

ECOWAS COMMISSION



Department for Agriculture,  
Environment and Water Resources  
Regional Agricultural Policy  
(ECOWAP)

REPUBLIC OF GHANA



Freedom and Justice

AFRICAN UNION



NEPAD  
Comprehensive Africa Agriculture  
Development Program  
(CAADP)

# GHANA

## Long-Term Funding for Agricultural Growth, Poverty Reduction, and Food Security

***T***he level of funding required to achieve the different growth and poverty outcomes projected in Brochure 2 (Agricultural Growth, Poverty Reduction, and Food Security: Past Performance and Prospective Outcomes) is calculated on the basis of the estimated historical relationships between the rate of agricultural GDP growth

and the change in the poverty rate, and between the level of public agricultural funding and the rate of agricultural GDP growth. Estimates of the first relationship indicate that a 1% growth in agricultural GDP leads to a 1.14% reduction in national poverty rates. On the other hand, estimates of the second relationship suggest that a 1% increase in agricultural spending raises the sector's growth rate by 0.15%. This is quite weak compared to the average value across Africa, which is twice as high at 0.366%. The effect of agricultural public spending differs substantially when estimated for the specific agro-ecological

zones. The marginal effect of aggregate spending is relatively higher in the Forest and Southern Savannah zones, where we see elasticities of 0.45 and 1.30 respectively. The estimated elasticity of agricultural productivity with respect to public agricultural expenditures may reflect low spending efficiency. The long-term projections discussed below are therefore carried out using both the estimated elasticity for Ghana and an elasticity of 0.30 to simulate a more optimistic spending efficiency scenario.

# LONG-TERM FUNDING REQUIREMENTS TO MEET THE MIC AND CAADP TARGETS IN GHANA

Table 1 shows the budget allocation to agriculture of the last 5 years. Agricultural spending by the Ministry of Agriculture (MoFA), other ministries, departments and agencies, particularly the Department of Forestry, the Council for Scientific and Industrial Research, and the Cocoa Marketing Board constituted 5.2% of total government spending or 3.6% of agricultural GDP on average between 2000 and 2005. Table 2 summarizes the results of the projections of long-term funding needs in the agricultural sector. The results focus on two scenarios: one based on the weak relationship between agricultural spending and agricultural growth (a low-elasticity scenario) and a second assuming the same level of responsiveness of agricultural growth to public spending as observed on average among African countries (a high-elasticity scenario).

For Ghana to achieve middle-income status by 2015, which is consistent with the CAADP agenda and implies the realization of the growth and poverty outcomes discussed in Brochure 2 (*Agricultural Growth, Poverty reduction, and Food Security: Past performance and Prospective*

*Outcomes*), an annual growth rate in agricultural spending of 19.6% or 15.1% would be required depending on the responsiveness of agricultural growth to agricultural spending. With low responsiveness the share of agriculture in government spending would have to increase substantially from the current 8.5% to 11.0% in 2010 and 14.1% in 2015. These increases would translate into additional agricultural expenditures by a total amount of GH¢2643 million over the 2005–15 period, or GH¢264 million per year. If the government were able to achieve greater efficiency in its spending, the share of agriculture in government spending would have to rise by less to 9.3% in 2010 and 10.1% in 2015.

The additional agricultural spending required under the high-elasticity scenario will only be GH¢1147 million over the 2005–15 period, or GH¢115 million per year. Although Ghana is quite close to achieving the underlying agricultural growth rate required to reach its middle-income goal by 2015 (i.e. 6.9% compared to the current rate of 5.3%), it will be necessary to raise agricultural expenditure. However, it will also be important to reform public institutions, particularly those with agriculture-related functions, to improve the efficiency of spending and provision of public goods and services.

