



## Innovation Lab for Assets and Market Access Policy Brief

Brief 2017-11  
September 2017



### KEY FACTS

Three seasons after BRAC programming in eastern Uganda ended there was no decline in rates of improved seed adoption and farmers still used the program's cultivation techniques.

Gains attributable to BRAC programming sustained despite a village supply network established by the program going into decline.

A randomized phase-out approach can be used to test the sustainability of a development program's impacts and potentially the efficient program length.

## IMPROVED SEED USE AND FARMING PRACTICES SUSTAIN AFTER PROGRAM ENDS IN UGANDA

BY STEPHEN C. SMITH, RAM FISHMAN, VIDA BOBIĆ AND MUNSHI SULAIMAN

Some development programs are designed on the premise that they can trigger lasting changes in poverty or food security. An intervention in eastern Uganda to increase the use of improved seed varieties and basic farming practices among women smallholders was phased out after four years due to a loss of funding. Using an innovative reverse-randomized controlled trial,<sup>1</sup> we found that three seasons after programming ended there was no decline in rates of improved seed adoption and farmers still used the program's cultivation techniques. While these results may be unique to BRAC's programming and the local context, the study has larger implications for determining a program's efficient duration outside of one set by funding cycles.

The NGO BRAC's program in eastern Uganda, launched in 2009 and phased out starting in 2013, sought to improve agricultural productivity, incomes and food security among women smallholder farmers. It did this by improving basic farming methods and by promoting the use of high-yielding variety (HYV) seeds.

Women designated as Model Farmers (MFs) learned more effective agricultural practices and provided training to their neighbors while maintaining model farm plots. Women designated as Community Agriculture Promoters (CAPs) served as input suppliers who sold advanced agricultural inputs, mainly high-yield variety seeds, in their villages.

The very low adoption rates for improved seeds in Uganda is a problem of both demand and supply. BRAC stimulated demand by demonstrating improved seeds through the model farms and by providing training and free samples of BRAC HYV seeds. It stimulated supply by creating local, semi-informal supply chains through the women designated as CAPs.

### Determining Sustainable Gains

Our study sought to understand whether the impacts of the BRAC intervention did in fact persist after they were terminated, as well as the impacts of the phase-out itself. Our reverse randomized controlled trial (or randomized phase-out) is based on a sample of farmers from 15 branches in eastern Uganda, totaling 99 village clusters.

Our experimental design allowed us to separately test the phase-out of support for the Community Agriculture Promoters (CAPs) and Model Farmers (MFs). Only one of these was phased out in each of the two treatment arms in the first two seasons after the program was scheduled to end.

In early 2013, the 99 village clusters were randomly assigned to one of three arms:

- MF phase-out (33): BRAC ended sponsorship of MFs but continued CAP sponsorship
- CAP phase-out(34): BRAC ended sponsorship of CAPs but continued MF sponsorship
- Control (32): The full program continued without changes

In 2014, the remaining treatments in the phase-out arms were discontinued. In this way, we could also determine whether one of the components or the sequence of phase-outs matters more for sustainability.

### BRAC Program Gains Persisted

Three growing seasons after the phase-out of support for MFs, improved practices in the villages continued. Farmers continued to use—and at the same levels—crop rotation, intercropping, line sowing, zero tillage, weeding, irrigation, pest and disease management, and post-harvest management, as taught through the BRAC program. Overall crop yields did not decline.

The effects of phasing-out support for CAPs is more complex. BRAC no longer provided CAPs discounts on seeds or assistance with



transport. Despite this, the use of improved seed in BRAC program villages did not decline (nor traditional seed use increase) in the three growing seasons after the program's end.

After a brief period of adjustment, the total use of improved seed from all sources remained nearly unchanged. Nearly half of women who had been CAPs continued to sell improved seeds but the quantities they sold fell and sale prices rose. However, purchases from local input dealers in these villages rose substantially. Direct purchases of seeds at BRAC area offices also rose modestly.

