

Impact case study (REF3)

Institution: University of East Anglia		
Unit of Assessment: 22 – Anthropology and Development Studies		
Title of case study: Enabling smallholder farmers' investment in Uganda through new agricultural insurance products		
Period when the underpinning research was undertaken: 2004 - 2016		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Arjan Verschoor (UoA22) Ben D'Exelle (UoA16)	Professor of Economics Professor of Economics	2004 – Present 2010 – Present
Period when the claimed impact occurred: September 2014 – July 2020		
Is this case study continued from a case study submitted in 2014? No		
1. Summary of the impact		
<p>In sub-Saharan African countries like Uganda, smallholder farmers face frequent, severe droughts and erratic rainfall patterns, intensified in recent years because of climate change. These hazards are compounded by plant pests and poor-quality seed. UEA research into how Uganda's smallholder farmers perceive risk led to the development of a new agricultural insurance scheme, a public-private partnership. The scheme now protects about 200,000 smallholder farmers against the major risks to their livelihoods, with demand rapidly rising. This boosts productivity by providing smallholders with the confidence to invest in their farms. Insured farmers increase investment by 60-100%, which offers a safe way out of poverty and is an important step towards food security for the country.</p>		
2. Underpinning research		
<p>Sustainably raising agricultural productivity is essential for food security and poverty reduction, especially in sub-Saharan Africa. This requires substantial investment among farmers, most of them smallholders. In Uganda 1 in 5 of the population of 45 million live in extreme poverty, with poverty concentrated among the 70 per cent whose livelihoods depend on agriculture. Almost all of Uganda's farmers farm less than 2.5 hectares of land. Underinvestment in farms means food insecurity and poverty keep their productivity low, and farmers on the edge of survival. They face hazards such as droughts, erratic rainfall due to climate change, locust attacks, and counterfeit or damaged seed which fails to germinate.</p> <p>Since 2004 a team from the University of East Anglia led research in Uganda on how farmers cope with these risk factors. Almost 3,000 farmers have taken part in economic experiments and surveys. Together with in-depth interviews with local experts on agriculture, this provided new insights about how farmers decide on taking risks and how they share risks.</p> <p>The first UEA research insight is that farmers only invest what they can afford to lose [R1, R2 and R3 in Section 3]. When considering buying better seed or other inputs, they often limit their investment to the cash they have spare. They avoid taking out loans because drought wipes out their harvests approximately one year in six. This means loans cannot be repaid, the bank appropriates their land, and they lose their main livelihood. For farmers on the edge of survival, investment decisions are a matter of life and death.</p> <p>The second UEA research insight is that farmers typically support each other when one of them has a specific need, such as a failed investment. Paradoxically, this discourages investment, as farmers prefer not to expose their peers to their own risks [R4].</p>		

3. References to the research

R1 to R4 are all in good peer-reviewed journals:

- [R1] Risk Attitudes and the ‘Vicious Circle of Poverty’.
Mosley, P. and **Verschoor, A.**
The European Journal of Development Research, **2005**, 17(1): 59-88.
DOI: 10.1080/09578810500066548.
- [R2] Choice under Uncertainty: Evidence from Ethiopia, India and Uganda
Harrison, G. W., Humphrey, S. J. and **Verschoor, A.**
The Economic Journal, **2010**, 120(March): 80–104.
DOI: 10.1111/j.1468-0297.2009.02303.
- [R3] Lab and Life: Does Risky Choice Behaviour Observed in Experiments Reflect That in the Real World?
Verschoor, A., D’Exelle, B. and Perez-Viana, B.
Journal of Economic Behavior and Organization, **2016**, 128(August): 134-148.
DOI: 10.1016/j.jebo.2016.05.009.
- [R4] Investment Behaviour, Risk Sharing and Social Distance
D’Exelle, B. and Verschoor, A.
The Economic Journal, **2015**, 125(584): 777-802. DOI: 10.1111/econj.12264.

Grants

A Behavioural Economic Analysis of Agricultural Investment Decisions in Uganda

Verschoor, A. (PI) and **D’Exelle, B.** (Co-I)

Funder: Economic and Social Research Council. Amount: GBP348,444.80. Dates: 2012 - 2015

4. Details of the impact

Together, the two UEA research insights described in Section 2 suggested a specific role for agricultural insurance. Informal insurance (mutual support) discourages investment, which points to a role for formal insurance [R4]. Formal agricultural insurance could encourage investment, provided all major risks are included [R1, R2 and R3]. Yet crop insurance is usually unfeasible for smallholder farmers due to the high costs of claim verification. Weather index insurance (whereby compensation is based on a weather index correlated with crop growing conditions) is more feasible, but still leaves major risks such as pests and counterfeit seed uninsured. UEA research thus pointed to weather insurance combined (‘bundled’) with protection against these other risks [S1 and S2 in Section 5].

