

Agricultural Growth and Investment Options for Poverty Reduction in Rwanda

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Rwanda has made a remarkable transition from the genocide of the mid-1990s to macroeconomic stabilization by 1998, and one of the highest growth rates in Africa for the last 10 years. During 2000–2003, the growth rate for the overall gross domestic product (GDP) was as high as 6.4 percent per year. Agricultural growth has played an important role in Rwanda's high growth, with an agricultural GDP growth rate of 7.9 percent over recent years, and a contribution of almost 40 percent to GDP in 2007. The Government of Rwanda is committed to further stimulating growth and reducing poverty through agricultural development, and is in the process of implementing the Comprehensive Africa Agricultural Development Programme (CAADP) in association with the New Partnership for Africa's Development (NEPAD). CAADP provides an integrated framework of development priorities aimed at restoring agricultural growth, rural development, and food security in line with the first Millennium Development Goal (MDG1) of halving poverty by 2015. The main target of CAADP is achieving 6 percent agricultural growth per year, supported by the allocation of at least 10 percent of national budgetary resources to the agricultural sector.

This brief discusses the feasibility of the CAADP agricultural growth target in Rwanda, its potential impacts on the Rwandan economy, and the investments necessary to meet it. These estimates are based on an economywide model developed by IFPRI. The findings are summarized here to help policymakers and other stakeholders make informed long-term decisions to stimulate Rwanda's economy through agricultural development and achieve poverty reduction.

RWANDA IS CURRENTLY NOT ON TRACK TO HALVING POVERTY BY 2015

Under its current growth path, Rwanda will fall short of achieving the MDG1 target of halving poverty by 2015. This "business as usual" model predicts that overall GDP will grow at 3.9 percent annually and per capita GDP will grow at about 1.1 percent per year. Such modest growth will result in minor reductions in the poverty rate from 60 percent in 2001 to 54 percent in 2015, which is insufficient to meet MDG1. This equates to an increase in the absolute number of poor in Rwanda from 4.8 million to 5.9 million by 2015. Moreover, the apparent gap between food supply and demand will continue to increase, making Rwanda more dependent on imports or food aid to meet basic needs.

IMPLEMENTING CAADP IS FEASIBLE AND WILL REDUCE POVERTY

Given Rwanda's current high rate of poverty, even achieving the CAADP 6 percent agricultural growth target will be insufficient to halve poverty by 2015. To do so, the country would need to achieve an annual agricultural growth rate of 9 percent. However, implementing CAADP will substantially reduce the number of people living below the poverty line by 2015. Compared to the baseline scenario, such agricultural growth will increase annual GDP growth from 3.9 percent to 6.2 percent and increase per capita GDP by 3.4 percent per year. As a result, national poverty is reduced from the 2005 rate of 59 percent to 42 percent by 2015. This goal is feasible if Rwanda realizes reasonably ambitious improvements in crop yields and subsector growth. Thus, while implementing CAADP will not enable Rwanda to reach the MDG1 poverty target, it remains a worthwhile goal due to its welfare effects.

POLICIES MUST TARGET VULNERABLE GROUPS TO ENSURE EQUITABLE POVERTY REDUCTION UNDER CAADP

The majority of rural households will benefit from poverty reduction under CAADP. However, the most vulnerable rural households will experience more modest poverty reduction than other households. Landless households, for example, will see a 16 percent reduction in poverty, from 73 percent in 2005 to 57 percent in 2015. In contrast, landholding households will experience a faster rate of poverty reduction (18 percent) from an initial 53 percent poverty rate, resulting in a predicted 34 percent poverty rate in 2015. Inequality increases under this scenario, as the poverty gap between the two groups expands from 21 percent in 2005 to 23 percent in 2015. Likewise, the poverty rate will fall by 18 percent for rural male-headed households under CAADP, but only by 17 percent for female-headed households. As a result, the poverty gap between genders also increases over the 10-year span. Attention must be paid to these vulnerable groups through more targeted policies to prevent increasing inequality and ensure that the benefits from the CAADP-targeted agricultural growth are equitably distributed.

PRIORITIZING STAPLES AND LIVESTOCK CAN INCREASE PRO-POOR CAADP GROWTH

The study assessed the impacts of growth led by different types of crops on overall poverty reduction. It found that poverty reduction under CAADP is larger when economy-wide growth is driven by increased production of staple crops and livestock, rather than by export crops. Specifically, under CAADP, every 1 percent increase in per capita GDP driven by growth in staple crops and livestock reduces national poverty by 1.3 percent, compared to growth driven by exports, which only reduces national and rural poverty by 0.85 percent and 0.87 percent, respectively. Growth led by export crops often augments the incomes of households that were better off in the first place. Staple crops, in contrast, are a more important source of income for poorer households in more remote regions of the country. Therefore, growth led by this subsector will cause national poverty to decline at a faster rate. Of these crops, cereals, especially rice and maize, should be prioritized.

