

Key findings from randomized evaluation of microcredit and agriculture services in Uganda

Introduction

Reducing poverty in Africa remains a major policy challenge. Promoting micro-enterprise growth by extending credit services and fostering agriculture productivity through extension services are two of the most common strategies in poverty reduction policies of most countries. Recent evidence on microcredit services shows a moderate effect of credit on income and well-being of borrowers (Banerjee et al, 2015). On the other hand, evidence of agriculture extension

programmes on poverty reduction varies substantially. Much of the variations are due to the programmes being more diverse in the composition and intensity of the specific interventions. However, there is a general consensus about the need for improving agriculture productivity for sustainable poverty reduction in Sub-Saharan Africa. Given the importance of financial and agriculture sectors in poverty reduction, this paper evaluates both types of services in a single setting.

Contact:

Munshi Sulaimon
BRAC International
munshi.sulaiman@brac.net
T: +256 758 832 800

Emily Coppel
BRAC USA
emily@bracusa.org
T: +1 212 808 5615

Vittorio Bassi
University College London
vittorio.bassi.09@ucl.ac.uk

These findings are based on an ongoing study "[Women Farmers and Barriers to Technology Adoption: A Randomized Evaluation of BRAC's Extension Program in Rural Uganda](#)" by Oriana Bandiera, Robin Burgess, Erika Deserranno, Ricardo Morel, Imran Rasul and Munshi Sulaiman. We are grateful to BRAC management at headquarter and in Uganda office for extending their full cooperation in implementing the project. Generous support from MasterCard Foundation, ATAI and anonymous donor are appreciated.

For more details on this note and the project, contact munshi.sulaiman@brac.net.

Interventions

The particular programmes evaluated in this research are implemented by BRAC in Uganda with financial support from the MasterCard Foundation. Recognizing the multiple constraints that the poor households face in lifting themselves out of poverty, BRAC has adopted a multi-dimensional approach in their development programmes. Besides cost efficiency in delivering multiple services using one administrative platform, there are important operational advantages of implementing different programmes simultaneously. Consequently BRAC has other important programmes in primary healthcare, education and youth development. However, this evaluation assesses at the impacts of their microcredit and agriculture extension services only.

The microcredit programme offers a group loans with weekly repayments. Each group member takes a loan of USD 200-400 to be repaid typically in 40 weeks. These loans are offered only to women who mostly self-select themselves into the groups. In the agriculture programme, trainings are provided on crop production practices for improving productivity in (such as line sowing, proper spacing, inter-cropping and crop-rotation) through a model farmer. These model farmers are also provided with supports and guidance by BRAC for establishing demonstration plots. To create access to high yielding varieties of seeds, community based promoters are supplied with high yield varieties of seeds that they sell in their communities for a small margin. Similar approach of training, demonstration and access to inputs is adopted for improving productivity in poultry and livestock rearing.

Evaluation Design

We conducted a randomized impact evaluation of the two programmes at four BRAC branches in two districts of Western Uganda (Kabale and Rukungiri). A total of 231 villages were identified as potential intervention area under these branches. These villages were randomly assigned into four groups – a) microcredit only (62 clusters), b) agriculture only (58 clusters), c) both microcredit and agriculture (52 clusters), and d) control (59 clusters). A household census was done in all these villages to develop a sampling frame in early 2012. Baseline survey was conducted in May-July of 2012 to cover 7,716 households. Following this baseline survey, interventions were rolled out in all the treatment villages during July-December 2012. A follow-up survey was conducted during March-June of 2014. About 7,000 households could be interviewed in the follow-up survey, which gives us an attrition rate of 9%.

The analysis presented in this brief uses all the households in the panel data. We measure the effects on the economic activities and income of the households in the three types of intervention villages by comparing with the averages in control villages. Although only a fraction of the households actually received the interventions by the time of this follow-up survey, our impact estimates show the average effects on the whole villages. This ‘intention to treat’ effect is considered as a conservative estimates of the true impact. In fact, by the follow-up survey only 8% of the households assigned for credit programme took a loan from BRAC. Similarly, 10% households received training from any of the BRAC agriculture extension agents. Therefore, **this evaluation is measuring the short-term effects on the whole village of offering either or both types of services.**

Key Findings

Providing access to credit only generates growth in the non-farm business sector.

