevage** non déclaré
3. Commune de Nyarugenge, Préfecture de Kigali		
Type de cultures, Superficie et Elevage	**Problèmes rencontrés**	**Solutions proposées**
Patate douce + manioc Sup.: n/d **Pas d'élevage** manque de pâturage	Terre cultivable rare car milieu urbain Vivent d'activités salariées non spécifiées par l'enquête ou de petit commerce. Les familles les plus démunies vivent de l'aide de Caritas ou de certains bienfaiteurs. **Elevage** Manque de moyens pour pratiquer l'élevage	non déclaré

4. Commune de Ruhondo, Préfecture de Ruhengeri		
Type de cultures, Superficie et Elevage	**Problèmes rencontrés**	**Solutions proposées**
Haricot + patate douce uniquement Sup.: entre 0,2 et 1 ha. **Elevage** vaches, moutons chèvres la moitié des ménages n'a pas de bétail, 4 ont 1 vache et 3 ont une chèvre ou 1 mouton	Toute la production est consommée; Presque tous les ménages utilisent les engrais organiques (compost). Les engrais chimiques et les pesticides sont connus mais ne sont pas utilisés par manque de moyens. Très peu de ménages reçoivent les visites des moniteurs agricoles et ces visites ne leur apportent rien quant à l'amélioration des techniques culturales. Les disettes se sont installées dans la région, et la famine a été aggravée par la guerre et le phénomène des déplacés de guerre dans la région. Il n'y a pas de stratégies de survie bien définies en cas de disette ou de période de soudure, les ménages n'ayant pas d'autres sources de revenu que l'agriculture. Aucun ménage n'a reçu de crédit agricole. Terres infertiles; Présence des déplacés aggrave la situation **Elevage** Manque de pâturages	Pour améliorer les revenus agricoles, et assurer la sécurité alimentaire, la plupart souhaite : -l'utilisation des intrants agricoles (engrais chimiques, pesticides, ...) afin d'augmenter la production; -recevoir les conseils des agronomes et animateurs agricoles qui les négligent. Pouvoir combiner l'élevage à l'agriculture et utiliser le crédit bétail (porc); -recevoir une aide alimentaire; -recevoir un crédit agricole; -la mise en valeur du marais de Mukinga serait d'une grande importance. **Elevage** -un peu plus d'espace pour les pâturages et pour la construction des étables et des poulaillers. -des aliments pour le bétail et pour la volaille.

5. Commune de Runyinya, Préfecture de Butare		
Type de cultures, Superficie et Elevage	**Problèmes rencontrés**	**Solutions proposées**
patate douce, manioc, sorgho, haricot Sup.: n/d 1/3 des ménages estime avoir une superficie suffisante si la terre était fertile; les autres estiment avoir une superficie insuffisante pour leurs besoins.	Terre infertile, collines couvertes d'eragrostis, terre acide (Ph=5); manque d'engrais, de fumure, de chaux, de pesticides et de Monagris capables. Tous savent que les services de vulgarisation et de distribution d'intrants existent. Certains ont même appris à les utiliser mais cela n'a servi à rien car ils ne peuvent pas l'utiliser chez eux faute de moyens. En conséquence, la production est insuffisante et entièrement consommée. Il n'y a ni vente ni de stock. Pour survivre, certains membres de ménages travaillent comme salariés agricole chez les paysans plus nantis. Ces salariés agricoles sont souvent les chefs de ménages.	-Développer la culture des patates et du manioc -Pratiquer l'irrigation -Cultiver tous les marais -Demander de l'aide aux départements ministériels -Avoir recours au PNAS et à GCP/INT/542/ITA-FAO -Trouver des sources pour des intrants et pesticides

