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"Can agroecological farming feed the world?
Farmers' and academia's views"

# Does adoption of soil conservation practices improves farm productivity and food security? Experience from Tanzania

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**Abstract**

The adoption Soil Conservation Practices (SCPs) has been widely recommended by different experts as a vital strategy to address the cross-cutting problems of food insecurity and climate change. This is well reflected in the Sustainable Development Goals with special attention given to developing countries where the problems of population pressures together with growing climate change are severely impairing farm productivity and thus worsening the food security situations of these countries. However, the level (packages) of adoption and extent to which it translates into different development outcomes is not well established leading to unclear and sometimes confusing policy implications. Using the Tanzania's National Panel Survey (NPS) data for 2019 wave, we employ the Inverse Probability Weighted Regression Adjustment (IPWRA) approach to examine the determinants of farmers' decisions to adopt various SCP packages and the effect of the adoption of each package on farm productivity and households' food security. The findings show that the households' socio-economic and plot characteristics, access to mobile phones, credit, extension services and socio-protection programmes are among the key determinants of households' decision to adopt the SCPs. With regards to the effect of adoption of SCPs, we find that, on average, farmers who adopt more than one package are more productive and food secure relative to non-adopters. Our results show even stronger effect of SCPs for those who adopted all three practices (soil erosion control, fertiliser/manure application and fallowing) than for those who adopted only one or two SCPs. We therefore recommend for promotion of policies that enhance comprehensive adoption of multiple SCP packages a meaningful improvement in farm productivity and food security. Furthermore, the study recommends for promotion of SCP adoption initiatives should go hand in hand in hand other potential policies and such as credit access, quality extension services and social protection programmes to enhance adoption of SCPs and their impact.

**Keywords:** IPWRA, farm productivity, food security, soil conservation practices, Tanzania

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