Table 1 - Economic growth and government budget allocation

|  | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   |
|--|--------|--------|--------|--------|--------|--------|
| <b>GDP in constant (2000) million GH¢</b>      |        |        |        |        |        |        |
| Ag GDP   | 950.3  | 994.1  | 1141.6 | 1237.3 | 1397.7 | 1453.8 |
| NonAgGDP                                       | 1449.5 | 1516.2 | 1748.5 | 2190.1 | 2421.2 | 2584.4 |
| GDP  | 2399.8 | 2510.3 | 2890.1 | 3427.3 | 3818.9 | 4038.2 |
| <b>Spending in constant (2000) million GH¢</b> |        |        |        |        |        |        |
| Ag   | 30.4   | 31.8   | 28.5   | 40.8   | 67.1   | 58.2   |
| NonAg  | 919.9  | 645.0  | 703.3  | 775.8  | 934.3  | 944.4  |
| Total  | 950.3  | 676.8  | 731.8  | 816.6  | 1001.3 | 1002.6 |
| <b>Shares (%)</b>                              |        |        |        |        |        |        |
| Ag spending/total spending                     | 3.2    | 4.7    | 3.9    | 5      | 6.7    | 5.8    |
| Ag spending/AgGDP                              | 3.2    | 3.2    | 2.5    | 3.3    | 4.8    | 4      |
| Total spending/GDP                             | 39.6   | 27.0   | 25.3   | 23.8   | 26.2   | 24.8   |

# IDENTIFYING INVESTMENT PRIORITIES FOR ACHIEVING MIC AND CAADP TARGETS

Estimating the total public resources needed to reach national agricultural growth targets is essential, but the choice of priority investments is more important. Figure 2 shows the marginal returns to public investments in agriculture, education, health and feeder roads for Ghana as a whole and for the four agro-ecological zones.

Figure 2 shows that substantial returns to most types of public investments exist. However, there are also large differences among different types of public investments and across different agro-ecological zones. At the national level, agricultural public expenditures have the highest returns in terms of agricultural productivity. For one marginal cedi invested in agriculture, GH¢16.8 is returned. In addition, there are positive and substantial returns of public spending in non-agricultural sectors. For example, investments in infrastructure, especially road development, are often ranked among the top two public spending sources of overall growth and poverty reduction. For Ghana, a marginal cedi invested in feeder roads returns GH¢8.8, while a cedi invested in health returns GH¢1.3. Public investment in education yields a negative return indicating that the formal education system is not benefit-

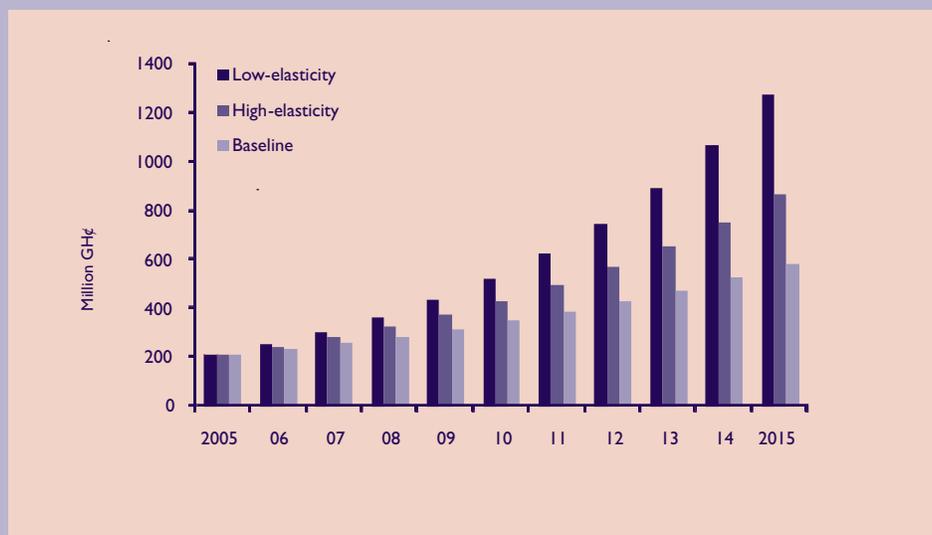
ing the agricultural sector as much as the non-agricultural sector. The government may need to make educational curricula more agriculturally relevant in order to retain educated persons on the farm. Marginal returns to the different types of public investments differ among the four agro-ecological zones. The returns to agricultural spending are highest in the Southern Savannah zone, followed by the Forest and Coastal zones. The Northern Savannah zone has the lowest returns to agricultural spending but the highest returns to health, followed by the Forest and Southern Savannah zone. Returns to spending on rural roads are highest in the Forest zone, followed by the Coastal zone. Together these results suggest that high benefits can be obtained from additional public spending on the agricultural sector, particularly developmental spending and capital investments. In addition, it could be helpful to target different investments to different regions, while it might also be useful to include more agriculturally-relevant information in the educational system.

