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Does land demarcation affect improved seed uptake? Evidence from farmers’ mental models in eastern Uganda

LISA MURKEN¹, JOHN ADRIKO², KARLIJN VAN DEN BROEK³, KATI KRAEHNERT⁴, CHRISTOPH GORNOTT^{5,1}

¹*Potsdam Institute for Climate Impact Research (PIK), Germany*

²*National Agricultural Research Organization, Uganda*

³*Copernicus Institute of Sustainable Development, Utrecht University, The Netherlands*

⁴*Potsdam Inst. for Climate Impact Research, Germany*

⁵*University of Kassel, Fac. of Organic Agricultural Sciences, Germany*

Abstract

Do secure land rights incentivize farmers to invest more in their land and adapt their agricultural production to climate change? Many studies investigate this question but come to different results that are highly context-dependent. We evaluate the effect of a pro-poor land mapping and registration project in Eastern Uganda, which supported smallholder farmers in resolving land disputes, demarcating their land and applying for customary certificates of ownership. Specifically, we compare households in a sub-county that benefited from the programme with households in a neighbouring sub-county that did not receive such support. Next to a structured survey, we ask households to draw mental models of their decision process to either use or not use improved seeds, such as drought resistant, high-yielding or early maturing seeds. Mental models capture an individual’s perception and understanding of a state or process, allowing to uncover divergences between the observed world and an individual’s behaviour. By eliciting mental models, we investigate if and how households that benefited from the land mapping project differ in their adaptation decisions, namely with regard to using improved seeds. Results from 253 mental models show that the decision to use improved seeds involves many different factors. The complexity of the mental models drawn goes beyond frequently advanced explanations of (low) improved seed uptake, which centre on high cost of- and low access to improved seeds. Households who benefitted from the land mapping project more often list secure land rights as component of their decision process, compared to the control group. On average, they also draw more positive connections between secure land rights and the uptake of improved seeds, compared to households who were not part of the land mapping project. In contrast, few households see an influence of land certificates on improved seed uptake, both in the treatment and in the control group. The results lend support to the hypothesis that secure land rights are relevant for increased investment.

Keywords: Adaptation, improved seeds, mental models, smallholder agriculture, tenure security