Adoption and impact of agroforestry on household food security among farmers in Ghana

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Abstract

Agroforestry is becoming more and more recognised as a key tactic for mitigating and adapting to climate change. The usage of fertiliser trees in particular has been pushed as a technique that increases the availability of nutrients for crop production and, through nitrogen fixation, improves soil fertility. There is a dearth of solid information regarding fertiliser tree effects in smallholder farming situations, even if most of the evidence is based on correlational analysis and on-farm tests. This study examines how fertiliser trees, such as *Faidherbia albida* and *Gliricidia sepium*, affect the food security of households. To thoroughly examine the effects of adoption, 500 farmers in Ghana were interviewed and endogenous switching regression was used. The value of food crops rises by 56 % when fertiliser trees are adopted, according to econometric data. When the impacts are broken down by land ownership strata, it becomes clear that farmers with smaller farms– up to three acres–realise the largest gains. Moreover, the use of fertiliser trees along with better maize seeds greatly raised the value of food harvests. With the use of cutting-edge analytical techniques, this study provides initial insights into a growing body of research on the quantitative evaluation of agricultural interventions like agroforestry practices. To fully realise the potential of agroforestry in enhancing soil fertility and household food security, the study offers some policy insights and suggests that future research be planned around development initiatives that take into account fine-scale variation in the social, economic, and ecological context of farmers. This will improve uptake and adaptation.

Keywords: Agroforestry, farmers, fertiliser trees, food security

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