

Are Kenyan Smallholder Irish Potato Producers Technically Efficient? Evidence from Nyandarua North District

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Abstract

There is a consistent declining trend of Irish potato production in Kenya which challenges the food security status of the country. This paper used data from a random sample of 127 smallholder potato producers from Nyandarua North district to assess technical efficiency in resource use and to identify the underlying determinants of variations in production efficiency. A dual stochastic parametric decomposition technique was used to derive technical efficiency indices while a two-limit Tobit model was used to examine the effects of socio-economic characteristics and institutional factors on the derived technical efficiency indices. Results show that resource use is subject to decreasing returns to scale while the mean technical efficiency is 67 percent. Education, access to extension, access to credit, and membership in a farmers' association positively and significantly influence technical efficiency. Innovative institutional arrangements that enhance extension and farmer training, accompanied with improved access to credit is likely to enhance potato production efficiency.

Key words: Food insecurity, efficiency, productivity, stochastic frontier function, Kenya