



Comprehensive Africa Agriculture Development Programme (CAADP)

BROCHURE 4 — OCTOBER 2009

UGANDA

STRATEGIC INVESTMENT OPTIONS FOR AGRICULTURAL GROWTH AND POVERTY REDUCTION

Implementing the Comprehensive Africa Agriculture Development Programme (CAADP) as the centerpiece of a poverty-reduction strategy implies that agriculture and its individual subsectors must play a primary role as leading sources of pro-poor growth at national level. Uganda and other African countries pursuing the CAADP agenda are not just seeking to accelerate growth

but also to maximize and broaden the impact of such growth on wealth creation and poverty reduction. Successful implementation of the CAADP agenda should, therefore, be guided by a good understanding of the impact of sector-wide growth and growth within individual agricultural subsectors on income and poverty levels among different categories of households.

Agricultural growth and its contribution to overall economic growth

The analysis presented here shows the contribution of agriculture to overall economic growth. Under the baseline scenario, which assumes continuation of recent productivity rates for different sub-sectors, overall GDP will grow at 5.5 percent per year during the period 2005 to 2015 (Figure 1), in line with the average GDP growth rate achieved for Uganda since 2000. Under the baseline scenario, agriculture will grow at 2.8 percent per year. The growth projections in the baseline scenario consider nine agricultural sub-sectors (cereals, root crops, horticulture, pulses

and oilseeds, matooke, livestock, and fisheries) and two non-agricultural sectors (industry and services). Growth in crop production is expected to come from two percent per year increases in crop area and improvements in land productivity (yield) for the different crop sub-sectors. For non-crop agriculture such as livestock and fisheries, growth is expected to come from an increase in labor productivity (output per person employed). The analysis explores whether or not Uganda can achieve the CAADP target of 6 percent annual growth in the agricultural sector.

Figure 1: Average annual sub-sector growth rates in the baseline & CAADP scenarios (%)

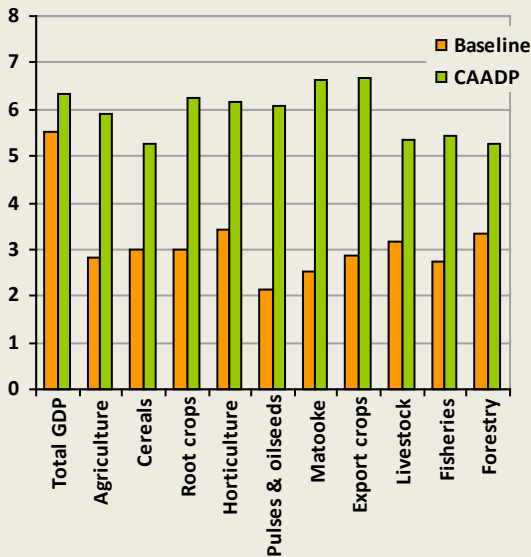
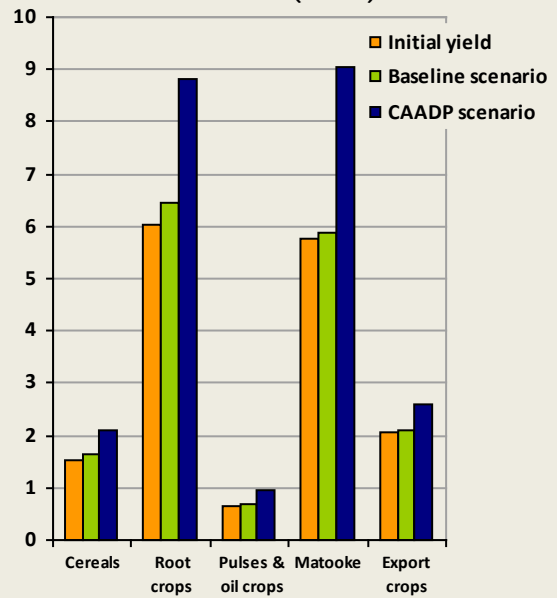


Figure 2: Crop yields under model scenarios (mt/ha)



In order to arrive at the growth rates for the different sub-sectors in Figure 1, assumptions are made regarding land productivity based on recent performance, as well as potential productivity based on field trials at research stations in Uganda (see Figure 2). With these assumptions on crop area and land and labor productivity, agriculture is projected to grow at 5.9 percent, just below the CAADP target, while the overall

economy will grow at 6.3 percent. While this growth rate for agriculture in Uganda is achievable, it remains a challenge to reach and sustain. For example to attain the CAADP target, crop yields would have to increase by over 40 percent on average. To do so, it would be necessary to substantially increase investments that raise land and labor productivity.

