



# Methodological Evaluation of Regional Monitoring Networks in Rwanda: A Cost-Effectiveness Randomized Field Trial

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## Abstract

The effectiveness of regional monitoring networks in Rwanda for agricultural productivity is under investigation. A quasi-experimental design was employed, with random assignment to treatment (intervention) or control groups. Field data were collected using standardised yield measurement tools and socioeconomic surveys. Initial results indicate a marginal increase in average crop yields by 5% in the intervention areas compared to controls, but further analysis is required to confirm this trend over multiple years. Regional monitoring networks show promise as a cost-effective tool for enhancing agricultural productivity, though more longitudinal data are needed to substantiate these findings and identify optimal network configurations. Implementing robust quality control measures and expanding the study's geographical scope will aid in validating the effectiveness of regional monitoring systems. The empirical specification follows  $Y = \beta_{0+\beta} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *Geographic, Monitoring Networks, Methodology, Evaluation, Randomized Trials, Agricultural Productivity, Africa*

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