



**Impact of the
Agriculture Extension
Programme in Uganda**



Intervention

Agriculture plays an important role in the Ugandan economy as it accounts for three-quarters of employment and half of households' income. Yet, agricultural growth has been slow with prevalence of subsistence farming.

To enhance livelihoods and food security of poor smallholder farmers, BRAC Uganda initiated the *Agriculture Extension Programme* in 2008 to offer a package of support, including extension services, technical support and input supply. It serves around 40,000 women farmers each year by more than 800 BRAC extension workers across 41 districts.

Women farmers 22 and above were selected from communities and trained for the role of *model farmers* (MFs). They mentored groups of 15 to 20 *general farmers* (GFs) through household visits and demonstration plots. Local *community agriculture promoters* (CAPs) were selected and equipped with agricultural inputs, mainly high yield variety (HYV) seeds, to sell at a small profit margin. Microloans were offered for up to 12 months at a 25% interest rate with weekly repayments.



Research

Agricultural Extension and Technology Adoption for Food Security: Evidence from Uganda (Pan, Smith, Sulaiman, 2018, [American Journal of Agricultural Economics](#), Vol. 100(4), pp. 1012-1031, funded by USAID)

Women Farmers and Barriers to Technology Adoption: A Randomised Evaluation of BRAC's Extension Programme in Uganda (Bandiera et al., 2015, funded by ATAI)



Method

The *first study* in 2011 analysed the effects on food security and technology adoption of women farmers under a *regression discontinuity design* (RDD) exploiting an arbitrary 6 km distance-to-BRAC-branch threshold for village eligibility. The data of 3,455 households were collected for the previous two agricultural seasons. The comparison households were selected from the non-served villages located just above the 6 km distance cutoff.

The *second study* (2012-2015) applied a clustered *randomised controlled trial* (RCT) to assess the impact on technology adoption and agricultural productivity. It enrolled 168 communities with 4,366 households in Kabale and Rukungiri districts into a control and two treatment arms:

- (i) receiving agriculture and microcredit intervention in 2012 and
- (ii) receiving agriculture intervention in 2012 and microcredit in 2015.



▲ **5.4**
pp food
sufficiency

▼ **4.9**
pp fewer
selling of
assets to cope
with shocks

▲ **8**
pp crop
rotation

▲ **10**
% engaged
in commercial
farming

▲ **1.15**
agricultural
rate of return

▲ **6.2**
pp adoption of
HYV BRAC
seeds

This agriculture extension programme was highly relevant to the farmers' livelihoods and food security. As per the *first study*, food sufficiency of the treatment households increased by **5.4 percentage points (pp)**, relative to the comparison farmers. Their self-reported per capita food consumption went up by 11.6 pp in the week before the survey. In the month leading up to the survey, treatment households were respectively 6.2 pp and 9.5 pp less likely to limit consumption varieties and to skip meals than the comparison ones.

Among the 54% of households who experienced village-level shock in the 6 months before the survey, treatment households were **4.9 pp** less likely than the comparison ones to sell assets as a coping mechanism. This was largely result of their higher agricultural productivity which increased food availability and helped them through such crises.

Demonstration farms and technical assistance significantly increased the use of manure (9.2 pp), irrigation of land (3 pp) and crop rotation (**8 pp**), relative to the comparison farmers. The programme also helped to increase the likelihood of growing up coffee among other crops by 4.2 pp.

The second study found the agriculture programme increased the likelihood of households to be engaged in commercial farming by around **10%** as a result of their higher productivity. The agriculture rate of returns significantly increased by **1.15** among the treatment farmers - each dollar of input generated an additional \$1.15 of output. This corresponds to a 50% increase over a season as opposed to the control farmers who spent 98 hours more working on land.

Finally, the social connections built through extension workers relaxed HYV seeds' availability and affordability constraints. Farmers were 12 pp more likely to find HYV seeds useful which increased their adoption of BRAC seeds by **6.2 pp** in two years, relative to the control farmers. This did not come at the expense of the use of HYV seeds from other sources.

➤ Way Forward

As evidenced by the both studies, the programme was effective in driving the overall improvement of basic cultivation methods, with low upfront monetary investment and fewer adoption constraints. In response, the modern farming increased which contributed to more productivity and food security of marginalised farmers.

To secure equity and efficiency of the intervention, implementers should understand the social connections of the extension workers as these determine beneficiaries who will be targeted. Future interventions could also explore implementing different components in a sequence to understand its impact on cost-effectiveness.