

# Using experiments to explore the role of groups and collectives in enabling market access for smallholder farmers

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## Groups and market access

- Limited market access for smallholder farmers in sub-Saharan Africa: access to financial services, inputs, access to output markets
- Often rooted in economies of scale in procuring inputs and services and marketing produce.
- Also in lack of information (credit-worthiness, farming practices used etc).
- Developing an institutional infrastructure that facilitates market exchange for smallholder farmers in such a context is critically important.
- Farmers groups and collectives are one possible institution: by engaging in markets collectively economies of scale can be overcome, information of group members is better than that of service providers.

# Constraints to collective engagement

- However, despite some successful examples and theoretical potential, much evidence suggests that farmers groups often have limited success.
- Many questions remain:
  - Are groups, in fact, a good mechanism for solving market failures? What are the benefits to farmers of collective engagement?
  - What makes some groups successful at overcoming market failures? What features are important, what outside interventions help?
  - What new activities can collectives undertake that might help farmers increase access to markets?

## What is the role of RCTs?

- Qualitative findings and some quantitative cross-sectional analysis suggests possible answers to these questions.
- For example, on the question of what makes groups successful:
  - Good leadership; leadership training programs
  - Focused activities
  - Regular meetings
  - Independent record keeping, auditing of books; training on record keeping
- However, hard to argue causality. We don't know if causality runs the other way. Well-functioning groups may choose to elect good leaders, focus their activities, hold regular meetings and keep good records.
- Hard to use cross-sectional data to answer these questions:
  - Omitted variable problem (measure of quality of group)—hard to think of an instrument that can be used in this case.
  - PSM doesn't help here either: activities are chosen endogenously by the group, so can't argue that there is no selection on unobservables. Programs are usually targeted to well-functioning groups, so again there is selection on unobservables.
- There is a role for RCTs

## RCT studies on groups in markets

- Review literature on 3 types of RCTs on collectives and market access, that have helped us answer these questions:
  - Credit markets: group lending has opened up access to credit for many. Groups reduce administrative costs for the lender. Group members have an information advantage that helps reduce moral hazard and adverse selection.
  - Collective marketing: when farmers sell collectively they reduce transaction costs of marketing (assuming some fixed costs). If markets are subject to local monopolies, collective sales can also increase the bargaining strength of farmers and result in higher prices.
  - Insurance: can groups help in the provision of agricultural insurance? Groups reduce retailing costs for the insurer. Group members have an information advantage that may allow increased insurance coverage (by reducing moral hazard).

## Groups and access to credit: joint liability

- What aspects of group lending cause it to work? Joint liability (monitoring and selection)? Regularity of meetings?
- Joint liability: Gine and Karlan (2009) conduct two RCTs with Microfinance Institution (MFI) in the Philippines to test:
  - Does joint liability increase repayment?
  - Does joint liability increase repayment by reducing moral hazard (members of the group monitoring each other to check up on loan payment)?
  - Does joint liability increase repayment by reducing adverse selection (members control admission into the group to "good" borrowers)?
- First RCT (moral hazard): randomly selected 56 groups who had a joint liability contract, and informed them that they were no longer jointly liable for their loans. Does not affect moral hazard as individuals were already in groups when told this.
- Second RCT (moral hazard and adverse selection): the bank introduced individual liability from the beginning in randomly selected areas
- In both RCTs groups still met every week and repayment was made in group meetings.
- Result?

## Groups and access to credit: joint liability

- Default was the same across all groups: no effect of joint liability on repayment. Neither resulting from moral hazard nor adverse selection.
- In this context default was already low, so may be why no effect was observed. However, important to know that in this context low default not caused by joint liability.
- In both cases—repayment in regular meetings was maintained. Is this the reason why group lending works?

## Groups and access to credit: regular meetings

- Feigenberg, Field and Pande (2010) randomize the regularity of meeting to test this.
- Their test is of broader interest to literature on groups too: many studies show a positive correlation between regular social interaction and cooperative outcomes (e.g. Putnam) but none of this evidence allows us to assign a causal interpretation to this relationship. Cooperative societies may just be characterized by more dense social networks.
  - Work with an MFI in Calcutta
  - Randomly assign first-time borrower groups to meet either once per week (weekly groups) or once per month (monthly groups).
- Results?



## Groups and access to credit: regular meetings

- After one year: weekly groups were 40% more likely to attend social gatherings together, and 19% more likely to meet outside of loan meetings.
- Those who had been in weekly groups were four times less likely to default on their subsequent loan (during which all clients met at the same frequency, irrespective of whether they had earlier been in weekly or monthly groups).

# Collective marketing

- Three studies currently examining how to strengthen the ability of marketing groups to improve market outcomes for their members:
  - de Janvry et al: does helping groups negotiate improve prices? Senegal
  - Bernard et al: Does training leaders on leadership qualities and leaders and members on importance of group coordination help improve groups ability to market collectively? Senegal
  - Hill and Maruyama: does working capital credit for payment on delivery improve group marketing? Uganda
- Focus on the last one.

## Strengthening coffee and maize farmers groups in Uganda: context

- The majority of Ugandan farmers sell their produce at harvest time on the spot market, selling unprocessed products to itinerant traders at the farm-gate.
- It is generally perceived that farmers have little bargaining power over the price when they make their sale and many collective marketing groups exist.
- By selling collectively, farmers can:
  1. sell enough to make farmer-organized transport and processing efficient and
  2. increase their bargaining power in making sales.
- However, group members face additional costs in making collective sales:
  1. Cost of waiting involved in coordinated bulking
  2. Risk of default that is present when quantities are delivered with no or partial payment
  3. Reveals information about the size of income in a given year
- Only 38% sell through their group, even though 74% report being in a group that sells collectively and using the service.

