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Analysis of the Effect of Land Tenure on Technical Efficiency in Smallholder Crop Production in Kenya

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Abstract

Agriculture is the backbone of the Kenyan economy contributing 26 % to GDP and 70 % to employment. Majority of the farmers in Kenya are smallholder farmers possessing less than 3 acres of land. The agricultural sector in Kenya has been facing several challenges among them declining yields. While the decline in yields could be associated with several other factors, it could also be as a result of the effect of insecure land tenure systems which are little understood. This study examines the technical efficiency of alternative land tenure systems among smallholder farmers and identifying the determinants of inefficiency with the objective of exploring land tenure policies that would enhance efficiency in production. The study is based on the understanding that land tenure alone will not be enough to indicate the levels of efficiency of individual farms, other socio economic factors such as gender, education and farm size would also be expected to be important determinants of efficiency. A stochastic frontier approach in a Cobb Douglas form was used to estimate technical efficiency and to identify other factors (other than land tenure) that would affect efficiency. The study is conducted in 22 districts in Kenya and this allows comparison within different land tenures systems that exist among smallholder farmers. Preliminary analysis indicates that households with title deeds status have higher technical efficiency. The education status of the household head is correlated to technical efficiency. The study recommends that land registration process in Kenya should be undertaken in all regions of the country to allow farmers make investments that will lead to increased technical efficiency.

The study showed that parcels with a land title have a higher efficiency level. Other factors such as education status of the head of the household, access to fertilisers, and group participation were also found to significantly influence the technical efficiency of the farm. The study recommends that the process of land registration should be extended to other regions of the country but at the same time other factors such as access to inputs and improvement of education status should be addressed.

Keywords: Kenya, land tenure, smallholder, stochastic frontier, technical efficiency

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