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Barriers to the Adoption of Non-certified Organic Agriculture by Smallholders in Sub-saharan Africa: Evidence from East Mau Catchment, Nakuru, Kenya

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Abstract

Food insecurity continues to be pervasive in Sub-Saharan Africa. Agricultural productivity is very wobbly mainly due to soil fertility problems. In the stir of the resource constraints for external farm inputs faced by smallholder farmers in the region, sustainable agriculture that relies on on-farm or local resources presents desirable option for enhancing agricultural productivity. Organic agriculture is frequently promoted as an exit strategy from food insecurity and poverty for small-scale farmers in these regions. Potential benefits include affordable and enhanced soil repletion, environmental health, poverty alleviation among others have been widely documented. However, uptake has been slow and promotion and research into sustainable technologies has had little impact on its adoption. This paper investigates the barriers to adoption of non-certified organic agriculture technologies by smallholder farmers in Kenya. Economic, demographic, institutional as well as farm characteristics are explored to unravel their role. The Mau catchment was purposely selected as a case study because of unprecedented land use change representative of a typical fast degrading high agricultural potential highland. A comprehensive smallholder farm survey of 292 households provides data for this analysis. A set of 14 organic farming techniques were evaluated on the farms. The most important techniques found were: intercropping, crop rotation, use of animal manure and composting, soil conservation techniques (terracing, agroforestry). Other techniques practised by farmers included: double digging, use of biopesticides, mulching, zero-tillage among others. However, their adoption displayed a wider inter-household and inter-technique variation. Based on these variations farmers were clustered into three adoption levels: low, medium and high adopters. While there is heterogeneity with regard to the factors that influence adoption across the groups, results from an ordered probit model underscored the importance of membership of farmer groups on adoption decisions. Particularly results indicate that farmers' experience, household size, distance to the road, religion and ethnicity play an important role in the adoption of organic farming techniques among smallholders. Recommendations to facilitate adoption of different techniques include: the creation of more awareness among farmers of soil fertility effects and long-term benefits of organic soil fertility management, market linkages and support the development of farmer groups.

Keywords: Food insecurity, mau catchment, organic agriculture non-certified, smallholders, soil fertility, zero-tillage

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