



Revisiting Climate Smart Agriculture in Smallholder Farmers of Zimbabwe's East African Highlands: A Replication Study

Sibanda Chipungu¹, Chituwo Musuka^{1,2}

¹ University of Zimbabwe, Harare

² Department of Advanced Studies, Africa University

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Correspondence: schipungu@yahoo.com

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Author notes

Sibanda Chipungu is affiliated with University of Zimbabwe, Harare and focuses on Environmental Science research in Africa.

Chituwo Musuka is affiliated with University of Zimbabwe, Harare and focuses on Environmental Science research in Africa.

Abstract

Climate Smart Agriculture (CSA) has been implemented in Zimbabwe's East African Highlands to enhance agricultural productivity and resilience under changing climate conditions. The study employed a quasi-experimental design using pre- and post-intervention data from randomly selected farmer plots. Data collection included agricultural production metrics and socio-economic indicators. A significant proportion (45%) of the treated farmers reported increased maize yields compared to control groups, with an average increase of 20% in yield per hectare. The replication study supports previous findings on CSA's efficacy but emphasizes the need for tailored interventions considering local contexts and resource availability. Implementing CSA should be accompanied by targeted extension services to address specific challenges faced by smallholder farmers in the region. The empirical specification follows $Y = \beta_{0+\beta}^{-} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *East African Highlands, Smallholder Farmers, Climate Change Adaptation, Integrated Assessment Models, Sustainable Agriculture Practices, Participatory Research Methods, Agroecology*

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