We find that injecting capital in the villages created growth in non-farm businesses (Figure 1). In the credit only villages, the households on average spend 35% more time in this activity compared to control villages. Part of this growth in non-farm activities is taking place through reduction in livestock rearing activities (18%) in these villages. There is no significant change in the composition of economic activities (in terms of average hours spent)

in the other two treatment groups. Although there seems to be a reduction in non-farm businesses and livestock rearing in the ‘agriculture only’ villages, the estimates are not statistically significant. A plausible explanation of the zero effects on the allocation of work hours in the ‘credit + agriculture’ villages is that while some households increased their businesses, others reduce this activity to spend more time on crop production. These two changes counteract against each other to yield zero net effects when aggregated at village level. Finally, there is no change in average hours spent by the households in wage employment in any of the three treatment groups.

Figure 1. Impact on engagement in different economic activities



Agriculture extension increases income from crop production when provided without credit, but combining credit and extension services creates bigger impacts on income from crop production.

The explanation of the zero effect on total labour hours in crop production at village level is supported by the impacts on income from this activity. Providing agriculture extension services only increased average income from crop production by UGX 23,000, which is about 35% of the average household income from crop production in control villages (Figure 2). This effect is more

pronounced in the villages where both credit and agriculture extension services were offered (UGX 35,000 and 50% respectively) although the two estimates are not statistically different. In the credit only villages, average increase in income from non-farm business is about UGX 9,000, which is 69% of the average household income from this activity in control villages. The relatively small effect on non-farm business income in absolute terms being very large effect in percentage terms essentially reflects the lower prominence of non-farm activities in this particular context of predominantly small-holder farmers.

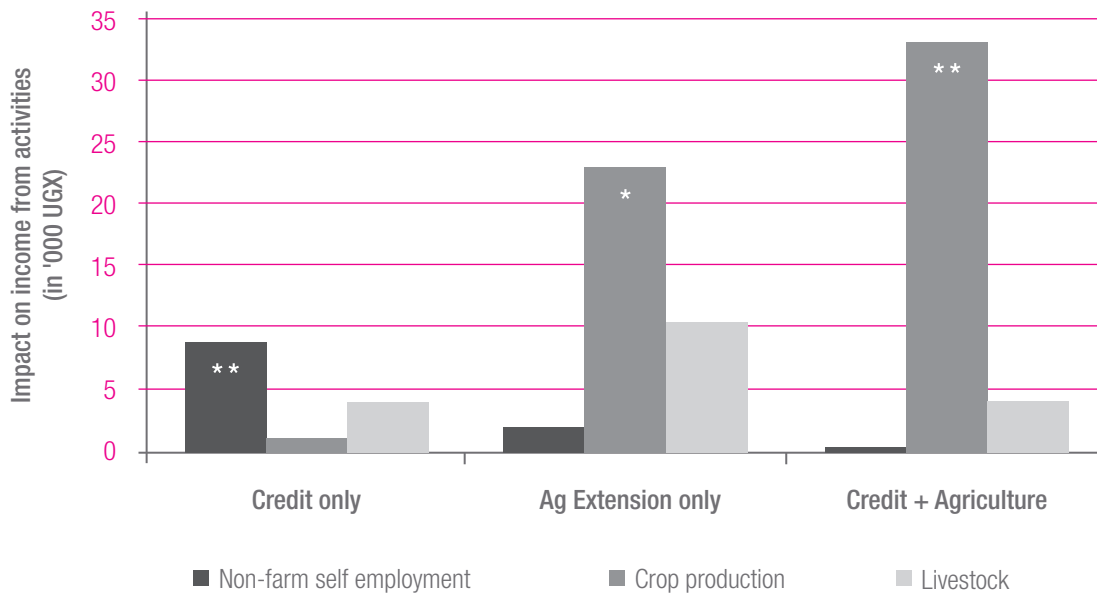


Figure 2. Impacts on income from different activities¹

¹We measure income as the profit from activity by deducting all the expenses (except the opportunity cost of their own labour) from total revenue or value of production.

Proximity to trading centre is a key for microcredit to generate growth in non-farm business.

In order to assess how the impacts vary by proximity to market, we divided the villages into four groups by the time needed to travel to their respective nearest trading centres. Figure 3 shows the impact estimates for ‘credit only’ villages on income from non-farm business by their distance to the trading centres. We find that the average effect observed in the previous graph is coming almost entirely from the villages which have a trading centre within half-an hour of travel time. There is no effect of credit on this outcome if they are located at least one hour away from their nearest trade centre.