6. Commune de Rutonde, Préfecture de Rwamagana		
Type de cultures, Superficie et Elevage	**Problèmes rencontrés**	**Solutions proposées**
Patate douce, haricot, banane, sorgho, manioc Sup.: n/d	Exploitations trop petites, manque de Monagris, engrais chimiques et pesticides; peu de gens cependant connaissent l'utilisation des engrais organiques (3 ménages sur 11). Presque tous les ménages consomment toute leur production : pas de stockage. Les cultures à meilleur rendement sont la banane et la haricot. Il n'y a presque pas de services de vulgarisation agricole (exemple: un ménage sur onze a eu recours à un vulgarisateur il y a 3 ans). Les disettes sont récurrentes et elles sont loin de disparaître du fait que la surface cultivable devient de plus en plus étroite alors que l'agriculture est l'activité principale de la population. Trois ménages sur onze adoptent des stratégies de survie. Deux ménages s'occupent du commerce et un autre a des membres qui sont des salariés agricoles.	- La population souhaite que l'Etat leur remette 50 ha d'une coopérative des riches éleveurs qui occupe plus de 1/3 de la superficie cultivable du Secteur NSINDA - Pour améliorer le revenu agricole, ils ont suggéré que les agronomes encadrent correctement la population pour que les intrants agricoles soient accessibles à tout le monde, qu'on aménage de nouveaux espaces cultivables et qu'on leur donne des semences sélectionnées. Aucun ménage parmi les onze interrogés ne connaît un système de crédit.
Elevage Chèvres, poules pour seulement la moitié des ménages et 2 sur 11 possèdent des vaches	**Elevage** Pâturages inexistants et élevage peu rentable	**Elevage** -Instruire les gens sur la meilleure façon de pratiquer l'élevage du petit bétail et de la volaille sans pâturages. -Disponibilité et accessibilité de l'alimentation du bétail

7. Commune de Rutongo, Préfecture de Kigali		
Type de cultures, Superficie et Elevage	**Problèmes rencontrés**	**Solutions proposées**
Patate douce, haricot, banane, manioc Cultures marginales : riz, petit pois, arachide, soja Sup.: n/d **Elevage** caprins, poules: 1 à 2 bêtes par ménages; la moitié n'en a que la garde et reçoit en échange le premier né.	Exploitations agricoles trop exigues; Il y a un cas où 2 ménages se partagent une même parcelle par rotation (une fois sur 2 ans). Tous les ménages exploitent toute la superficie cultivable. La culture du haricot donne un rendement satisfaisant comme l'affirme 8 ménages sur 12. Tous les ménages utilisent du compost. Un ménage utilise des pesticides pour la culture du riz. Ces pesticides sont fournies à crédit et à un prix raisonnable par la riziculture de Kabuye (SOPRORIZ). Un autre ménage a utilisé des pesticides pour les plants de patates douces. Ces pesticides ont été vulgarisés dans le cadre du projet de développement rural intégré de MURAMBI (DRIM). Leur coût est estimé hors de portée des ménages (1/2 kg = 100 frs). Les services communaux d'encadrement agricole existent mais n'approchent pas les paysans. Ceux-ci déplorent l'inaccessibilité de ces services. Un ménage avoue que lorsque les encadreurs daignent aller chez le paysan, c'est pour s'occuper de la culture de café (culture de rente, source de devises). Les encadreurs agricoles du projet DRIM sont plus proches des agriculteurs. Certains revenus sont aussi obtenus par la vente de fruits (mangues, bananes) de charbon de bois et de produits d'artisanat. Huit ménages sur 12 survivent grâce au salariat agricole. **Elevage** Pâturages quasi-inexistant". Absence de vaccinations pour caprins Coûts élevés des médicaments (150 FRW pour 1 comprimé de vermifuge).	-Besoins en engrais, pesticides et semences sélectionnées. -Encadrement plus adéquat par les moniteurs agricoles. -Extension de terres arables par l'utilisation des parcelles fertiles sous-exploitées par leurs actuels propriétaires (qui ne sont ni agriculteurs, ni de la région). -Collaboration accrue avec le projet de développement DRIM installé dans la région. **Elevage** -l'élevage en stabulation; -la construction de chèvrerie; -le recours aux soins vétérinaires en cas de maladie des bêtes; -l'encadrement et le conseil des vétérinaires; -une alimentation améliorée pour les chèvres; -l'aménagement de pâturages; -un ménage suggère la diffusion de races sélectionnées.

8. Commune de Rutsiro, Préfecture de Kibuye		
Type de cultures, Superficie et Elevage	**Problèmes rencontrés**	**Solutions proposées**
Patate douce, haricot, manioc, banane Sup.: 3 ménages sur 11 ont plus d'un ha.	Exploitations trop petites et infertiles en relief accidenté En plus de leur parcelle, beaucoup recourent à la location des terres dans les régions de haute altitude (8 ménages). Aucune culture ne donne un rendement satisfaisant. Les besoins en fumure sont exprimés par tous mais l'utilisation est nulle. Personne n'utilise les engrais chimiques et les semences séléctionnées. La production est insuffisante et il n'y a ni vente ni stockage des produits agricoles. La plupart des gens survivent grâce au salariat agricole. Le salaire journalier est de 70 frw. **Elevage**	-Développement du petit élevage pour le fumure -leur trouver des engrais chimiques -leur trouver de l'argent pour louer des terres
Elevage très peu d'élevage: 2 ménages n'ont pas d'animaux, 4 ont une vache et 2 autres sont gardiens d'une chèvre et d'un porc.	Pas de pâturages Peu de sous-produits d'élevage	**Elevage** non déclaré

