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## Opportunities and Challenges in the Production of Maize in Northern Ghana: Insights from a Household Survey

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### Abstract

Maize is one of the most important crops produced and consumed in Ghana, accounting for 58% of local cereal production. Increasing food prices worldwide and the gap between production and consumption of maize in recent years in Ghana present the country with growing import bills and higher prices for consumers. The purpose of this study was to analyse whether farmers in the northern sector of Ghana have a comparative advantage in the production of maize as import substitution. In addition the results of the study were compared with an earlier work, in the same area, before fertiliser subsidies were implemented. The effect impact of the fertiliser subsidy programme on the yield it self and consequently on the private and social profitability has been tested. Fertiliser subsidy programs are one of the most popular policy programs in Africa. In the mid-90s many countries introduced them to increase crops yield.

Household survey data of the cropping season 2010 were collected and complemented with data from different institutions. We applied the Policy Analysis Matrix (PAM), to assess policy effects on production systems, and the Cobb-Douglas production function to identify factors affecting the output of each system. The results suggest that production systems with yields above the national average of 1.5 tonnes per hectare are profitable at private level and contribute to growth of the national economy. Farming systems producing below this threshold report negative social profits, implying that they do not use scarce resources efficiently in the production of maize and depend on government intervention. However, the analysis suggests that current policies increase the profitability of maize production in the two systems analysed.

The policy implications of these findings are, first, the need to improve extension services that address the real constraints farmers face. Second, the use of fertiliser should be coupled with other inputs and knowledge to maximise the efficiency of each. Furthermore, the lack of access to credit should be addressed as well as the improvement of the infrastructural network. In conclusion, we it consider essential to combine single factors and used in synergy to realise the full efficiency of each.

**Keywords:** Cobb-Douglas, comparative advantage, Ghana, maize, policy analysis matrix