

# A Meta-Analysis of Agricultural Cooperatives and Farmer Resilience in Rwanda: An African Perspective,

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## | Abstract

Agricultural cooperatives are promoted across sub-Saharan Africa to improve smallholder livelihoods and resilience. In Rwanda, national policy has actively encouraged cooperative formation. However, a consolidated synthesis of their effect on farmer resilience, from an African perspective, remains absent. This meta-analysis synthesised empirical evidence on the role of agricultural cooperatives in enhancing farmer resilience in Rwanda. Its primary objective was to determine the extent and mechanisms through which cooperative membership contributes to absorptive, adaptive, and transformative resilience capacities. A systematic search of peer-reviewed and grey literature was undertaken. Included studies reported quantitative or qualitative data comparing resilience outcomes for cooperative members and non-members in Rwanda. Data extraction and analysis involved thematic synthesis for qualitative data and effect size calculation for quantitative data where feasible. The synthesis indicates a predominantly positive association between cooperative membership and enhanced resilience. A key quantitative finding was that members reported a 15–30% higher perceived capacity to absorb climatic and market shocks compared to non-members. Primary mechanisms identified were improved access to inputs, collective marketing, and shared knowledge. Agricultural cooperatives in Rwanda contribute to strengthening farmer resilience, largely through economic and social capital pathways. However,

benefits are not uniform and can be limited by internal governance challenges. Policy should focus on strengthening cooperative governance and financial management. Extension support should prioritise building adaptive capacity via climate-smart training within cooperatives. Further research is needed on long-term transformative outcomes. agricultural cooperatives, farmer resilience, smallholder farmers, Rwanda, meta-analysis, sub-Saharan Africa This study provides a dedicated meta-analysis on cooperatives and resilience in Rwanda, offering an evidence-based African perspective to inform national policy and regional practice.

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