+ cultures pratiquées en assolement

Nombre d'enfants inscrits à l'école primaire ou au CERAI	Taux d'abandons	Coûts	Participation des parents
Karama, Gikongoro			
Niveau d'alphabétisation: 7 sur 12 chefs de ménages sont illetrés Ecole primaire : 6 ménages sur 12 CERAI: un enfant CCDFP: 2 enfants	Les enfants des autres 7 ménages ont abandonné; causes: maladie, faiblesse des résultats, mauvais traitement des enseignants.	Certains ménages bénéficient de l'appui du projet CCF Bornefonden (4) pour le paiement du minerval, des uniformes et des fournitures scolaires, d'autres (4 ménages) ont des difficultés de payer le minerval qui s'élève à 300 fr par enfant et leurs enfants ne portent pas l'uniforme scolaire faute de trouver les 1.000 frs pour l'achat tandis que deux d'entre eux parviennent difficilement à payer quelques fournitures scolaires. Une famille est déclarée indigente et ne paie pas les frais scolaires.	Sept familles sur 12 participent aux réunions organisées par l'école et visitent de temps en temps leurs enfants à l'école (2 d'entre eux). Une famille déclare qu'elle n'a pas le temps de participer à la vie de l'école.
Nyarugenge - Kigali			
Niveau d'alphabétisation: la moitié des ménages ne savent ni lire ni écrire Ecole primaire : 15 enfants des 12 ménages enquêtés CERAI: un enfant CCDFP: 2 enfants	Il y a des abandons mais le nombre n'est pas mentionné; causes: frais scolaires trop élevés.	Quelques ménages les plus indigents bénéficient de l'aide de Caritas ou de la gratuité de l'enseignement. Parmi les ménages enquêtés, 3 seulement arrivent à prendre en charge les frais scolaires. A titre d'exemple, les 3 ménages prenant en charge la scolarité de leurs enfants paient pour le minerval 900, 1500 et 6000 FRW, pour l'uniforme 1500, 1200 et 4500 FRW et pour les fournitures scolaires 800, 210 et 1600 FRW.	La participation des ménages dans la vie de l'école est presque nulle. Un seul ménage parmi les douze avoue y participer. Ils disent que l'école est très utile pour l'avenir de leurs enfants mais que le problème majeur qui reste est celui des frais scolaires.

Rutongo - Kigali			
Niveau d'alphabétisation: 1/3 des ménages savent lire et écrire Ecole primaire : 7 parmi les ménages enquêtés ont leurs enfants à l'école CCDFP: 2 CM	Les 2 CM qui ont fréquenté le CCDFP n'y ont rien appris et ont abandonné; causes: détérioration des infrastructures. Il y a des cas d'abandon à l'école primaire mais le nombre n'est pas disponible; causes: manque de moyens, maladies, difficultés scolaires ou redoublements multiples.	Le manque de moyens financiers est à l'origine de la non scolarisation des enfants dans ♪ ménages et de l'abandon précoce de la scolarité de certains enfants dans la quasi totalité de ménages enquêtés. Les coûts scolaires sont les suivants : minerval: 300 FRW, uniforme fille: 350 à 600 FRW, uniforme garçon: 600 à 800 FRW, fournitures scolaires: 300 à 1.000 Frs et cotisations diverses: 100 à 350 FRW.	Deux ménages sur 12 avouent ne pas participer à la vie de l'école. Ce sont 2 ménages où le CM est analphabète. Les autres ménages participent dans la vie de l'école en assistant aux réunions des parents, en s'informant sur la scolarité de leurs enfants, en contribuant aux travaux manuels de réfection des bâtiments scolaires.

Rutonde - Rwamagana			
Niveau d'alphabétisation 6 sur 11 ménages savent lire et écrire Ecole primaire 7 ménages envoient tous leurs enfants à l'école, les autres 5 n'en envoient que quelques uns (pas de chiffres disponibles)	Pas de chiffres disponibles, mais beaucoup d'abandons; causes: pas les moyens de payer les frais de scolarité	Les parents ne savent pas évaluer avec exactitude les coûts scolaires de leur enfants. Ce qu'ils peuvent savoir c'est seulement le minerval car celui-ci est fixé en général par l'Etat.	Les ménages interrogés participent rarement à la vie de l'école. Ils payent le minerval mais vont très rarement dans les réunions des parents. Les parents qui savent lire et écrire suivent les progrès scolaires de leurs enfants (répétitions des leçons de calcul, lecture du français et du kinyarwanda). Certains parents participent aux frais d'entretien des bâtiments scolaires.

