


**Understanding the impact of  
idiosyncratic shocks on farm  
productivity and household asset  
building and protection in Ghana,  
Ethiopia and Bangladesh:  
Introduction to a new project**

USAID AMA CRSP  
Technical Committee Meeting  
August 20-21, 2007  
Newark, NJ



# Collaborators

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Addis Ababa University, Department of Economics (Ethiopia)

Cornell University

Data Analysis and Technical Assistance, Ltd. (Bangladesh)

Institute of Statistical, Social and Economic Research,  
University of Ghana

International Food Policy Research Institute



# Motivation


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Asset accumulation and productivity growth are difficult to achieve without means to manage risk and shocks effectively.

Especially in the presence of poverty traps, risk and shocks can have especially serious, persistent effects. Knowing this, people adapt their behaviors (e.g., investment, technology adoption), which can reinforce the poverty trap mechanism(s).

Reducing risk and vulnerability has therefore become central to poverty reduction and economic growth strategies.

But appropriate interventions to help people insure against risk or to cope with shocks depend fundamentally on the nature of the risk involved and the strength of local institutions to reduce and transfer risk and to cope with shocks.



# Motivation (continued)

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Covariate risks require efforts external to communities. Many interesting innovations (index-based risk transfer products, etc.)

But idiosyncratic (asset and income) risk seems to dominate covariate risk in rural Africa and Asia.

Idiosyncratic risks can, in principle, be managed within communities. So how well does this work? Who falls through the holes in social safety nets? With what impact?

Ex ante, who trades off expected asset and productivity growth for reduced exposure to idiosyncratic risk?

Ex post, what determines the impact of such shocks on households? What formal and informal institutions mediate those experiences?

*Need to understand access to and effectiveness of existing risk management arrangements in order to design good policies/projects.*

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# Project Research Objectives

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(1) Identify how idiosyncratic risk affects asset trajectories of rural households in Bangladesh, Ethiopia and Ghana.

(2) Unpack these effects to understand at a more disaggregated level the extent to which they are driven by ex ante changes in risk avoidance behavior or by ex post changes associated with risk coping behaviors and uninsured losses.

(3) Explore the extent to which inter-household variation in the experience of idiosyncratic risk can be attributed to household initial wealth (permitting self-insurance), to differential participation in social networks and other traditional arrangements (permitting informal social insurance), to access to financial products or flexible contract terms (permitting contractual or quasi-contractual insurance), etc.

## **Project Research Objectives (cont.)**

(4) Identify where gaps exist in extant insurance networks for idiosyncratic risk, how effectively those gaps could be plugged through new and expanded access to existing (institutional and technological) innovations, and what types of households and individuals should be specifically targeted for assistance in managing idiosyncratic risk more effectively so as to avoid or grow out of poverty.

(5) Explore what might cause people's idiosyncratic risk management capacity to evolve over time (e.g., feedback between shocks, asset holdings and access to social insurance arrangements, microfinance, or contract farming schemes).

# An Example from Ghana

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In Ghana, social visibility has significant effects on (i) risk pooling, (ii) asset levels and dynamics, (iii) probability of falling into poverty trap.

(i) Tests of risk-pooling within and between social networks conditional on individual social visibility (Vanderpuye-Orgle and Barrett 2007):

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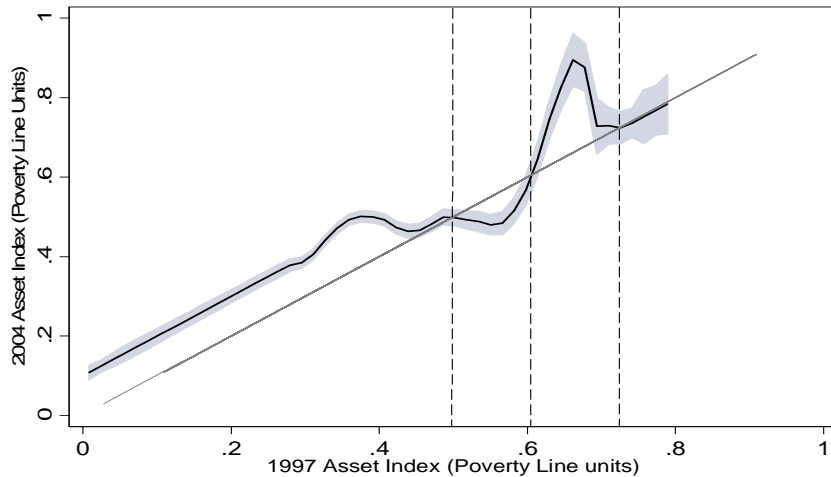
	Full Risk Pooling	No Risk Pooling	Inference
An individual in a village	Rejected	Rejected	Partial risk pooling
A visible individual in a village	Not rejected	Rejected	Full risk pooling
An invisible individual in a village	Rejected	Not rejected	No risk pooling
An individual in a network	Not rejected	Rejected	Full risk pooling
A network in a village	Rejected	Rejected	Partial reinsurance