AGRICULTURAL INVESTMENTS MUST BE EFFICIENT

Increasing agricultural growth to meet the CAADP target will require additional investment in the sector. If investments are efficiently allocated—that is, if the rate of return on public spending is high—less additional investment will be required. In the average Sub-Saharan African country, every 1.0 percent increase in total agricultural spending will cause at least a 0.3 percent increase in agricultural GDP. At this rate, achieving and sustaining the CAADP 6 percent agricultural growth rate in Rwanda will require agricultural expenditure to grow by 15 percent per year (Table 1). This means the government will need to allocate 6.5 percent of its total budgetary resources to agriculture by 2015. If the government receives a more modest return on its spending (as it did over the period 1995-2005) then public spending on agriculture will have to grow at about 30 percent per year in order to reach the CAADP target. This represents almost one fifth of the government's total budget by 2015.

Investments to agriculture will need to increase at an even greater rate to achieve the annual agricultural growth rate (9 percent) necessary for Rwanda to attain the MDG1 poverty target. To do so, spending will need to grow at an annual rate of 23 percent under efficient public spending, or 46 percent under less efficient spending (Table 1). This translates into a 10 to 35 percent share of the national budget to agriculture by 2015, which, although high, is on par with the allocations made by many Asian countries in their early stages of development. Therefore, it is important that the government not only increase the amount of its spending on agriculture but also greatly improve the efficiency of that spending.

AGRICULTURAL INVESTMENTS MUST BE PRIORITIZED

In order to realize the growth and poverty-reducing potential of CAADP, Rwanda will need to not only increase public spending in agriculture, but also prioritize these investments, for example by focusing on long-term programs such as agricultural research and development, irrigation, and transportation infrastructure.

Table 1: Estimated Funding Requirements (growth rates and shares)

	Current (2001-06)	CAADP		MDG1	
		Low Efficiency	High Efficiency	Low Efficiency	High Efficiency
Real growth rates (%)					
Total government expenditure	10.8	8.2	6.7	12.2	8.3
Agriculture	-6.5	30.3	15.2	45.6	22.6
Non-agriculture	11.8	6.3	6.3	7.4	7.4
Agricultural expenditure shares (%)					
Agricultural expenditure in total expenditure	4.92				
2010		6.6	4.4	9.2	5.2
2015		17.6	6.5	34.5	10.0
Agricultural expenditure in agricultural GDP	3.2				
2010		4.7	3.0	6.3	3.5
2015		14.1	4.6	30.7	6.5

Source: Diao et al. 2007.

Research and development

Investment in agricultural research and development (R&D) offers great potential for enhancing productivity and reducing poverty. Thirtle et al. (2003), for example, show that for every 1 percent increase in yield brought about by investments in agricultural R&D, 2 million Africans can be lifted out of poverty. However, agricultural R&D spending in Rwanda has declined in recent years. It is currently below the level of the African average of 0.5-0.6 percent of agricultural GDP, standing at 0.3 percent of agricultural GDP as of 2006. This is much lower than the one percent recommended by the World Bank.

Irrigation

The impacts of irrigation on agriculture are well known, in part due to the success of the Asian Green Revolution in the 1960s and 1970s, which relied heavily on the rapid expansion of irrigated areas. In contrast to many other African countries, Rwanda's abundant rainfall and vast marshland offers tremendous potential to expand irrigation to more cropland. Recently, Rwanda has increased its budget allocation to irrigation, with the aim of expanding irrigated areas to 15 percent of cropland by 2015. Whether this allocation will be sufficient to reach the set target remains uncertain.

Transportation infrastructure

Investment in rural infrastructure, particularly feeder roads, has been shown to have large poverty reduction effects

per unit of investment. Roads enable smallholders to gain access to agricultural inputs and product markets, and participate in higher value-added market chains, significantly contributing to poverty reduction. Rwanda has a sparse road system compared to other African countries, so farmers lack access to affordable, yield-enhancing inputs and inexpensive marketing channels. The national target for road development is far too modest—road density is planned to increase from 0.54 to 0.56 kilometers per square kilometer during 2000-10 and 0.60 kilometers per square kilometer by 2020.

CONCLUSION

The findings of this study indicate that by directing more resources to the agricultural sector through its implementation of CAADP, Rwanda will be able to significantly improve the well-being of its population. While CAADP will not enable the country to achieve the MDG1 poverty target, the 6 percent agricultural growth target is a feasible goal that leads to impressive poverty reduction. However, in implementing CAADP, Rwanda will need to focus its investments to ensure that the economic benefits and welfare impacts reach the poorest. This will require not only increased public expenditures to the sector, but also more efficient spending targeted to long-term programs with well-known beneficial impacts.

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