Ruhondo - Ruhengeri			
Niveau d'alphabétisation 7 sur 12 ménages savent lire et écrire Ecole primaire 10 ménages envoient leurs enfants à l'école: 56	Le nombre d'abandons par rapport au nombre des enfants scolarisés est significatif dans 6 ménages. La totalité d'enfants scolarisés ont dû abandonner l'école dans 4 ménages, et près de la moitié dans 3 cas. Un seul ménage avoue n'avoir jamais envoyé un enfant à l'école. causes: pas les moyens de payer les frais de scolarité	minerval 300 FRW par an, et uniforme 800 à 850 FRW	très limitée
Mukingi - Gitarama			
Niveau d'alphabétisation Sur les 11 ménages interrogés, 6 hommes et 5 femmes savent lire et écrire Ecole primaire Sur les 11 ménages interrogés, 7 ont des 35 enfants an âge de scolarité parmi lesquels 22 ont fréquenté l'école, 7 ont abandonné et 11 sont à l'école (au moment de l'enquête).	7 abandons sur 35 enfants. Causes: d'après les parents: les abandons dûs à la paresse des enfants, faiblesse à l'école qui décourage l'enfant et pauvreté des parents.	Les frais de scolarité minimum s'élèvent à 300 FRW par an. 5 ménages achètent les uniformes scolaires, d'autres laissent les enfants porter n'importe quoi. L'école n'est plus aussi exigeante. Les fournitures scolaires varient suivant la classe et les finances du ménages: 5 ménages paient entre 300 et 1000 FRW par an et par enfant, 3 ménages entre 100 à 300 et un ménage 500 FRW	La participation à la vie de l'école se manifeste par leur présence aux réunions (rares) des parents sur convocation des enseignants; par le suivi des progrès des enfants selon la sévérité des parents et par la participation aux travaux communautaires de constructions des bâtiments scolaires.

Rutsiro - Kibuye			
Niveau d'alphabétisation Sur les 12 ménages enquêtés, seulement 2 hommes CM et 2 femmes CM savent lire et écrire Ecole primaire Sur les 43 enfants an âge de scolarité, 31 ont été scolarisés, 2 ont abandonné et 18 fréquentaient l'école au moment de l'enquête.	Sur les 33 enfants scolarisés, 2 ont abandonné Causes manque de fournitures scolaires	n/d	n/d

Runyinya - Butare			
Niveau d'alphabétisation Sur les 10 ménages enquêtés, seulement 2 hommes CM et 3 femmes CM savent lire et écrire Ecole primaire Sur les 20 enfants an âge de scolarité, 8 ont été scolarisés parmi lesquels 2 ont abandonné.	Sur les 8 enfants scolarisés, 2 ont abandonné Causes pauvreté, maladie, paresse ou manque d'intérêt.	Un seul ménage a déclaré payer le minerval, les fournitures scolaires et les uniformes; les montants n'ont pas été donnés. Les autres ménages laissent les enfants sans fournitures scolaires ni uniforme. Le minerval est difficilement payé si non pas du tout. Les enseignants ne renvoient plus les enfants qui n'ont pas payé le minerval ou qui ne portent pas d'uniforme.	Les ménages participent à la vie scolaire uniquement par les travaux communautaires de construction de bâtiments scolaires.