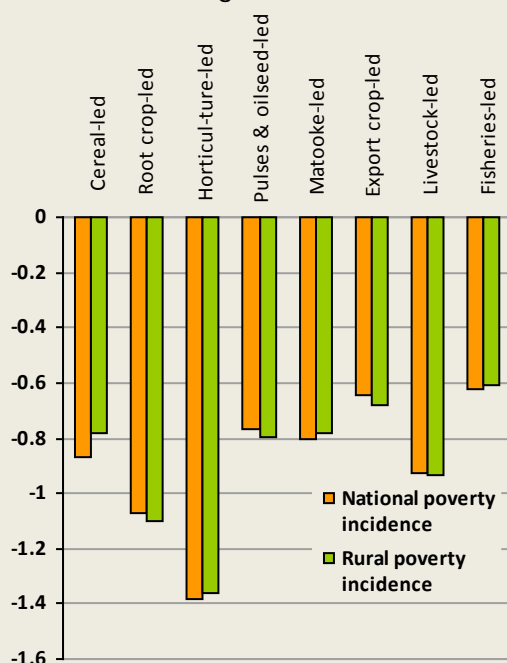
Agricultural growth and poverty reduction

Agricultural growth under current trends (baseline scenario) will result in 2.8 percent growth of the sector. Overall GDP will grow at 5.9 percent. With population growth estimated at 3.4 percent, per capita GDP will grow at 2.5 percent. With this growth in GDP and in agriculture, and the resultant rise in per capita incomes, poverty will decline from 31.1 percent in 2005 to 24.0 percent in 2015, a level sufficient for Uganda to meet the first Millennium Development Goal (MDG1) of halving poverty between 1990 and 2015. A household survey conducted in 1992/93 found that Uganda's national poverty rate was 56 percent. Thus achieving MDG1 would mean cutting that rate by half to 28 percent by 2015. Thus, growth achieved under the baseline scenario helps Uganda to achieve MDG1.

However, as presented in Brochure 3 (*Agricultural Growth and Poverty Reduction: Past Performance and Prospective Outcomes*), achieving the

MDG1 goal is not sufficient for Uganda to achieve effective poverty reduction. Such poverty reduction can be achieved with faster growth in agriculture with agricultural sub-sectors achieving growth rates presented in Figure 1. With agriculture growing at close to 6 percent, and overall GDP at 6.3 percent, per capita income will grow at 2.6 percent. This rise in per capita income would lead to reduction in national poverty by a further 6.05 percentage points to 17.9 percent (see Figure 6 in Brochure 3). In order to realize the 6 percent growth in agriculture, all sub-sectors would have to grow at over 3 percent per annum. Additional growth under the CAADP scenario is partly driven by expanding export crops, whose GDP rises from 2.9 percent to 6.7 percent per year (Figure 1). However, as an economic growth strategy, Uganda will have to rely on a broad approach, involving the full complement of sub-sectors within

Figure 3: Poverty-growth elasticities under different agricultural sub-sector led growth scenarios



agriculture, rather than relying solely on export commodities or on other specific crops. Livestock and fisheries will also be important in achieving higher incomes and reducing poverty.

The contribution that growth in different sub-sectors in agriculture makes to poverty reduction varies and depends largely on two factors: the original size of the sub-sector in agricultural GDP and the responsiveness of poverty to growth

in that sector, i.e., the poverty-growth elasticity that measures percentage change in poverty due to a one percent change in agricultural GDP. Figure 3 shows the poverty-growth elasticities under different growth scenarios. For example a one percent increase in agricultural GDP caused by a horticulture-led growth strategy would cause the national poverty headcount to decline by 1.38 percent. On the other hand, a one percent increase in agricultural GDP brought about through an export-led growth strategy would result in a decline in the poverty rate by only 0.64. However, because of the small size of the horticulture sub-sector and the number of people involved in it, having a higher elasticity does not mean that this is where public investments should be made for Uganda to reduce poverty. The export crops in this case would be more attractive to invest in because they are larger than horticulture, have more people producing them, and have fewer marketing constraints. Nonetheless, they tend to be produced by households that are non-poor. Therefore, in establishing agricultural strategies for effective poverty reduction, choices should be made among those sub-sectors that are large in agricultural GDP both in terms of people producing them and their importance to consumption. These sub-sectors include root crops, pulses and oil crops.

