

Agricultural Productivity Growth in Kagera between 1991 and 2004

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Key Message:

Farms in Kagera became smaller and more labor intensive between 1991 and 2004 but no more productive. Increases in consumption were attributable principally to the growth in off-farm activities.

I. Motivation for Research

The role of agriculture in economic growth and the wider structural transformation of Tanzania is a key concern for policy makers. Understanding whether the main driver of rural income growth lies in productivity growth within agriculture itself or through the growth of off-farm activities is particularly important in countries like Tanzania, where 80% of its residents depend on agriculture for their livelihood and 70% reside in rural areas. This paper studies agricultural productivity growth in the Kagera region of Tanzania between 1991 and 2004, provides a decomposition in terms of the returns to various inputs such as land and labor, and measures the adoption of modern inputs.

II. Key Findings

Farms have become smaller, in terms of land area and labor used. The average size of farms decreased by 24% between 1991 and 2004 and labor used in the farm decreased by 16%. Given the faster decrease in land compared to labor, agriculture has become more labor intensive over the sample period. The biggest drop in the workforce comes from the drop in teenage employment (12-19 year olds) with a reduction of 39% for male teenagers and 44% for female teenagers.

The range of crops planted by farmers in Kagera changed little between 1991 and 2004.

Coffee, banana, beans, maize, cassava, sweet potatoes and mangoes are the main crops and cultivated by at least 60% of farmers both in 1991 and 2004. When looking at crops for sale, coffee ranks first in both points of time with more than two thirds of farmers producing coffee, followed by bananas and beans.

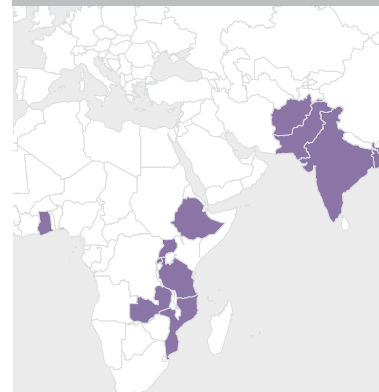
The already low use of inorganic inputs decreased even further between 1991 and 2004.

While 4.8% and 9.3% of farmers used fertilizer and pesticides in 1991, respectively, the percentage of farmers adopting these inputs decreased to 3.2% and 6.7% in 2004. The use of these inputs is even lower for farmers who are not engaged in any other activity outside farming.

Instead, households tend to use manure and hire in additional labor in preference to purchased inputs. The use of manure increased from 7.8% to 23.3% in the sample period and the proportion of farmers hiring in labor increased from 25.7% to 32.7%. Together with the decrease in inorganic inputs, this suggests that households are substituting labor for purchased inputs.

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Households solely dependent on farming have experienced significantly lower growth in consumption (compared to the sample average).

Average household consumption in the sample was 1.8% per annum, but was only 0.3% per annum for households not engaged in any other activity than farming. Farming households with off-farm employment saw consumption rise by 0.7% per year, while those who left agriculture enjoyed a 4.9% per year growth in consumption.

Average producer prices have grown more slowly than consumer prices, in particular for coffee, leading to a deterioration in the terms of trade for farmers.

However, there are important differences across crops. While the producer price of coffee appears to have increased by markedly less than consumer prices, the producer prices of maize, beans and bananas have increased by more than consumer prices.

Our results suggest that there has been a reduction in the value of total crop output and there is no evidence for growth in the value of output per worker or output per acre between 1991 and 2004. However, households that are only engaged in agriculture seem to have experienced some catch-up in terms of higher growth in value of crops sold.

There is no evidence for higher productivity of land and labor in 2004 compared to 1991. In both periods, capital is the input into production that matters most for output. Further, households that used fertilizer and manure had higher levels of output.

In conclusion, the results from this study suggest that the agricultural sector only made a moderate contribution to growth in Kagera in the period of 1991-2004. The fastest growth was experienced by individuals who left agriculture and those who stayed did not intensify production through the increased use of modern inputs but rather through increased use of labor on more marginal land.

III. Dissemination:

For more information on this paper and related work please contact

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Further reading

Further details may be found in the following:

Lokina, R., M. Nerman and J. Sandefur (2011). Poverty and Productivity: Small-Scale Farming in Tanzania, 1991 – 2007, Preliminary results for International Growth Centre commissioned study.

De Weerd, J. (2010). Moving out of poverty in Tanzania: Evidence from Kagera, *Journal of Development Studies*, 46(2), 331 - 349.

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