For Ghana to become a middle-income country by 2015, which is consistent with it reaching the CAADP target of 6% agricultural growth, and associated with a decline in poverty rates of almost 70%, the share of agricultural expenditure in government spending would have to almost double from the current 8.5 to 14.1%. Reforming public institutions to improve the provision of agriculture-related public goods and services could substantially lower this share.

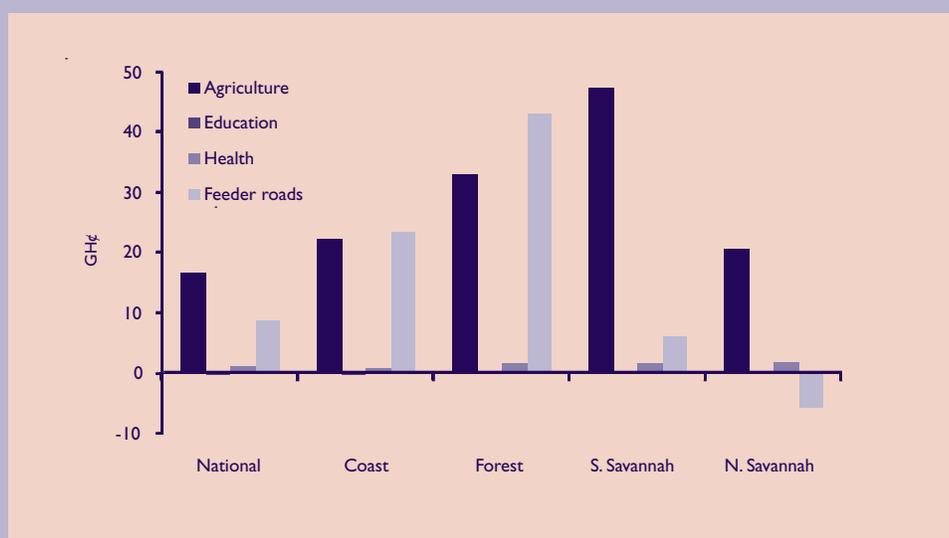
Table 2 – Estimated resource allocation to the agricultural sector (2005-2015)

|                                       | Baseline scenario | MIC scenario   |                 |
|---------------------------------------|-------------------|----------------|-----------------|
|                                       |                   | Low-elasticity | High-elasticity |
| <b>Growth rate (%)</b>                |                   |                |                 |
| AgGDP                                 | 5.3               | 6.9            | 6.9             |
| NonAgGDP                              | 5.8               | 8.2            | 8.2             |
| GDP                                   | 5.6               | 7.6            | 7.6             |
| <b>Ag spending</b>                    | 10.5              | 19.6           | 15.1            |
| <b>Total spending</b>                 | 10.5              | 13.7           | 13.1            |
| <b>Ag spending/Total spending (%)</b> |                   |                |                 |
| 2010                                  | 8.5               | 11.0           | 9.3             |
| 2015                                  | 8.5               | 14.1           | 10.1            |
| <b>Ag spending/AgGDP (%)</b>          |                   |                |                 |
| 2010                                  | 7.9               | 10.9           | 9.0             |
| 2015                                  | 10.1              | 19.1           | 13.0            |
| <b>Total spending/GDP (%)</b>         |                   |                |                 |
| 2010                                  | 35.5              | 36.9           | 36.2            |
| 2015                                  | 44.6              | 48.4           | 46.2            |

**Figure 1 – Required funding levels under MIC targets – in constant 2000 (GH¢ million)**



**Figure 2 – Marginal returns to public investments in Ghana**



*Financial and technical support by members of the Agriculture Sector Development Partners Working Group, from the Economic Community of West African States (ECOWAS), the African Union Commission (AUC) and the International Food Policy Research Institute (IFPRI) is acknowledged.*

## REPUBLIC OF GHANA

Ministry of Food and Agriculture  
 P. O. Box M37  
 Accra, Ghana  
 Tel: (+233) 21 666567  
 Fax: (+233) 21 668245  
[www.mofa.gov.gh](http://www.mofa.gov.gh)