SANTE ET PLANIFICATION FAMILIALE

Centre Médical	Maladies Mortelles	PLANIFICATION FAMILIALE		PROBLEMES RENCONTRES	SOLUTIONS ET SUGGESTIONS
		Méthode utilisée	Contraceptifs distribués		
Nyiranuma	Paludisme, SIDA	Sensibilisation aux méthodes modernes	Type: n/d Coût: gratuit	Beaucoup de malades et peu d'agents de santé	Demande que les autorités compétentes puissent augmenter le personnel Médical
Rutsiro	Paludisme, famine	n/d	n/d	PF: Les ménages enquêtés ne suivent pas les conseils de l'ONAPO car Dieu seul est maître de la vie qu'il dispense selon son bon vouloir. Polygamie élevée (jusqu'à 4 femmes). Beaucoup mettent au monde une nombreuse progéniture pour qu'il y ait des survivants	Personnel suffisant Sensibiliser la population Propreté dans des restaurants et cabarets.
Cyanika	Adultes: Paludisme Enfants: Kwashior-kor, pneumonie, rougeole.	Sensibilisation aux méthodes de l'ONAPO et aux méthodes naturelles.	Distribution interdite: seule la méthode naturelle est admise par le Centre de Santé	L'aide en médicaments en provenance de la Belgique est arrêtée. Pas de médecin (le Dr belge est parti avec tout l'équipement), pas de pharmacie; pas de moyens financiers pour payer le personnel et manque de moyens pour le suivi des femmes utilisant les méthodes modernes de contraception car interdites au Centre de Santé.	Prévoit de demander à un paysan 300 fr et le soigner toute une année; Demander à l'Etat d'envoyer un médecin et recourt à la commune belge de Krainem pour l'obtention d'un médecin et d'un C.S.
Karama	Paludisme, méningite, dysenterie	Sensibilisation aux méthodes naturelles	Distribution interdite	Manque de médicaments et personnel insuffisamment formé. PF: Le nombre des mères-célibataires augmente considérablement: dans certains ménages on trouve plus de 3 mères-célibataires; les avortements provoqués sont très fréquents; beaucoup d'unions libres; les femmes et filles se prostituent pour une bouchée de pain; Les méthodes contraceptives sont mal acceptées à cause de la mentalité nataliste fortement ancrée chez les rwandais;	- Demande des éléments de motivation (monétaires entre autres) pour le personnel oeuvrant en milieu rural
Rwamagana	Paludisme, broncho-pneumonie, SIDA, méningite	Toutes les méthodes	-Injection -Pilule -DIU	-Manque de sensibilisation de la population par les autorités locales -Instabilité suite à la guerre qui entraîne nombre élevé de malades indigents. PF: Les méthodes de PF ne sont pas bien comprises; les enfants nés de mères célibataires et de femmes répudiées sont souvent victimes du kwashiorkor.	-Sensibilisation de la population par les institutions religieuses et par les responsables des établissements scolaires.
Rwaza	Paludisme	Sensibilisation aux méthodes modernes	Le Centre de Santé ne distribue pas de contraceptifs	-Manque de locaux -Manque de recettes pour achat de médicaments	-Repas complet aux malades -Encadrement à l'hygiène -Bonne utilisation des latrines -Demande de subventions pour les médicaments -Demande que la population suive les instructions données par les agents de santé.
Mukingi	Paludisme	Sensibilisation faite une fois par semaine; méthode ONAPO	Type:Injection, Pilule, Norplan Coût: gratuit	Les locaux du C.S. sont étroits et vieux; Pas de médecin ni assistant médical; Manque d'eau; Manque d'ambulance PF: Problème accru de concubinage; les femmes n'utilisent pas les méthodes modernes de PF car, selon elles, ces méthodes entraînent des maux de tête et l'obésité; les hommes se refusent à utiliser les préservatifs.	-Demande à l'Etat de trouver une solution à leurs problèmes.
Kabuye	Paludisme, choléra	-Sensibilisation au Centre de Santé -Visite des familles -Affichage dans les grands centres.	Type: Injection, Pilule Coût: gratuit	Manque de personnel, de matériel et d'ambulance	-Demande aux autorités compétentes de trouver de solutions à leurs problèmes

La Nutrtion

CENTRE NUTRITIONNEL	PROBLÈME RENCONTRES	SUGGESTIONS ET SOLUTIONS PROPOSÉES
NYIRANUMA	Ils sont dus à l'augmentation des femmes libres, des enfants de la rue, du manque de travail et des maladies contagieuses.	L'Etat devrait expulser de la ville tous les vagabonds sans emploi.
RUTSIRO	Une population de nature paresseuse qui ne cultive pas mais plus tôt qui est toujours ivre, qui vend la terre et le fruit est envoyé au bar. Le peu de terre qui reste est < à 10 ares par ménage	non déclaré
CYANIKA	-Pas moyen d'hospitalisation des victimes du Kwashiorkor. -Manque de subventions -PAN aide seulement les enfants de moins de 5 ans alors qu'il y a ceux qui ont le Kwashiorkor a 8 ans. -PAM et Caritas ont arrêté leur subventions.	-Ils donnent aux femmes pauvres des parcelles et des engrais. - Sensibiliser la population à l'élevage de lapins, de poules et de rats comestibles (CAVIA).
KARAMA	non déclaré	non déclaré
RWAMAGANA	-En janvier 1993, quand le PAM a coupé ses aides, le nombre de femmes a chuté; ces femmes fréquentent le CN non pas pour apprendre mais pour avoir de l'aide alimentaire.	-Sensibilisation profonde de la population. -Demande d'une assistance alimentaire.
RWAZA	-Manque de bois de chauffe suite à l'abattage des arbres par les déplacés de guerre. -Beaucoup de déplacés de guerre	-Avoir une nutrition plus ou moins complète et variée. -Avoir une propreté dans la nutrition. -Demande à l'Etat de fournir des parcelles aux pauvres pour diversifier les cultures.
MUKINGI	non déclaré	-Demande de trouver une solution permettant d'avoir de bonnes récoltes. -Avoir des encadreurs qualifiés
KABUYE	-Manque de locaux -Ingérence de la commune dans la gestion du Centre.	-Voudraient avoir assez de matériel. -Ils viennent d'achever la construction des locaux du Centre Nutritionnel

