International Initiative for Impact Evaluation

Impact evaluation brief

Agriculture, fishing and forestry

Uptake and evaluation of innovative insurance-embedded credit for promoting resilience and livelihoods among smallholder farmers in Kenya

Weather variability—particularly deficient rainfall or drought—is one of the major causes of low agricultural productivity in Kenya. New technologies provide one avenue by which to increase productivity and improve farm incomes, yet many farmers lack sufficient access to credit with which to avail of these technologies, either due to excessive collateral requirements or lack of awareness of options and/or terms or conditions. Consequently, many farmers in Kenya remain in a steady state of low productivity growth and are mired in persistent poverty traps.

To address these challenges, we work with a private sector lender in Kenya to introduce an innovative, market-based credit solution, namely Risk-Contingent Credit (RCC). RCC is a credit product for farmers where repayment is reduced by a function of deficits of rainfall against long-run averages. Researchers from the International Food Policy Research Institute and University of Greenwich collaborated to conduct an impact evaluation of RCC through a randomised control trial. The evaluation sought to understand credit uptake and its impact on agricultural investment and farmer welfare.

Highlights

- Design and implementation of insurance programs bundled with credit can reduce the high default risk faced by lenders.
- Linking insurance to credit improves the uptake of agricultural credit.
- RCC leads to increased agricultural investment and improved household productivity and welfare.
- Financial institutions keen on growing their agricultural lending portfolio may consider insurance-linked products to offer cheaper and safer loans to farmers.

The intervention

The intervention is implemented in Machakos County in the Eastern province of Kenya. We designed RCC by bundling insurance with credit to achieve the dual advantages of coverage against drought risks and enhanced adoption of technologies that would lead to improved livelihoods. Unlike standard indemnity- and index-based insurance products, RCC does not require farmers to pay premiums upfront and out-of-pocket, hence removing liquidity constraints that create barriers to access for poorer farmers. The insurance component of RCC substitutes for collateral, making it financially inclusive. We developed and implemented RCC in collaboration with private sector partners: Equity Bank Kenya Ltd, Kenya Commercial Bank, and APA Insurance along with reinsurance offered by SwissRe. The RCC business model including institutional setup is depicted below.

To evaluate the uptake, investment, productivity, and welfare benefits of RCC, we implemented a multi-arm randomized control trial (RCT) where we compared RCC to traditional credit without drought insurance attached to it. In the RCT, we randomly assigned 1150 households to one of three groups: traditional credit (TC) (treatment 1; 350 households), RCC (treatment 2; 350 households), or control (no credit; 350 households).

Treatment assignment was done at location-level public lotteries where representatives from all the selected households in a location (90 in total) were invited for initial training on RCC and basic maize agronomic practices. At the end of the training, we conducted public lotteries where farmers were invited to blindly draw a printed chip from an urn to determine which group they would be assigned to, either RCC, traditional credit or control group. The evaluation study involved a baseline survey, two phases of project implementation (marketing of RCC and TC loans), and two follow-up surveys.

© Stephanie Malyon / CIAT

Main findings

- Access to credit, regardless of the type, can improve farmers' agricultural investment which helps transform their livelihoods.
- RCC effects that were higher than traditional credit included intensification indicators such as adoption of chemical fertilizers*, fertilizer spending* and use of improved variety of seeds. (* denotes larger and statistically significant effects)
- Our findings suggest that bundling insurance to credit minimizes the risk of default by smallholder borrowers hence it can unlock credit for smallholder farmers.
- In a situation where climate change is expected to put unprecedented strains on smallholder agricultural systems, RCC can help increase the resilience of the African food system but also improve smallholders' productivity and growth outcomes.
- In summary, findings from RCC suggest potential benefits for farm investment, productivity, and welfare of the participating households, although more evaluation is needed to understand how effects may vary in different contexts.

Lessons for policy and practice

- Our results indicate that policies to promote access to agricultural inputs such as improved seed varieties, investment in fertilizer, and agricultural productivity should consider increasing smallholders' access to credit including bundling insurance with credit products.
- Our findings suggest that developing policies that would hedge smallholder farmers against systemic shocks, such as drought, is one way of enhancing access to credit.
- The use of formal insurance markets is a viable policy since it transfers the risk outside the households and hence protects their collateral.
- Bundling insurance to credit also minimizes the risk of default by smallholder borrowers, which abates lenders' financial risks that threaten their business stability, a common phenomenon when rural agricultural production systems experience systemic shocks such as drought.
- Financial institutions keen on growing their agricultural lending portfolio may then consider insurance-linked products to offer cheaper and safer loans to farmers.
- Insurance/ credit providers should provide greater transparency to farmers by providing continuous index updates using a simplified pictorial tool. In this regard, digital technology such as mobile phones could be an effective communication tool.

About this brief

This brief is based on an impact evaluation report by Apurba Shee, Michael Ndegwa, Liangzhi You, Patrick S. Ward, and Yanyan Liu, Uptake and Evaluation of Innovative Insurance-Embedded Credit for Promoting Resilience and Livelihoods for Smallholder Farmers in Kenya, published in 2023.

This brief was designed and produced by Akarsh Gupta, and Mallika Rao.

International Initiative for Impact Evaluation

IED Independent Evaluation Department

The International Initiative for Impact Evaluation (3ie) develops evidence on how to effectively transform the lives of the poor in low- and middle-income countries. Established in 2008, we offer comprehensive support and a diversity of approaches to achieve development goals by producing, synthesizing and promoting the uptake of impact evaluation evidence. We work closely with governments, foundations, NGOs, development institutions and research organizations to address their decision-making needs. With offices in Washington DC, New Delhi and London and a global network of leading researchers, we offer deep expertise across our extensive menu of evaluation services.

For more information on 3ie's Impact evaluation, contact **info@3ieimpact.org** or visit our website.

3ieimpact.org

July 2025

@3ieNews /3ieimpact 3ieimpact /company/3ieimpact /3ievideos