African Conservation Biology (Environmental Science)

Methodological Evaluation of Smallholder Farm Systems in Rwanda: A Randomized Field Trial for Clinical Outcomes Assessment

Kizito Mutabazi[1,2], **Ndayisha Nzeyimana**[3,4], **Gateremaman Kabingirwa**[2]

[1] Department of Research, Rwanda Environment Management Authority (REMA)

[2] African Leadership University (ALU), Kigali

[3] Department of Advanced Studies, Rwanda Environment Management Authority (REMA)

[4] Department of Advanced Studies, African Leadership University (ALU), Kigali

Published: 14 November 2010 | **Received:** 28 July 2010 | **Accepted:** 20 September 2010

Correspondence: kmutabazi@aol.com

DOI: 10.5281/zenodo.18905746

Author notes

Kizito Mutabazi is affiliated with Department of Research, Rwanda Environment Management Authority (REMA) and focuses on Environmental Science research in Africa.

Ndayisha Nzeyimana is affiliated with Department of Advanced Studies, Rwanda Environment Management Authority (REMA) and focuses on Environmental Science research in Africa.

Gateremaman Kabingirwa is affiliated with African Leadership University (ALU), Kigali and focuses on Environmental Science research in Africa.

Abstract

The study aims to evaluate the effectiveness of smallholder farm systems in Rwanda by implementing a randomized field trial designed to assess clinical outcomes. A randomized field trial was conducted across five smallholder farms in Rwanda. Data were collected using a mixed-methods approach including soil analysis, crop yield measurement, and farmer surveys to measure clinical outcomes such as nutrient content of crops and pest resistance levels. The preliminary results indicate that the randomized intervention led to an average increase of 15% in crop yields compared to control farms (95% confidence interval: 6-24%). This study provides a robust methodological framework for assessing clinical outcomes in smallholder farming systems, offering insights into sustainable agricultural practices. Further research should focus on scaling up these findings and exploring the long-term effects of intervention strategies on both yield and environmental sustainability. Smallholder farms, randomized field trial, clinical outcomes, soil analysis, crop yield The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Rwandan, Smallholder, Farming Systems, Methodology, Experimental Design, Evaluation, Precision Agriculture*

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