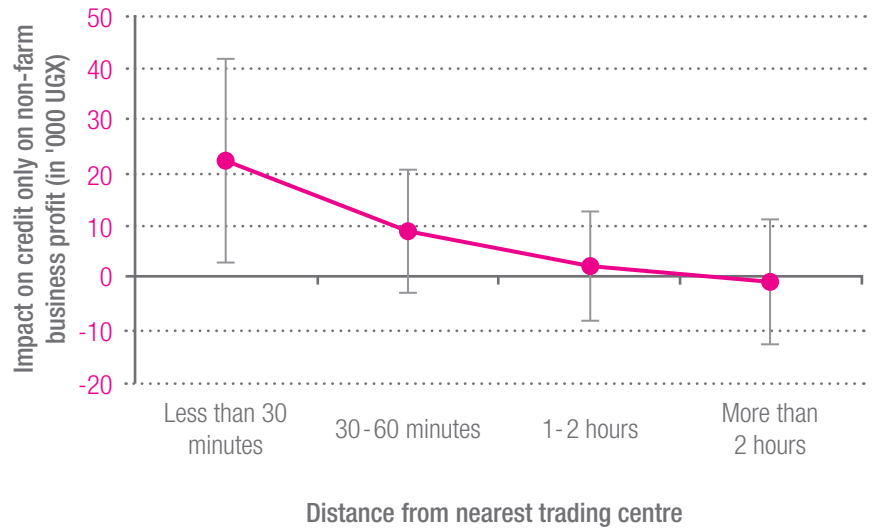


Figure 3. Impact of ‘credit only’ on income from non-farm business

The largest effects of agriculture extensions are in villages with moderate distance from trade centre.

The differences in impact on income from crop production show a non-linear pattern by proximity to trade centres. While some proximity is necessary for increasing income from this activity, the largest effects are in villages that are between 30 and 60 minutes from a trade centre.

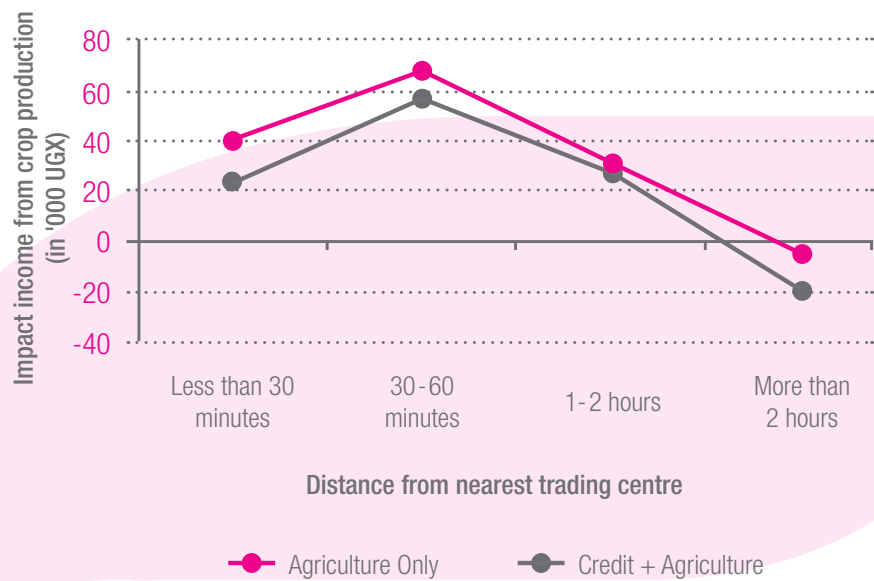


Figure 4. Impacts on income from crop production

Policy Implications

Although broadening financial inclusion has become a priority in development policies, increasing reach of credit services is not sufficient to generate impact on income for those who live farther away from markets. Usefulness of other financial services needs to be explored for these communities while expanding credit services in communities with stronger connection with cash economies.

Given the importance of proximity to trading centres for both agriculture extension and credit for making an impact, there needs to be stronger market linkage initiatives for remote villages.

Future Questions

This brief presents aggregate village level impacts on economic activities and income at. Further analysis of the data will look into the effects on the intervention participants. The full report will also discuss the mechanisms of the impacts on economic activities and income. Impacts on welfare indicators, especially consumption and food security, should be assessed over longer-term.