Building on these insights, UEA researchers co-produced risk management solutions, working with government officials, farmers and insurance companies, in three stages of research dissemination described below. These risk management solutions make use of satellite images to offer farmers insurance against droughts and erratic rainfall. Inspired by the UEA research, weather insurance is now offered together with certified seed and other agricultural inputs, so that the major risk factors are taken care of. This gives farmers confidence to invest and provides them with a safe way out of poverty.

Impact 1: The government of Uganda decides to promote agricultural investment through bundled weather index insurance.

In the first research dissemination stage, UEA research insights were discussed with farmers, field specialists and representatives of government, NGOs and the private sector: about 50 individual meetings between March 2012 and June 2015 and four workshops attended by c.100 people [S1]. The discussions focused on the agricultural inputs that weather insurance should be ‘bundled’ with, so that the major risks to crop growing are protected against, and loans for high-productivity

agriculture can be taken out with confidence [S1, S2]. A best-practice analysis of UEA research in Uganda was commissioned by the DFID-ESRC Growth Research Programme (DEGRP) to help other researchers see how they might enhance the impact of their own work. It found that the collaborative, iterative approach taken by UEA researchers helped *'boost the standing of smallholder farmers in Ugandan policy discussions'* [S5, p. 8] and provided evidence to bolster the mission of the country's leading agricultural consultancy, AT Uganda who set out to promote agricultural innovation in Uganda [S5, pp. 10-11]. This paved the way for the policy impact that resulted for the period 2015-2020.

In the second research dissemination stage, UEA researchers worked with the Ugandan policy advocacy network PASIC (Policy Action for Sustainable Intensification of Cropping Systems), who have a desk in the Ministry of Agriculture, to identify and approach the relevant government officials for influencing policy. This led to the two main government agricultural policy documents for 2015-2020, the main one of which is the Agricultural Sector Strategic Plan, to draw on UEA research to advocate 'bundled' weather index insurance for promoting agricultural investment. The former Senior Policy Analyst for the Ministry of Agriculture, wrote to Verschoor, *"In the original draft of the Agricultural Sector Strategic Plan 2015/6-20, promoting weather index insurance had not been mentioned as one of the five core activities that will be implemented within the Uganda Climate Smart Agriculture. As a result of your research recommendations, weather index insurance has been incorporated in the final draft. This would not have been possible if you had not shared with us your research recommendations as this provided the necessary evidence to lobby for these changes. [T]he role that weather index insurance can play in facilitating the transition [...] to progressive farming strategies is [...] appearing on Uganda's policy frameworks on agriculture for the first time as a result of your research recommendations'* [S3].

This policy impact required intensive engagement with farmers, field specialists, government officials, insurance experts and other stakeholders. Experts on evidence-based policy making have noted that the collaborative nature of this approach facilitated impact. The head of the Research and Policy in Development (RAPID) programme at the UK's Overseas Development Institute, writes in a 2019 blog *'A project on farmers' attitudes towards risk in Uganda [...] developed a highly collaborative, iterative approach to engagement, working with farmers, as well as local and national policy makers to co-create policy proposals that would work at all levels'* [S4].

The agriculture theme lead at the DFID-ESRC Growth Research Programme (DEGRP), comments on the unusual care UEA researchers took to tease out policy relevance of their findings: *'In this case, however, we have a rarity. The study used experimental economics to elicit farmer perceptions of risks in agricultural investment. The researchers next discussed their findings with farmers and field specialists in the locality where they carried out their studies to identify possible practical implications. Then they took those insights to a national dialogue with government, non-government, donor, academia and private sector stakeholders to consider what might be feasible and promising nationally. So unusual is this process that we asked the team to document in detail what they did'* [Foreword to S1, p.3].

Impact 2: Ugandan insurance companies provide improved weather insurance, with about 200,000 farmers insured in 2020.

After including the recommendations suggested by UEA research in its 2015-20 strategy documents, in 2016 the Ugandan government partnered with the Uganda Insurers Association to launch a new agricultural insurance scheme. Ten insurance companies formed the Agriculture Insurance Consortium (AIC) to provide the bundled weather insurance that UEA research recommended. The insurance premium is subsidised by the government: smallholder farmers pay 50% of the commercial rate in most of the country, and 20% in particularly drought-prone areas. By June 2020, 196,991 policies had been sold [S6], which is a remarkably rapid market penetration. AIC estimates demand to be 220,000 by the end of 2020 and predicts demand to rise to over 575,000 insured farmers by 2025 [S6].

A Consortium Officer to the AIC explains in a letter to Verschoor what this means for farmers: *“To give you a sense of what that means, a typical smallholder farmer insures a harvest value of 250,000 Uganda shillings. The premium on that is 5.5% for weather index insurance and after the subsidy is 2.75%, which comes to 6,875 Uganda shillings. If the satellite shows that a drought causes complete harvest failure, then the farmer will receive 90% of 250,000 Uganda shillings, which is 225,000 Uganda shillings.”* [S6] The premium that the farmer pays for protection against drought and ruinous harvest failure of UGX6,875 is 3% of the insurance pay-out of UGX225,000 received. That pay-out restores the farmer’s income from crops to 90% of its normal value of UGX250,000. It follows that farmers considering an agricultural investment no longer need to worry about drought.

