Improved Varieties of Maize and Mineral Fertiliser in Kenya: Determinants and Intensity of Use by Smallholder Farmers

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Abstract

Kenya relies on agriculture as main source of livelihood, being responsible for 26 percent of the national gross domestic product (GDP) and supplying 75 percent of the population with jobs. Maize (*Zea mays*) is the foremost staple food crop in Kenya. In the past decades, growth in population and domestic consumption of maize grew faster than the growth in production, the latter being restricted as the arable area in Kenya can no longer be extended. Therefore, improving national food security can only be met by increasing maize yields, and a dominant strategy in Kenya was to support smallholder farmers to grow a higher share of improved varieties of maize and to increase their use of mineral fertiliser, especially in conjunction with higher-yielding hybrid maize varieties.

This paper uses a national representative survey data from maize-producing households in Kenya collected by CIMMYT between December 2012 and February 2013, referring to the 2012 cropping year. We first perform a descriptive statistical analysis of the adoption rate and use intensity for improved maize varieties and mineral fertiliser. Preliminary results show 59.5 % of mineral fertiliser adoption and 79.5 % of improved maize seeds adoption among the 1230 households analyzed, within the six agroecological zones of maize in Kenya. In the second part of the paper, we analyse the determinants of adoption and use intensity through a bivariate probit and bivariate censored tobit model respectively. Lastly, along with an extensive literature review on the adoption of agricultural technologies, this paper draws conclusions with implications for research and policy.

Keywords: Kenya, Maize, Mineral fertiliser, Smallholder farmers, technology adoption

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