

Assessing the Impact of Adopting Climate Smart Agriculture on Food Security and Multidimensional Poverty: Case of Rural Farm Households in the Central Rift Valley of Ethiopia

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Abstract : Climate change has perverse effects on agricultural productivity and natural resource base, negatively affecting the well-being of the households and communities. The government and NGOs promote climate smart agricultural (CSA) practices to help farmers adapt to and mitigate the negative effects of climate change. This study aims to identify widely available CSA practices and examine their impacts on food security and multi-dimensional poverty of rural farm households in the Central Rift Valley, Ethiopia. Using three-stage proportional to size sampling procedure, the study randomly selected 278 households from two kebeles from four districts each. A cross-sectional data of 2020/21 cropping season was collected using structured and pretested survey questionnaire. Food consumption score, dietary diversity score, food insecurity experience scale, and multidimensional poverty index were calculated to measure households' welfare indicators. Multinomial endogenous switching regression model was used to assess average treatment effects of CSA on these outcome indicators on adopter and non-adopter households. The results indicate that the widely adopted CSA practices in the area are conservation agriculture, soil fertility management, crop diversification, and small-scale irrigation. Adopter households have, on average, statistically higher food consumption score, dietary diversity score and lower food insecurity access scale than non-adopters. Moreover, adopter households, on average, have lower deprivation score in multidimensional poverty compared to non-adopter households. Up scaling the adoption of CSA practices through the improvement of households' implementation capacity and better information, technical advice, and innovative financing mechanisms is advised. Up scaling CSA practices can further promote achieving global goals such as SDG 1, SDG 2, and SDG 13 targets, aimed to end poverty and hunger and mitigate the adverse impacts of climate change, respectively.

Keywords : climate-smart agriculture, food security, multidimensional poverty, upscaling CSA, Ethiopia

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