Impact 3: Insured farmers increase investment by 60-100%, a safe way out of poverty.

In the third stage of research dissemination, UEA researchers advised Ugandan insurance companies on the design of new insurance products, focusing on features that, in accordance with UEA research, will encourage smallholder farmers to invest. Insurance company MUA is one of the biggest providers of the new insurance products in Uganda, having insured more than 60,000 farmers to date [S7]. MUA’s Head of Agriculture Insurance has assessed the effects on farmers’ investment of the bundled weather insurance products UEA research recommended. She estimates that insured farmers increase investment by between 60 and 100 percent and links this to UEA research: *“Your research on agricultural investment helped show which kinds of insurance products would be appealing to farmers”* [S7].

An illustration of this is provided by a farmer in Bunamwamba village in Bwikhonge sub county in the Ugandan Bulambuli district, who purchased the new insurance that UEA research recommended. As he puts it, *“From my perspective, [the new] agriculture insurance is beneficial to us farmers because it enables us to borrow money from financial institutions and invest in farming without worrying. When you borrow money to invest in farming and there is a drought, you lose twice; you lose the crops, and you have to sell one of your assets to pay the money you borrowed. But if you have agriculture insurance, it will pay the money you borrowed.”* [S8, p.12]

The future looks bright for the new insurance products that UEA research recommended and helped make possible. m-Omulimisa, a Ugandan agriculture technology company, has started providing the new insurance products in innovative ways, with equally promising effects on investment. Its Managing Director writes to Verschoor: *“We have developed an app that makes purchase of index insurance extremely easy. We give farmers the opportunity to buy the insurance together with certified, high-quality agricultural inputs such as seed and fertilizer, as well as to take out an affordable loan (1.08% interest per month) for buying these inputs. To make sure that small-scale farmers are reached, we use a village-agent model. The village agents have a smart phone that they use to buy bundled insurance (insurance plus the other things mentioned) on behalf of the farmers. The model works well. We estimate that farmers double their investment in agricultural inputs as a result of the insurance, which means that the productivity of their farms increases in a safe and sustainable manner.”* [S9]

Recognition of outstanding impact

For the UEA research impacts described in this case study, D’Exelle and Verschoor won the prestigious 2020 ESRC Celebrating Impact Prize for Outstanding Business and Enterprise Impact [S10].

5. Sources to corroborate the impact

[S1] Balungira, J., B. D’Exelle, B. Pérez-Viana and A. Verschoor (2016), Co-producing policy recommendations: Lessons from DEGRP project “A behavioural economic analysis of agricultural investment decisions in Uganda”, DFID ESRC Growth Research Programme (DEGRP). Stakeholder engagement report, which shows how policy recommendations were co-created. Steve Wiggins’ (DEGRP agriculture theme lead) evaluates in the foreword to this report the approach to impact taken by UEA researchers.

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- [S2] Verschoor, A., B. D'Exelle, B. Pérez-Viana, J. Balungira, and P. Clist (2016), Risk-taking, risk-sharing and underinvestment in agriculture in eastern Uganda – Policy lessons, DFID ESRC Growth Research Programme (DEGRP).
- [S3] Letter from former Senior Policy Analyst for the Ministry of Agriculture, Animal Industry and Fisheries, Uganda, 24.11.20
- [S4] Shaxson, L. (2019), Building a culture of research impact, LSE Impact Blog 2019/01/17. See also Shaxson, L. (2019), Building a research impact culture, i2insights blog of April 16, 2019. Louise Shaxson leads the Research and Policy in Development programme at the UK's Overseas Development Institute and reflects in these blogs on the UEA approach to impact.
- [S5] McSherry, M. (2017), Raising agricultural productivity in Uganda: Impact case study, DFID ESRC Growth Research Programme (DEGRP). This is a detailed impact case study, which analyses how UEA research findings led to impact
- [S6] Testimonial of Consortium Officer, Agriculture Insurance Consortium (AIC), 02.12.2020
- [S7] Testimonial of Head of Agriculture Insurance, Mauritius Union of Assurance (MUA, member of the AIC), 26.11.2020
- [S8] Economic and Social Research Council Celebrating Impact Prize 2020: Celebrating outstanding social and economic impacts of ESRC-funded researchers. Ugandan farmer referred to in Section 4 above was interviewed for the publicity surrounding the ESRC Impact Prize and is cited on page 12.
- [S9] Testimonial Managing Director and Founder, M-Omulimisa, which provides bundled weather insurance recommended by UEA research to farmers through a village-agent model, 27.11.2020.
- [S10] ESRC 2020, Impact Prize Winners 2020.