# Investing in African Agriculture to Halve Poverty by 2015

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At the United Nations Millennium Summit in September 2000, world leaders made a huge commitment to reducing poverty. As part of the process, specific indicators were adopted for measurement of quantifiable progress, and an agenda was enacted for reducing poverty and its causes and manifestations. While many developing regions are on track towards meeting this first Millennium Development Goal (MDG 1), progress in Sub-Saharan Africa (SSA) has been slow (Figure 1). As a result, SSA is the only region of the developing world expected to have more poor people in 2015 than it did in 1990. The scourge of poverty has been accompanied by a high prevalence of hunger in Africa, with 33 to 35 percent of the adult population undernourished (Rosegrant et al. 2005). Progress in achieving the MDG 1 of halving poverty and hunger by 2015 is uneven across African countries.

Figure 1: Incidence of poverty among major developing regions
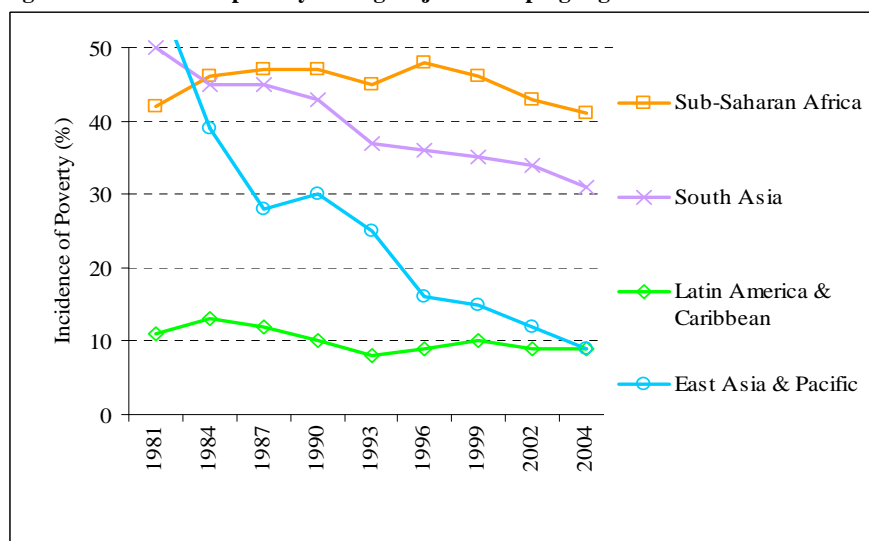
Source: World Development Indicators, 2007

Long-term neglect of rural smallholder agriculture, exacerbated by drought, civil insecurity, and hostile domestic and international policies, has contributed to persistently high rates of poverty and hunger in many African countries. To reverse these trends, both national governments and the international donor community need to commit more public resources to agriculture and use them efficiently by setting the right investment priorities. African leaders have recognized the importance of increasing government spending for agriculture, and have adopted the Comprehensive Africa Agriculture Development Programme (CAADP), which targets allocating

10 percent of national budgets to agriculture in order to achieve 6 percent annual agriculture growth rates. This brief investigates whether that commitment is enough to reach MDG 1, halving poverty by 2015. More specifically, the brief identifies the rates of agricultural growth needed for African countries to cut poverty in half by 2015 and the additional public expenditures needed to achieve that vision.

Methodology

A key feature of this brief is the examination of potential country-level differences in costing MDG 1 that have been largely ignored by previous estimates. For example, Devarajan et al. (2002) estimate that between $54 and 62 billion per year are needed to reach the goal, and the Zedillo Report estimates the need at $20 billion per year. These costing methods are aggregates rather than being country specific and ignore the role of agriculture in poverty reduction (Pettifor and Greenhill 2003).

To estimate costing of MDG 1, we use both growth-poverty and expenditure-growth elasticities to estimate required agricultural growth rates and corresponding public expenditures needed to achieve the goal, separated by country. The required agricultural growth rates are first estimated using elasticities of poverty with respect to both agricultural and non-agricultural growth. The additional spending needed in agriculture to achieve these growth rates is then calculated using expenditure elasticities of growth. Finally, the indirect effect of agricultural growth on poverty, which is generated by its linkage or multiplier effect with non-agricultural growth, is also explicitly modeled.

The incorporation of non-agriculture in the analysis is an important consideration since the economic share of this sector – and thus its impact on poverty reduction – is expected to increase over time. Moreover, considering the non-agricultural sector avoids the bias of overestimating agricultural growth and spending requirements to achieve MDG 1.

The simulations are conducted for 30 countries in SSA in which the agricultural sector contributes at least 10 percent to the gross domestic product (GDP). Typically, this is where the bulk of the poor depend heavily on agriculture for their livelihood. Although the choice of countries is governed by the availability of expenditure data, the countries included broadly cover the whole of SSA.