Agricultural growth and effects on market prices

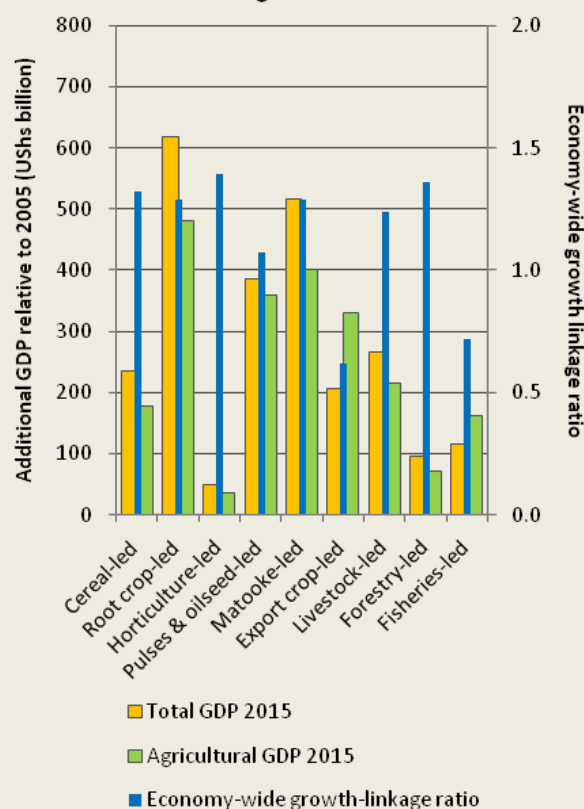
The growth in different sub-sectors in agriculture as a result of increases in yield and labor productivity under the CAADP scenario will lead to increases in production. Increased production will face demand constraints for some products, with resultant decline in product prices. The relative decline in prices varies from one product to another. For example, increased matooke production will result in larger price declines than, say maize, because matooke has weak linkages to upstream processing, while maize can be processed into flour and animal feeds. Therefore, the decline in maize prices with increased production is lower than would be

seen for matooke prices. For coffee, increased production does not face a demand constraint because Uganda's output cannot influence world prices. Vegetables and fish are also less vulnerable to price changes resulting from increased production than maize and matooke. Because of these relative changes in prices, the relative profitability of different crops changes over time, leading farmers to reallocate their land among different crops in order to maximize total farm profits. For example under the CAADP scenario, by 2015, the share of harvested land will rise for export crops and fruits, but decline for maize, matooke and root crops.

Agricultural and economy-wide growth effects

Growth in agriculture has economy-wide effects, most of them beneficial to the economy. The results from this analysis (see Figure 4) show, for example, that a cereal-led growth strategy would cause agricultural GDP to increase by US\$ 177 billion and overall GDP to increase by US\$ 235 billion. This means that for every one shilling increase in agricultural GDP driven by cereals-led growth, there is an additional 0.32 shillings increase in non-agricultural GDP (i.e., a growth-linkage ratio of 1.32). On the other hand, export crops have weaker economy-wide growth linkages because they are exported directly as raw agricultural materials, rather than contributing more to the economy through processing and value addition. Growth in export crops can lead to appreciation of the exchange rate, and hurt exports of the non-agricultural sector. This reduces the competitiveness of non-agricultural exports, whose sectors will contract as a result. The appreciation also increases competition from manufactured imports, which can hurt domestic manufacturing. Thus, it is important to note, that while domestic-market-oriented crops face market constraints in local markets, growth in export crops have exchange rate implications for other non-agricultural export sectors.

Figure 4: Economic growth linkage effects of different agricultural sub-sector led growth scenarios



Implications for agricultural investment choices

The analysis presented in this brochure shows that growth in agriculture has effects on economic growth, poverty reduction, price effects, as well as economy-wide growth effects. These effects differ from one sector to another. This, therefore, complicates the choice of investments to make.

Table 1 presents a simple ranking of the sub-sectors based on the different effects they have on the economy - (i) the effectiveness of sub-sector-driven growth in reducing poverty (i.e., the poverty-growth elasticity); (ii) the effect of a sub-sector's size and growth potential in determining its potential contribution to overall growth and poverty reduction (i.e., the size-effect); (iii) the implications of sub-sector-driven growth for growth in other non-agricultural

sectors (i.e., the multiplier effect); and (iv) the market constraints facing different crops (i.e., price-effect). Based on these considerations it is possible to rank sub-sectors. These, together with other considerations, can be used to select priority areas for public and private sector investments.

The poverty-growth elasticities, sectoral growth potentials, and size- and linkage-effects of the various subsectors suggest that improving yields for maize and other cereals, root crops, and matooke should be afforded high priority, while also encouraging the longer-term expansion of smallholder export crops whose growth-potential is higher than most staple food crops. Livestock and fisheries should also be accorded an important role, especially if agricultural

Table 1 Ranking of effects on economic growth, poverty, and prices of different agricultural sub-sector led growth scenarios

	Poverty- effect	Size- effect	Multiplier- effect	Negative price-effect
Cereals-led	4	6	3	6
Root crop-led	2	1	4	8
Horticulture-led	1	9	1	4
Pulses & oilseeds-led	6	3	7	6
Matooke-led	5	2	5	9
Export crops-led	7	4	9	1
Livestock-led	3	5	6	5
Forestry-led	-	8	2	3
Fisheries-led	8	7	8	2

diversification is a longer-term objective. However, this ranking of sub-sectors should be treated with some caution, since growth in each subsector affects different households differently, and as such, broad-based poverty

reduction will require an encompassing agricultural growth strategy across all of the subsectors.

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REPUBLIC OF UGANDA

Ministry of Agriculture, Animal Industry and Fisheries

P.O. Box 102

Entebbe, Uganda

Tel: +256-414-320004

Email: psmaaif@infocom.co.ug or pma@pma.go.ug

Website: www.agriculture.go.ug