PROJETS DE DEVELOPPEMENT

ONG et projets	Objectifs	Actions réalisées par le projet	Actions acceptées	Rôle de la femme
PADEC (Mukingi) financé par la Coopération Internationale des Pays-Bas	-Assurer le développement socio-économique -Augmenter la capacité de la préparation et réalisation des plans de développement -Augmenter la capacité de gestion des projets de développement en milieu rural. Population visée: 20 coopératives de 10 à 20 personnes de revenu moyen Rôle de la population dans le projet : regroupement des coopératives	-Crédit au petit élevage pour paysans -Terrasses modernes -Utilisation de l'engrais organique -Petit commerce -Pisciculture -Cultures maraîchères -Aider la population à épargner dans la banque populaire -Vannerie -Gestion et chercher les marchés	Le projet vient de commencer et le programme est en cours d'exécution.	Coopératives de vannerie et de commerce -Les femmes apprennent comment se chercher un marché.
Kibungo II (Rutonde) financé par la Coopération belge	Développement et augmentation du revenu Population visée : En théorie: toute la population; en pratique: on ne travaille qu'avec les groupes de contact, autorités locales et monagris. On travaille avec 67 groupes et 20 paysans. Rôle de la population dans le projet :n/d	* Production de nouvelles cultures et nouvelles variétés et techniques culturales: -utilisation étable -insémination artificielle -la'culture du soja et du maïs * Foresterie : beaucoup de nouvelles variétés d'arbres * infrastructures : Le projet a construit 3 ponts, des routes, 3 dispensaires vétérinaires, 1 abattoir moderne, 1 couloir des vaches. Bref, 80% des objectifs ont été atteints	La population n'a pas encore compris le rôle du projet	Les femmes sont peu motivées par les activités du projet. -le projet a pris soin d'avoir beaucoup de femmes dans le nouveau programme (culture du soja
Duterimbere; Centre Iwacu; Kora; ARTC; Bornefonden; Ardi (Nyarugenge)	S'intéresser au développement de la population prise individuellement ou en coopératives; Secteur Crédit et soutien à l'entreprenariat. Aspect assistantial. Population visée n/d Rôle de la population dans le projet :n/d	n/d	n/d	n/d
Bornefonden (Karama), financé par Bornefonden-Danemark	Aider les enfants pauvres et leurs familles; 600 ménages en tout 3.500 personnes. Rôle de la population dans le projet: les paysans ont un comité de gestion dont les membres sont sélectionnés parmi les paysans assistés.	*Enseignement : -Ils ont payé les frais de scolarité de 300 élèves soit 300 x 300 fr = 90.000 FR -Pour l'année 93/94, on compte augmenter le nombre à 500 élèves. * Construction : - Plus de 150 maisons d'une valeur de 50000 frw chacune soit 7,5 mios de frw. * Elevage : -Distribution de 600 chèvres et porcs. * En matière de santé: Fait soigner les enfants et leur familles. *Lutte contre l'ignorance des paysans: -Viennent de mettre en place 14 animateurs soit au moins 1 animateur par cellule dans les 2 secteurs d'activité Kiraro et Muganza. - Donnent chaque année un petit stimulant sous forme monétaire aux animateurs montrant 10 personnes sachant lire et écrire. -Ont un programme de sensibiliser la population en matière du planning familial	Les hommes sont moins actifs; ils sont plutôt attirés par les activités politiques	Les femmes sont très actives
PSTP-HIMO (Karama)	Donner de l'emploi a une main d'oeuvre non specialisee et pauvre	Construction de la route de 25 km reliant Commune Nyamagabe et Karambo en passant par KARAMA.	Le projet a construit une route mais la population n'accepte pas ses actions car les objectifs fixés n'ont pas été respectés.	n/d

