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Abstract

This study reviews and synthesizes the soil fertility status, management among smallholder farmers and research in the three countries of east Africa, namely Kenya, Tanzania and Uganda. We observe that many studies note the declining soil fertility, mainly due to soil fertility mining, putting crop production in an unsustainable path. Studies have shown that the current soil fertility management practices of recycling crop residue; biomass transfer; short fallow and other organic practices appear to be inadequate to replenish the nutrient outflow. Consequently, a number of case studies have shown crop yield decline in the region. Soil fertility research in east Africa has concentrated on producing recommendation for monocrop systems while most smallholder farmers plant crops in complex intercropping and mixed cropping systems. Additionally even though agricultural prices and soil characteristics are dynamic, recommendations are always based on static input-output price ratio and soil conditions. This research approach and assumptions render many recommendations irrelevant to smallholder farmers. Consequently, adoption of soil fertility technologies in the region is low, even though many farmers appreciate the benefits of these technologies. The need to revise the current soil fertility recommendation such that they take into account the dynamic nature of soils and agricultural prices is apparent.

Key words

East Africa, fertilizer recommendations, trials and use, nutrient mining, soil fertility

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