Our interpretation that these are gains caused by the BRAC programming, is consistent with a separate randomized controlled trial BRAC is sponsoring to evaluate a similar program in southwest Uganda.<sup>2</sup> The program there had substantial and statistically significant impacts on the purchase of improved seeds, crop sales revenues, and the number of crops grown, after only one year. Impacts were also observed using matching techniques comparing farmers in villages in our study area that did not receive the program. Another study found significant program impacts comparing villages straddling BRAC program boundaries.<sup>3</sup>

### Understanding Efficient Program Duration

Our results from the BRAC phase out suggest that some limited-duration program activities that focus on training farmers and establishing market connections can be sustainable after the programming has ended, at least in some contexts. Individuals may only need assistance until they are able to make progress on their own. Likewise, a local economy may only need a temporary push until better practices and available inputs become the norm. In other cases, the costs of learning may remain high, or a project may anticipate a new stream of clients in need even as the problems of current clients are resolved.

Our study makes evident a strong role for rigorous research on program and policy duration. It is far from obvious whether or when to terminate an apparently successful intervention. For example, some extension programs in the U.S. have continuously provided value for farmers since 1870. If a program consistently provides significant net social value, its unsustainability without continued funding is a poor reason to terminate it.

A program's needed duration depends on the local context. In the case of this BRAC program the context included farmers' learning processes



Participants in the BRAC program in eastern Uganda.

and the extent of local input and output markets. Expectations on the role of the local context can contribute to the anticipated efficient program length before it is launched but should also be evaluated systematically as the program unfolds.

To ensure efficient use of funds, we recommend building careful estimations of the most cost-effective duration into a program's design and intermediate evaluations. These can be based on questions that become an intrinsic part of an intervention's theory of change:

- Under what assumptions could the goals of the project be expected to be sustainable after specific periods?
- What reasons are there to determine whether a program should be permanent or recurring?
- Can implementers find ways to re-test initial assumptions and expectations while minimizing disruption, for example by altering participation for a random sample of individuals or communities?

Importantly, decisions about duration should avoid any implicit assumptions that a program should continue for as long as the funding cycle, or that it will be sustainable after funding has run out. This is as important for practitioner organizations as it is for program funders that implicitly create incentives for duration through their structures and cycles of funding. 🌱

*Stephen C. Smith is a professor of economics and international affairs and director of the Institute for International Economic Policy at George Washington University.*

*Ram Fishman is an assistant professor of public policy at Tel Aviv University*

*Vida Bobić is a Ph.D. candidate in economics at George Washington University.*

*Munshi Sulaiman is director of research, evaluation and learning for Save the Children.*

Multiplied project.

<sup>3</sup> The research covered most of Uganda, and used regression discontinuity methods. See Pan, Y. et al. "Extension and Technology Adoption for Food Security: Evidence from Uganda."

### ABOUT THE FEED THE FUTURE INNOVATION LAB FOR ASSETS & MARKET ACCESS

The AMA Innovation Lab at UC Davis mission is to conduct and support research on policies and programs designed to help poor and smallholder farmers worldwide to manage risk, adopt productive technologies and take an active part in economic growth.

With core funding from the USAID Bureau for Food Security to support the U.S. government's global hunger and food security initiative, our research agenda focuses on:

- Financial innovations and risk management
- Adoption of more productive agricultural technologies
- Synergies possible by bundling financial and technological innovations

Online at: <http://basis.ucdavis.edu>.



B A S I S

*This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the Feed the Future Innovation Lab for Assets and Market Access and do not necessarily reflect the views of USAID or the United States Government.*

<sup>1</sup> Fishman, Ram et al. 2017. "How Sustainable Are Benefits from Extension for Smallholder Farmers? Evidence from a Randomized Phase-Out of the BRAC Program in Uganda." IZA Institute of Labor Economics Discussion Paper.

<sup>2</sup> Data are from the BRAC Southwest Uganda Microfinance