In estimating the agricultural growth rates required to meet MDG 1, we hold constant non-agricultural growth under two different assumptions: the first, more conservative, scenario assumes that the non-agriculture sector will grow at a lower rate similar to the period 1990 to 2004, while the second, more optimistic, scenario assumes it will grow at a faster rate, as witnessed in more recent years (2000-2004). Over the longer period, 1990 to 2004, growth of non-agriculture was slow for many African countries due to depressed commodity prices, unfavorable weather and political instability. In the more recent and optimistic scenario, 2000 to 2004, many countries have made large strides due to strong global commodity demand and an improved domestic policy environment, governance, and investment climate.

Results

Results show that African agriculture will need to grow at a rapid rate of 7.5 percent annually in order to meet the first MDG goal (Figure 1). This is under the more optimistic scenario. The sector will need to grow even faster if we assume the more conservative scenario. Clearly, the 6 percent CAADP benchmark for agricultural growth is insufficient to meet the MDG 1 target for most countries. For some it is sufficient. Countries such as Mali, Nigeria, Burkina Faso, Tanzania, Mauritania, Ethiopia, Cameroon, Uganda, Mozambique, and Ghana, require a growth rate of 6 percent or less. Among these, Ethiopia, Cameroon, Uganda, Mozambique, and Ghana have been able to achieve growth rates above what would be required.

Figure 1: More conservative scenario for achieving MDG 1
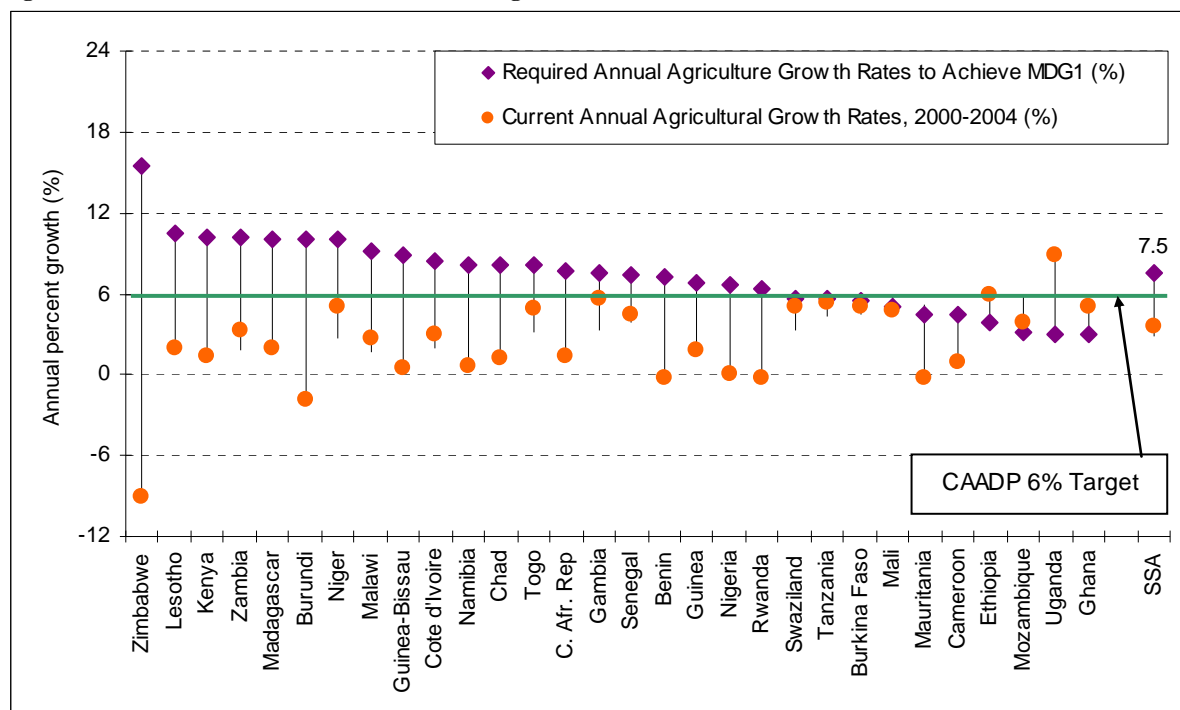
Source: Fan et al. 2008

To achieve the desired growth rates, the results suggest that, overall, African countries will need to boost their agricultural spending to $33 to $39 billion annually (in 2000 international dollars) from 2005 to 2015 (Table 1). This translates into an increase of agricultural spending by 20 to 24 percent annually. These requirements vary widely at the country level. For example, Ethiopia, Ghana, Mozambique, and Uganda can potentially reach MDG 1 by increasing agricultural expenditures by up to 10 percent annually. The majority of countries, however, will need to scale up their spending substantially, by 20 to 30 percent per year. In dollar terms, this implies annualized total expenditures for agriculture that range from $11 million for Burundi to $17 billion for Zimbabwe. These estimates turn out to be much lower than those under other costing exercises. Meeting MDG 1 is therefore possible and within reach for many African countries, as

long as governments allocate sufficient resources to the sector, and their policy and institutional environments promote broad-based growth and development.

