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## MAIZE PRODUCTIVITY AND RURAL POVERTY REDUCTION IN A LIBERALIZED FERTILIZER MARKET IN NIGERIA

Orefi Abu

Department of Agricultural Economics, University of Agriculture, Makurdi, Nigeria

### Abstract

*Over the years agricultural productivity has been a major concern for agricultural policy because of its influence on development. An important share of total agricultural productivity growth has been attributed to increased use of fertilizers. Consequently, improvement in productivity is crucial in attaining growth in the Nigerian economy since agriculture provides a major means of livelihood for about 70 per cent of the population. Maize is one of the most important staple food crops grown in Nigeria. More than 70 per cent of fertilizers dedicated to cereals production in Nigeria are used for maize production. Fertilizer prices have generally risen over the years as a result of fertilizer market liberalization. This in itself may have unfavourable implications for agricultural productivity and rural poverty reduction. This study examines the effect of fertilizer market liberalization on the productivity of maize and rural poverty reduction in Nigeria, using Data Envelopment Analysis (DEA) Malmquist index. Data were collected from 1990-1996 (pre-liberalization period) and 1997-2006 (liberalization period). Results reveal an increase in total factor productivity (TFP) growth of 4.7 per cent during the pre-liberalization period as compared to a decline in total factor productivity (TFP) growth of 5.4 per cent during the liberalization period. This could be due to high fertilizer price owing to transportation cost, inadequate supply, artificial scarcity and inefficient fertilizer distribution system leading to a fall in fertilizer usage among smallholder farmers who produce most of the crops grown in Nigeria. Since there is a direct relationship between agricultural productivity growth and poverty reduction, this result implies that the decrease in maize total factor productivity during the liberalization period led to a decrease in earnings of farmers as well as less financial capital for investment, thus increasing rural poverty. This study in line with several other studies in sub-Saharan Africa countries has shown that fertilizer market liberalization has not stimulated increased crop yield, raised agricultural production or raised income of smallholder farmers. It is concluded that, the liberalization of the fertilizer market did not accomplish the benefits expected from the process. It appears that fertilizer market liberalization may not be appropriate for an economy that is dominated by millions of smallholder resource poor farmers. Consequently, improving access to fertilizer by re-introducing fertilizer subsidy targeted at smallholder resource poor farmers may not be out of place to enhance maize productivity in order to boost food security position, increase farmers' income and lighten poverty in rural households. An effective fertilizer distribution channel should be put in place to ensure that subsidized fertilizer gets to farmers as early as possible.*

*Keywords: maize, Malmquist index, total factor productivity, poverty, fertilizer, liberalization*