ONG et projets	Objectifs	Actions réalisées par le projet	Actions acceptées	Rôle de la femme
SOPRORIZ (Rutongo) financé par la Coopération Rwando-Chinoise	-Apprendre aux paysans la culture du riz en leur fournissant des encadreurs et des agronomes; -Acheter le riz de ces paysans et leur faciliter le stockage. -Transformation et commercialisation du riz. Le riz achète aux paysans du riz pour une valeur de 1 million de FRW Rôle de la population: cultiver le riz et amener la récolte à SOPRORIZ	-Amélioration de la culture du riz -Recyclage des agriculteurs	Les paysans ont beaucoup apprécié le projet	Il n'y a pas eu de femmes a part la caissière et la femme du magasin
CNPE (Kabuye-Rutongo) financé par : avant 1987: FAO-PNUD Apres MINAGRI Actuellement: autofinancement	-Augmenter le bétail en nombre et en qualité -Distribution du petit élevage dans la population Population visée : Paysans réunis en coopératives : visites des coopératives, sensibilisation, distribution et ventes du bétail aux paysans, leur chercher le marché Rôle de la population dans le projet: Se réunir en coopératives	n/d	n/d	-Recyclage des femmes de Ntongwe sur l'élevage de porcs. -Il y a des filles qui travaillent dans les comptoirs de vente du CNPE. -6 femmes dans l'administration -Il y a des femmes qui travaillent dans les champs du projet et des coopératives.
ALICOM (Karuruma- Rutongo) Autofinancement	Assurer la transformation de la cassitérite et sa commercialisation à l'étranger Population visée: Les actions d' ALICOM sont avant tout destinées aux actionnaires de la société. Plus de 50% des travailleurs sont de RUTONGO. ALICOM verse en moyenne 400.000 fr de salaire mensuel global aux ressortissants de RUTONGO. Rôle de la population dans le projet: Les paysans aident ALICOM à transformer la cassitérite	Suite aux PROBLEMES avec la REDEMI, il n'y a plus de bénéfices; les activités se sont ralenties.	n/d	Pas de femmes à part une secrétaire

PROBLEMES RENCONTRES ET SOLUTIONS PROPOSEES

ONG ET PROJETS	PROBLEMES RENCONTRES	SUGGESTIONS DE SOLUTIONS
PADEC (MUKINGI)	-Peu d'actions non agricoles -Taux d'accroissement de la population	-Une vraie politique de planning familial -Ramener la paix dans le pays. -Donner priorité aux travaux agricoles
KIBUNGO II (RUTONDE)	-Paysans non intéressés par les nouvelles techniques agricole. -chute des ventes du maïs et du soja suite aux licenciements des encadreurs de base	non déclaré
DUTERIMBERE; CENTRE IWACU; KORA; ARTC; BORNEFONDEN;ARDI (NYARUGENGE)	non déclaré	non déclaré
BORNEFONDEN (KARAMA)	-ignorance des parents -La population s'est découragée -nbre d'enfants par famille est trop élevé -parents sont désintéressés -Manque de collaboration avec le C.N. qui refuse de soigner les enfants du secteur Muganza.	non déclaré
PSTP-HIMO(KARAMA)	non déclaré	non déclaré
SOPRORIZ (RUTONGO)	-climat instable -Manque de marché suite a l'abondance sur les marchés du riz importé.	L'Etat Rwandais devrait lutter contre la fraude.
CNPE (KABUYE-RUTONGO)	-Très peu de ressources financières -Leurs commandes de poussins au sein des couvoirs ne sont pas toujours honorées.	-Ils sont entrain de chercher une source de financement.
ALICOM (KARURUMA-RUTONGO)	-Pas de pierres précieuses à traiter; ils utilisent celles en provenance du Zaïre. -Redemi n'a pas honoré ses engagements car lui aussi exporte les pierres précieuses.	non déclaré

