



Climate-Resilient Rice Varieties and Their Impact on Smallholder Women Farmers in Southern Mozambique: Yield Increases and Food Security Assessment

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Abstract

Rice is a staple crop in Southern Mozambique, particularly important for smallholder women farmers who face climate variability and yield fluctuations. A mixed-methods approach combining household surveys, interviews, and yield assessments to measure changes in crop productivity and farmer well-being over two growing seasons. Climate-resilient rice varieties increased average yields by 20% compared to traditional varieties, with significant improvements observed among women farmers who adopted these crops. The climate-resilient rice varieties not only enhanced yield stability but also contributed to improved food security and income for smallholder women in Southern Mozambique. Government support should be directed towards promoting the adoption of climate-resilient rice varieties among smallholder farmers, with particular focus on women's participation. Model estimation used $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \theta \} \operatorname{sumiell} (y_i, f\theta(\xi)) + \lambda |V\theta rV\theta| 2^2$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, African, Yield-Stability, Ethnoecology, Varietal-Testing, Gender-Inclusion, Climate-Sensitivity*

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