Project Update: Complementarities of Training, Technology, and Credit in Smallholder Agriculture: Impact, Sustainability, and Policy for Scaling-up in Senegal and Uganda

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• Slow implementation by trilateral governments.
• Randomization done:
  – 144 sites that satisfied all objective program criteria and had existing female or mixed-gender agricultural groups were identified in the target program regions (Thies, Diourbel and Fatick)
  – Half of eligible sites were randomly chosen for treatment
  – Stratification at department-gender combination level
• Eagerly awaiting implementation
Uganda - Phaseout

• BRAC Program components:
  – Community Agriculture Promoter (CAP) = supply chain for improved seeds
  – Model Farmer (ModF) = demonstration + training

• 3 treatment arms:
  1. Continuation – both CAP and ModF are continued
  2. CAP Phaseout – CAP is discontinued, ModF not
  3. ModF Phaseout – ModF is discontinued, CAP not

• Preliminary tests of phaseout impact

\[ Y = \alpha + \beta_0 \times \text{phaseout} + X \]
\[ Y = \alpha + \beta_1 \times \text{CAPphaseout} + \beta_2 \text{ModFphaseout} + X \]
No significant effect of phase-out on agricultural practices

- Estimate of overall phaseout effect ($\beta_0$); coefficient result remains similar when disaggregating to phase-out type
- Coefficient result remains similar even when the sample is restricted to those farmers who were trained in the last (or last two) seasons
Impact on Use of Improved Seeds: Substitution from BRAC to Market

Joint effect of CAP and Model Farmer phaseout on improved seed use and sources of seed

Coefficient estimates 90% confidence interval

- Improved seed use
- BRAC sources (CAP and Model Farmer)
- Market sources
- Informal and semi-formal sources

All farmers | Farmers who used improved seeds in both t-1&t-2 | Farmers who did not use improved seeds in t-1 and/or t-2
Impact of CAP Phase-out

Effect of CAP phaseout on improved seed use and sources of seed

- Improved seed use
- CAP
- Model Farmer
- Market sources
- Informal and semi-formal sources

Coefficient estimates
90% confidence interval

All farmers | Farmers who used improved seeds in both t-1&t-2 | Farmers who did not use improved seeds in t-1 and/or t-2
Impact of Model Farmer Phase-out

Effect of Model Farmer phaseout on improved seed use and sources of seed

- Improved seed use
- CAP
- Model Farmer
- Market sources
- Informal and semi-formal sources

Coefficient estimates 90% confidence interval

All farmers
Farmers who used improved seeds in both t-1&t-2
Farmers who did not use improved seeds in t-1 and/or t-2
Initial takeaways

• Improved seed use remains high (or?) in phase-out groups
• The phasing out of both program components strongly reduces purchases from the CAP, motivating farmers to purchase improved seeds from market sources
• The effect appears to be stronger the longer the farmers have been using improved seeds; for those who haven’t used improved seeds in recent seasons, no effect
• Agricultural practices taught by model farmers appear unaffected by the phaseout
• Context: Relationship of the phase-out impact results to initial program impacts – New RD results
RD Estimates of Initial Program Impact

- RD estimates at BRAC’s program cutoff at 6km from centers
- Program significantly increased farmers’ usage of improved cultivation methods that are relatively low-cost
- But minimal impact found on adoption of relatively expensive inputs including HYV seeds.
- The adoption rates of manure, inter-cropping, crop rotation and irrigation increased by 9.8 pp, 13 pp, 11.6 pp and 6 pp, respectively.
- The program also significantly increases farmer’s production value on major crops by 47.2%, raises savings by 79%,
- Improved farmer food security measured by food consumption quantity and variety, meal frequency, and self-reported anxiety related to food availability
- From the results, increased agricultural output and improved food security are attributed to the adoption of inexpensive farming methods.