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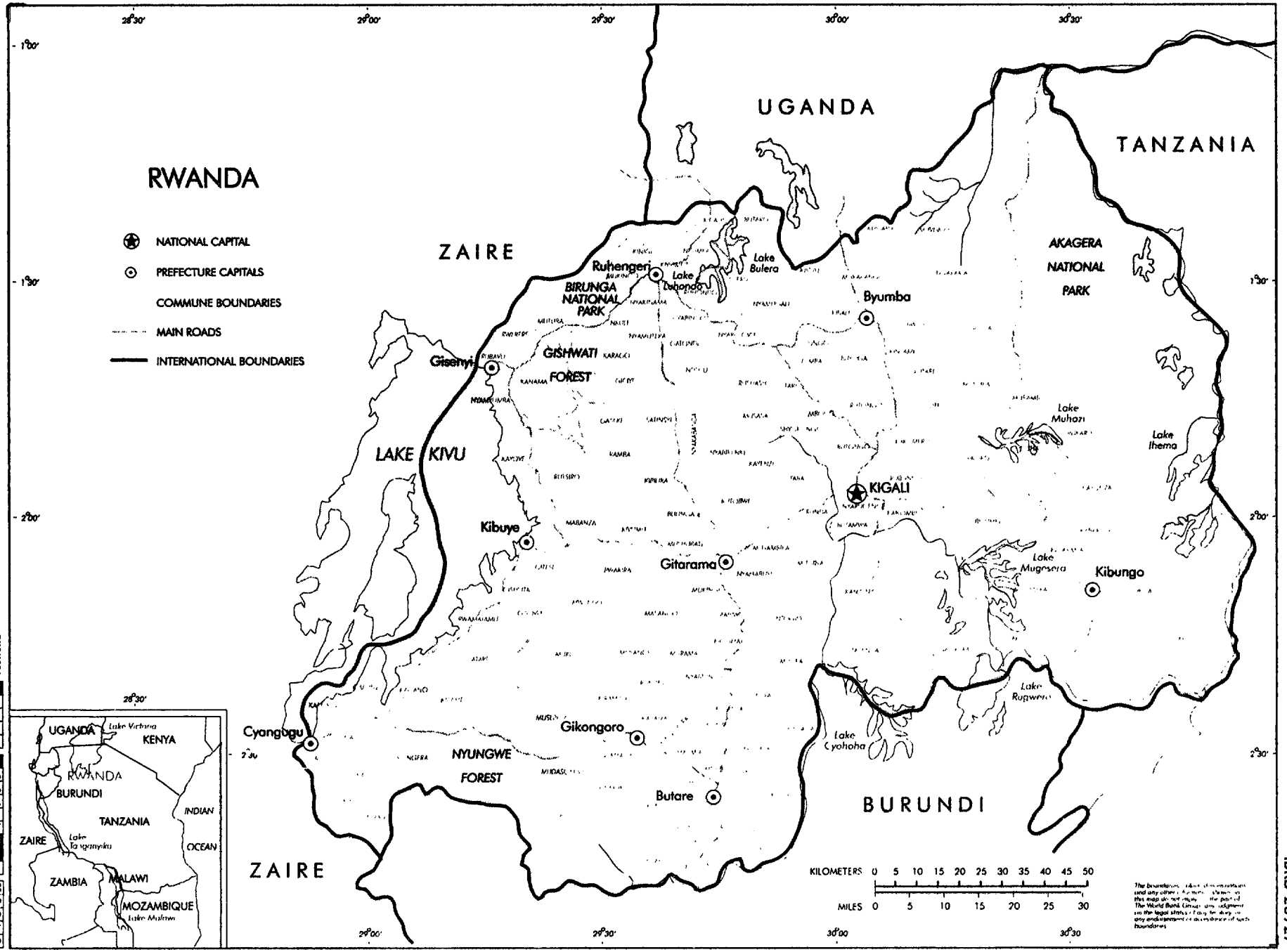
RWANDA
NATIONAL CAPITAL
PREFECTURE CAPITALS
COMMUNE BOUNDARIES
MAIN ROADS
INTERNATIONAL BOUNDARIES
UGANDA
TANZANIA
ZAIRE
BURUNDI
Ruhengeri
Lake Bulera
Lake Lubondo
BIRUNGA NATIONAL PARK
Byumba
AKAGERA NATIONAL PARK
Gisenyi
GISHWATI FOREST
Lake Muhazi
Lake Ihema
LAKE KIVU
KIGALI
Kibuye
Gitarama
Lake Mugesera
Kibungo
Cyangugu
Gikongoro
NYUNGWE FOREST
Lake Rugwero
Lake Cyohoha
Butare
KILOMETERS 0 5 10 15 20 25 30 35 40 45 50
MILES 0 5 10 15 20 25 30
28°30'
29°00'
29°30'
30°00'
30°30'
1°00'
1°30'
2°00'
2°30'
UGANDA
Lake Victoria
KENYA
RWANDA
BURUNDI
TANZANIA
INDIAN OCEAN
ZAIRE
Lake Tanganyika
ZAMBIA
MALAWI
MOZAMBIQUE
Lake Malawi

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