# Cash on delivery

- Analysis of baseline data:
  - Main reason for selling through the group is price
  - Main reason for selling to farm-gate trader is need for cash
  - Farmers with less liquidity and less inclined to trust are more likely to sell to traders when there is no payment at delivery to group.
- Groups that offer cash on delivery have much higher proportion being sold
  - This is endogenous
- Need for cash could be a desire for liquidity or a desire to have some payment at time when coffee is parted with (trust).
- Would working capital credit to groups help or not? Randomized test.

## Testing strategy

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	Information on sales	No information on sales
Cash on delivery	40 groups	42 groups
No cash on delivery	42 groups	43 groups

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- Stratified by association—the level at which most of the marketing takes place, allows us to assess impact for different types of association.
- Baseline survey in March 2010, intervention from September 2010 - September 2011, Follow-up survey in October 2011
- Association records collected at baseline, throughout intervention, and at followup

## Initial results

- Quality of implementation varied substantially by association. Stratification by association was important.
- Cash on delivery increased probability of sale through group by about 10%.
- Impact is more precisely estimated when using the association data on sales.
- Information had little impact on sales, nor on measures of trust.
- Farmers with cash on delivery were less concerned about others knowing how much they received.
- Further work to assess which farmers were more likely to be encouraged to sell through the group as a result of cash on delivery.

## Formal index insurance and risk-sharing groups

- Risk-sharing within groups is commonly practiced in rural Africa.
- Groups find it hard to manage risks that affect all group members simultaneously, such as catastrophic weather events.
- Index insurance can help insure all group members simultaneously, but cannot insure members for member-specific losses.

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- Index insurance can help insure all group members simultaneously, but cannot insure members for member-specific losses.
- Can index insurance be used as a tool to insure catastrophic weather events, whilst encouraging group members to insure smaller agricultural risks among themselves (using informational advantage to reduce moral hazard)?





## First test of idea

- Weather insurance policies (sold by Nyala Insurance, reinsured by Swiss RE) were marketed through pre-existing risk-sharing groups: funeral societies called iddirs.
  - Primarily funeral societies, but becoming engaged in other forms of insurance provision to their members—a third provide cash payouts for other types of adverse shocks such as fires or illness; and a quarter offer loans.
  - Inclusive, often quite formalized (regular payments made monthly), and pervasive throughout most regions in Ethiopia.
- We selected leaders of iddirs to be trained in general concepts of insurance and the details of the products.
- We randomize the content of the training sessions:
  - In some iddirs, training emphasizes the benefits of sharing the policies among members, and using policies to compensate those with the worst year more.

## Intervention Design: randomization of content



Training A: Focused on the individual benefits of insurance, and illustrated how to choose the right policies for an individual farmer.

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Training B: Focused on the group benefits of insurance, and illustrated how to choose the right policies for a group, and how groups could enable risk sharing.

# Results

- Large effect on demand at group level:
  - Probability that anyone in the group purchased insurance increased by 31% for those in training B
  - The average number of policies purchased per person in the group increased by 0.139
- Why did the the training have this effect on demand? Was it because the insurance was "better" (used some local knowledge of losses)
  - Leaders in training B iddirs encouraged more members to receive training
  - Leaders and ordinary members in training B iddirs were more likely to discuss insurance among themselves
  - Leaders and ordinary members in training B iddirs were more likely to buy
  - Training B did not improve understanding of the product: individuals in iddirs whose leaders received the group-training did not have a better understanding of the insurance.
- Ultimately not clear: clear impact of differential marketing, "better insurance" is one hypothesis.
- A number of remaining questions: how were sharing rules set-up, how would they have worked in practice (there were no payouts), is take-up higher than a product that is marketed directly to individuals?

## Second test

This year we have designed the research to test the following hypotheses:

1. Providing insurance through groups results in increased trust in the insurance product and provider
2. Providing insurance through groups results in more comprehensive insurance by using local information to target payouts
3. Group contracts require ex-ante rules to effectively provide more comprehensive insurance
4. Insurance encourages increased investment in ag production

# Testing strategy

Hypothesis	Empirical strategy	Randomization	Data-collection
1. Trust	Compare trust between farmers offered group/individual contracts	Randomize contract type at village level	Reported trust across villages
2. Better insurance	Compare payouts and transfers in group and individual contract villages		Data on payouts and transfers (group and individual)
3. Ex-ante rules	Compare transfers with and without ex-ante rules	Randomize group contracts: with & without ex-ante rules	Data on transfers (group and individual)
4. Impact	Compare production investments between control and all treated	Randomize insurance	Data on investments

# Randomization of villages

- 50 villages designated as control villages.
- 60 villages in which insurance is offered:
  - 25 villages: individuals offered an individual contract,
  - 35 villages: iddirs offered a group contract.
    - Mandated: in 18 villages iddirs were asked to write detailed ex-ante rules on insurance payouts and amounts to be shared were specified.
    - Non-mandates: in 17 villages iddirs were asked to write less detailed rules and no amount was specified.
- Price discounts randomized across villages.
- Villages randomized to ensure distance to weather station was distributed equally across these groups.

# Initial observations and findings

- Observation only:
  - Groups need clear incentives to set up rules for sharing insurance payouts
  - They are much easier for the financial institution to work with than selling to individual farmers
- Formal analysis (data just received):
  - No clear differences in transfers between individual and group villages
  - Are differences in villages with mandated rules and both individual and group villages with no mandated rules