



Trade and Development Seminar

State-Conditioned Soil Investment in Rural Uganda

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While poor soils limit agricultural production across rural, sub-Saharan Africa, most smallholder farmers fail to invest in their soils in the way that soil scientists and policy makers prescribe. A small but growing literature examines biophysical constraints on soil investment, and in particular state-conditioned soil investment — the manner in which current soil fertility drives investment in soils in poor, agricultural contexts. While some research finds that farmers invest more in poor-fertility soils, other authors find the opposite. We model two types of state-conditioned soil investment, and show that while high levels of short-term soil investment in the form of manure or compost will often be optimal on low-fertility plots, long-term soil management practices such as fallowing or rotation may only be profitable on higher-fertility plots. Using plot-level panel data from Uganda, we find that “starting” soil fertility from 2003 does drive soil management practices in 2013. While farmers are more likely to apply organic amendments to low-fertility plots, they are more likely to invest in long-term soil management practices on higher-fertility plots, consistent with the predictions of our model. This model brings nuance to the previous discussion on state-conditioned soil investment, and helps to resolve seemingly inconsistent empirical findings in the literature.