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AGRICULTURAL TECHNOLOGY ADOPTION INITIATIVE

EMERGING INSIGHTS

Credit and Savings to Support Smallholder Farmers in South Asia and Sub-Saharan Africa:
Evidence from the Agricultural Technology Adoption Initiative

Agricultural Technology Adoption Initiative:

The Agricultural Technology Adoption Initiative (ATAI) has funded more than forty rigorous evaluations, the majority full-scale randomized controlled trials, addressing critical evidence gaps with robust, causal evidence. ATAI studies seek to advance practical understanding of the obstacles and opportunities critical to technology adoption for smallholders. The "Emerging Insights" series distills evidence from ATAI and complementary studies to broadly share the outcomes of the project as a means to inform programming and policy. The following brief focuses on improving credit and savings.

Context:

In the context of limited resources, the inherent seasonality of agricultural income limits farmers' access to standard microfinance-type capital for planting and growing season investments. Banks often do not lend to the agricultural sector. So, without liquid capital, farmers are constrained in their ability to invest optimally in productivity-enhancing agricultural technologies or practices.

Evidence-based insights:

- **Access to capital has been proven to affect agricultural activity in several cases.** Financial products can enable farmers to increase their investments, evident from increased crop-related expenditures (Crepon et al. 2015) (Tarozzi et al. 2013) (Beaman et al. 2014) and increased fertilizer use (Karlan et al. 2012) (Carter et al. 2013) (Pender 2008).

- **Yet take up of credit products is generally low (Carter et al. 2013) (Banerjee et al. 2013) (Crepon et al. 2015) (Casaburi et al. 2014).**

- **Lack of access to credit is unlikely the primary constraint to adopting more optimal agricultural behaviors or investments; evidence shows that risk can constrain farmers' agricultural investment more than credit (Karlan et al. 2012).** Therefore, increasing access to credit in isolation from addressing the risk that farmers face is unlikely to be effective in encouraging agricultural technology adoption.

Where insufficient access to credit and savings mechanisms does critically constrain agricultural investment, what strategies viably increase smallholders' access to liquidity? Alternatives to group-liability microfinance models are considered given that financial providers are likely unwilling or unable to serve smallholders based on social guarantees given the dominant risk driving default (weather) is common to members in the group:

- **Improved information about borrowers improves credit market performance, including repayment rates.** Considering the risks, banks are often unwilling to lend if they do not know about a client's creditworthiness. Models that have shown improvements in lending outcomes for farmers include credit bureaus (De Janvry 2010) (which may not be cost-effective) and biometric identification of borrowers (Gine et al. 2010).

- **Flexible collateral arrangements, like crop inventory or asset-collateralization, can encourage higher take up than traditional loans and perform as well (De Laat et al. forthcoming) (Fink et al. 2014).** Credit schemes using in-kind collateral arrangements can still fail from insufficient take up, whether for reasons shared by any new credit scheme offer (e.g. lack of familiarity and/or trust, or prohibitively high costs to engage in new lending/trading relationships) or from uncertainty of future in-kind collateral value, particularly in volatile markets (Boucher et al. 2008) (Casaburi et al. 2014).

Strategies that account for farmers' seasonal distribution of income and the related seasonal variation of prices show promise:

- **Using crops (grain) as collateral (via inventory credit schemes issued at harvest time) and/or savings (via storage solutions) can provide well-timed access to capital while protecting farmers from seasonal price fluctuation (Basu and Wong 2012) (Burke 2014).** These more targeted credit interventions can be quite small and yet have relatively big impacts in the case of shallow markets with dramatic seasonal price fluctuations.

- **Allowing farmers to delay repayment of a loan until after the harvest (Matsumoto et al. 2013) (Beaman et al. 2014), and/or helping farmers save for inputs from harvest until planting time (Duflo et al. 2008) can increase purchase of agricultural inputs.**

- **Allocating resources for particular purchases at particular times using labels or commitment devices can direct investment toward particular agricultural purchases or activities (Gine et al. 2010) (Gine et al. 2011) (Ashraf et al. 2006).**

Credit and Savings: Future research

Given the evidence-based insights above, and current interest among related researchers and practitioners, ATAI suggests emphasis on the following topics to further understand effective credit and savings interventions for smallholders:

Emphasized:

- Lending products using flexible collateral (leasing): encourage loan take-up while providing well-timed access to capital
- Products (credit, savings, storage, etc.) based on timing in the agricultural cycle: financial products which account for seasonal fluctuations in farmer liquidity, optimal investment in inputs, and crop and input prices.
- Institutions that can bolster information about borrowers (credit bureaus, fingerprinting): facilitate dynamic incentives to improve credit market performance where social guarantees of repayment are undermined by aggregate risks.

De-Emphasized:

- Use of standard group liability microfinance in agriculture

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