Conclusion

Several findings clearly emerge. First, if the current scenario persists, Africa will not be able to achieve MDG 1 at the regional level. At the country level, only a handful of countries will succeed while the majority will fall short, indicating that African countries need to accelerate their economic growth, particularly in the agricultural sector.

At the regional level, an annual agricultural growth rate of 7.5 percent per annum is required. However, this masks a large variation among countries. Lesotho, Niger, Kenya, Madagascar, Guinea Bissau and Burundi will require at least 10 percent growth in agriculture, while Ghana, Mozambique and Uganda will achieve the goal if they continue at their present growth rates. Nigeria stands out as the only country with a high level of poverty that has the required agricultural growth rate, close to 6 percent.

In order to achieve MDG 1, our analysis indicates that African governments will need to increase their agricultural spending by 20 percent per year. At the country level, this requirement ranges from achievable levels (e.g., Ghana, at 9.5 percent) to far more difficult levels (e.g., Madagascar, at 33 percent). The worsening situation in recent years in Zimbabwe leads to a required 50 percent annual growth rate in spending.

While it is vital to estimate the public resources needed to reach particular agricultural targets, it is equally important to prioritize investments. Limited evidence shows that investments in agricultural research and extension, rural infrastructure and rural education have the greatest impact on agricultural growth and poverty reduction (Fan, Zhang, and Rao 2004). However, as with the costing simulations, the particular context of each country will determine the investment priorities. The efficient use and targeting of these large public expenditures will require a complementary strengthening and reformation of governance and institutions.

Table 1: Required agricultural growth and expenditure to meet MDG 1

Country	Required Annual Agriculture Growth Rates to Achieve MDG1 (%)	Required Agricultural Expenditure Growth Rates to Achieve MDG1 (%)	Annualized Agriculture Expenditure Required to Achieve MDG1, 2004 - 2015, (2000 international dollars, million)	Required Annual Agriculture Growth Rates to Achieve MDG1 (%)	Required Agricultural Expenditure Growth Rates to Achieve MDG1 (%)	Annualized Agriculture Expenditure Required to Achieve MDG1, 2004 - 2015, (2000 international dollars, million)
	Share of Ag in total GDP>10% and<35%					
	More conservative Scenario			More optimistic scenario		
Burkina Faso	6.2	20.2	284	5.5	17.9	246
Chad	9.9	32	1,356	8.1	26.4	953
Cote d'Ivoire	10.2	33.2	1,768	8.9	28.9	1,344
Gambia	8.9	29	426	7.2	23.5	301
Guinea	8.2	26.7	3,621	7.4	24.1	3,068
Kenya	11.3	36.7	4,318	10	32.5	3,313
Lesotho	12.1	39.2	1,918	10	32.4	1,253
Madagascar	10.9	35.5	*11,789*	10.2	33	*10,091*
Malawi	10.4	33.8	1,175	6.8	22	556
Mauritania	6.1	19.7	356	4.5	14.7	259
Mozambique	3.6	11.6	463	3	9.7	413
Namibia	10.1	32.7	1,912	8.1	26.1	1,262
Senegal	8.6	27.9	714	6.6	21.5	478
Swaziland	6.9	22.5	161	6.3	20.5	142
Zambia	11.2	36.3	665	7.7	24.9	324
Zimbabwe	18	58.6	*28,345*	15.5	50.5	*17,458*
	Share of Ag in total GDP>35%					
Benin	8.5	26.7	356	7.6	24	301
Burundi	10.9	34.1	12	10.5	32.9	11
Cameroon	5.7	18	708	3.8	11.9	486
C. African Rep	9.2	29	88	8.4	26.5	75
Ethiopia	4.8	15.1	3,012	4.4	13.7	2,770
Ghana	3.2	10.2	251	3	9.5	240
Guinea-Bissau	10.3	32.4	17	10.2	32	17
Mali	6.2	19.6	1,266	5.7	17.9	1,133
Niger	10.5	33	131	10	31.5	5,154
Nigeria	7.7	25.1	7,751	5.7	18.6	63
Tanzania	6.5	20.3	156	5	15.8	118
Rwanda	7.6	24	268	8.1	25.6	307
Togo	9.6	30.2	312	9.1	28.6	281
Uganda	3.5	11.1	954	3.2	10	891
SSA	8.5	23.5	39,106	7.5	20.7	32,794

Source: Table 5 in Fan et al. 2008.

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