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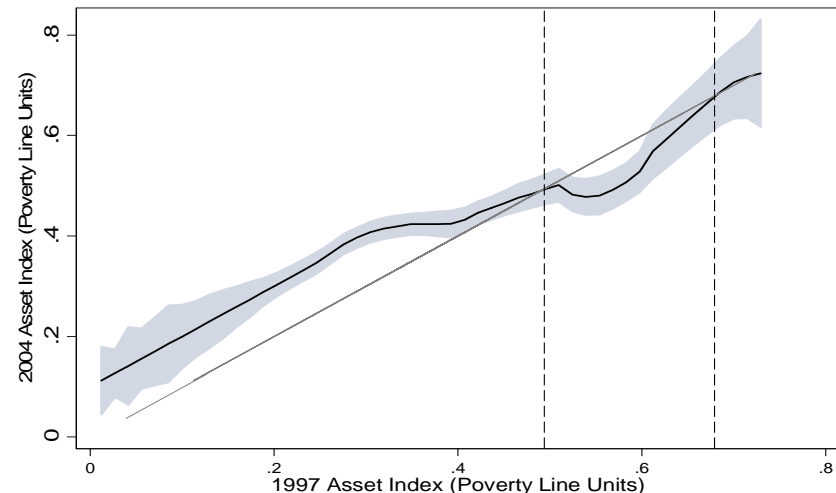
# An Example from Ghana (cont.)

(ii) Asset dynamics conditional on social visibility:  
Greater vulnerability to shocks for the socially invisible

Asset dynamics for individuals who are:  
Socially visible

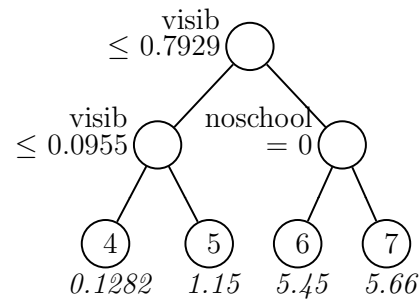


Socially invisible



# An Example from Ghana (cont.)

(iii) Asset levels and probability of falling into poverty trap conditional on social visibility



GUIDE piecewise multiple linear least-squares model. At each intermediate node, a case goes to the left child node if and only if the condition is satisfied. Number in italics beneath a leaf is the sample mean of livelihood.

Using regression trees, optimal sample splitting is wrt social visibility, leading to asset levels at least an order of magnitude greater.

Furthermore, idiosyncratic shocks (farm problems, sudden death of family member, theft) have a large, positive and stat. sig. effect on the likelihood of being in a poverty trap for socially invisible individuals, but not for socially visible individuals.

# Project Design

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- 1) *Parallel data collection and analysis efforts in three different countries:*
  - Bangladesh (qualitative work to supplement new panel survey, funded by CAPRI)
  - Ghana (new wave of panel survey w/ qualitative work to supplement)
  - Ethiopia (analysis of ERHS panel survey)
- Cross-country synthesis as the project progresses
- 2) *Continuous outreach w/local stakeholders*
- 3) *Extensive host country research capacity building*

# Project Design (continued)

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## Data collection

We propose to follow a mixed qualitative/quantitative research design based on longitudinal household data econometric analysis supported by qualitative work.

We will ...

- extend a rich panel data set in Ghana (4<sup>th</sup> wave since 1997) in an area of commercializing agriculture, focused on social networks and contract farming, supplemented by qualitative data (hh life histories and FGDs): ISSER/Cornell
- develop qualitative (focus group and hh life history) data to complement new panel data set in Bangladesh (1994-2007) designed around introduction of human capital interventions, new agricultural technologies and microfinance and focused on NGO roles in risk management: DATA/IFPRI

## Indicators:


- Public release of data
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# Project Design (continued)

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## Data analysis:

We will analyze new data from Bangladesh and Ghana, as well as Ethiopia Rural Household Survey (6 rounds, 1994-2004) and 2004/5 complementary qualitative ERHS work in order to study:

- the impact of idiosyncratic risk on the dynamics of household well-being and productivity (identification using detailed shocks history data in each survey, decompose ex ante and ex post effects)
  - what existing mechanisms help households through episodes of adverse idiosyncratic shocks (social networks, funeral societies, microfinance, contract farming, etc.)
  - what gaps in coverage exist (identity/gender?): targeting
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# Project Design (continued)

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## Data analysis (continued):

- how different interventions affect insurance against idiosyncratic risk and its dynamic effects on rural households' asset holdings, productivity and well-being
- co-evolution of insurance and wealth – e.g., due to endogenous social network formation and group membership

## Indicators:

- \* peer reviewed publications, professional presentations and citations
  - \* testimonials as to quality/impact by other scholars
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# Project Design (continued)


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## Outreach:

We will

- Release regular policy briefs for nontechnical audiences
- Regular stakeholder workshops at national and community levels

## Indicators:

- \* policy briefs released
  - \* contacts w/ policymakers, donors and communities in outreach workshops
  - \* coverage by local media
  - \* attestation by stakeholders as to the value of the empirical analysis and capacity building activities undertaken by project
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# Project Design (continued)


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## Research Capacity Building:

The project will provide

- strong collaborative research activities with co-authored outputs among multinational team members
- graduate degree training at Addis Ababa University, Cornell University, and/or University of Ghana: at least 10-12 students (partly) supported financially, with data, or through mentoring
- post-doctoral research associate training at Cornell
- non-degree training in host countries (e.g., January 2008 Economy of Ghana Network workshop for young faculty, qualitative data collection and data dissemination workshops for DATA staff and Bangladeshi researchers)

## Indicators

- \* Student output (theses, dissertations, publications, presentations) and degrees earned, student placement
  - \* Participant evaluations of non-degree training events
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*Thank you for your time, attention and comments!*

