

Understanding the impact of idiosyncratic shocks on farm productivity and household asset building and protection in Ghana, Ethiopia and Bangladesh

A Proposal to the USAID AMA CRSP

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Abstract

Most recent research on the impact of risk and vulnerability on poor households has focused on covariate shocks such as those associated with weather, prices or macroeconomic policy reforms. Unlike covariate shocks, which typically require a coordinated external response, household-specific or “idiosyncratic” shocks can, in principle, be effectively managed locally. New evidence that idiosyncratic risk dominates covariate risk in rural Africa and Asia indicates the potential contribution of improved local risk management to household asset accumulation, productivity growth and poverty reduction in developing countries. Our proposed work will focus on the impact of idiosyncratic risk on the dynamics of household well-being and productivity. 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? The research aims to clarify what existing mechanisms help households through episodes of adverse idiosyncratic shocks, what gaps in coverage exist, and how different interventions affect insurance against idiosyncratic risk and its dynamic effects on rural households’ asset holdings, productivity and well-being in Bangladesh, Ethiopia and Ghana. The panel data sets on agricultural households that we propose extending and using all have paid significant attention to gender and social networks, have detailed risk and shock histories, and thus permit us to examine gender-differentiated idiosyncratic risk and access to insurance mechanisms.

Proposal Narrative

Problem Statement

The last decade or so has seen an outpouring of interest in the impact of risk and vulnerability on poor households. Some households weather asset and income shocks well, buoyed by access to financial and other markets, informal social networks and other mechanisms that provide effective insurance against risk. The insurance available to them enables them to avoid or escape poverty. For many households, however, cumulative efforts at improving one's position through steady asset accumulation and productivity improvements are suddenly set back by one major crisis. Others face a Sisyphean challenge, laboring steadily in an effort to escape poverty but regularly knocked backwards and forced to begin again. Still others evade such risks by choosing livelihoods that offer reliable but meager returns that trap them – and often their children – in chronic poverty. Such differentiated dynamics of household well-being accentuate the importance of effective risk management to prevent and respond to risks.

Sustainable poverty reduction is immensely difficult to achieve in the absence of mechanisms designed to assist households manage shocks. However, no one-size-fits-all risk management tool exists. Appropriate interventions depend on the nature of the risk involved. Shocks are either idiosyncratic – meaning one household's experience is typically weakly, if at all, related to neighboring households' – or covariate – meaning that many households in the same locality suffer similar shocks. Idiosyncratic shocks commonly arise due to crop yield shocks associated with microclimatic variation or localized wildlife damage or pest infestation, illness (especially chronic rather than infectious disease), and one-off events (e.g., property loss due to fire or theft). Covariate shocks occur because of natural disasters, war, price instability

and financial crises to which (virtually) everyone in a community is vulnerable. Covariate shocks are difficult to insure locally and thus require some sort of coordinated external response, whether through financial markets or governmental or non-governmental agencies. Idiosyncratic shocks, however, can in principle be effectively managed within a locale.

Rural communities have always developed norms and institutions that attempt to mitigate the consequences of risk; individuals also adopt livelihood strategies that reduce the probability of suffering adverse shocks. These strategies, however, typically mitigate only a small portion of overall risk and often fail to prevent people falling into destitution, and sometimes even impede their climb from chronic poverty if these lower risk strategies have very low returns.

Recognizing the limited range of traditional risk management arrangements, states have instituted various insurance, price stabilization and safety net programs, often at great cost and with modest impacts. Indeed, there have been considerable recent efforts to improve risk management by developing countries using index-based risk transfer products related to rainfall and other climate variables, options and futures in international commodity markets, and other innovations. These focus overwhelmingly on covariate risks (prices, drought, floods, etc.), however.

Meanwhile, a growing body of empirical evidence suggests that idiosyncratic risk may be as important, or indeed dominate covariate risk in rural Africa and Asia (Udry 1990; Townsend 1995; Deaton 1997; Lybbert *et al.* 2004; Morduch 2004; Dercon 2005; Kazianga and Udry 2006). Research and innovation about idiosyncratic risk, especially connected back to the dynamics of household welfare, remains in short supply, however. The relative importance of idiosyncratic risk and the relative dearth of attention given to it by researchers and policymakers

alike raise the possibility of significant untapped potential for improved local risk management in developing countries and significant impact for high quality research that tackles this topic.

This project aims to help fill that gap through rigorous, policy-relevant research in three countries – Bangladesh, Ethiopia and Ghana – where risk and poverty are key, inextricable concerns. Our proposed work will focus on the impact of idiosyncratic risk on asset poverty and the mechanisms available to redress it. The data sets we propose using have all paid significant attention to risk issues, to social networks and to gender and so will permit us to look at idiosyncratic risk and its impact on asset accumulation and welfare dynamics as potentially differently experienced by men and women and by people with different degrees of social embeddedness in their communities.

In the absence of well-functioning insurance and credit markets, the poor turn to informal institutions for *ex ante* and *ex post* coping mechanisms.¹ Social networks have been identified as loci of risk sharing. These networks fostered by kinship ties, ethnicity, geographical proximity, religion, and gender groups, may exclude some individuals (Goldstein 1999; de Weerd 2005; Udry and Conley 2005; de Weerd and Dercon 2006; Santos and Barrett 2006; Fafchamps and Gubert forthcoming). In addition, empirical tests routinely reject the provision of full insurance by these institutions (Townsend 1994; Townsend 1995; Deaton 1997; Gertler and Gruber 1997). Residual risk exposure may result not only in efficiency losses, but in retarded asset accumulation and households' collapse into or failure to escape from poverty traps. And there is little reason to believe that all households are equally exposed.

Institutional, technological and other innovations may mediate the impact of idiosyncratic risk on households' asset dynamics, by supplementing or supplanting traditional, informal

arrangements that often exclude the poorest members of communities. Improved productivity can enhance a household's ability to self-insure, as might microfinance institutions that improve its access to financial products. Formal mutual aid groups such as funeral societies can provide effective insurance against idiosyncratic risk. And contracts with external suppliers or buyers sometimes build in implicit insurance through limited liability clauses and flexible payment terms. Since access to such innovations is surely not uniform, one needs to look both at access to these mediating factors as well as their effectiveness in reducing the impact of idiosyncratic shocks on household accumulation patterns.

Research Objectives

The research objectives of this project are therefore fourfold.

- 1) We seek to identify how idiosyncratic risk affects the welfare trajectories of rural households in Bangladesh, Ethiopia and Ghana, as manifest in asset accumulation patterns.
- 2) We aim to 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.
- 3) We will explore the extent to which inter-household variation in the (ex ante or ex post) impact 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). The objective is to identify where important gaps exist in extant insurance networks for idiosyncratic risk, how effectively those gaps could be plugged through new and expanded access to existing

¹ See Alderman and Paxson (1992), Besley (1995) and Bardhan and Udry (1999) for complete reviews.

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.

- 4) We will explore what might cause people's idiosyncratic risk management capacity to evolve over time. For example, to what extent do asset shocks degrade one's access to social networks, as Santos and Barrett (2006) find among Ethiopian pastoralists? To what extent do past claims on social networks reduce one's subsequent recourse to the same support, as Lybbert et al. (2004) and McPeak (2006) find among different east African herder populations? Risk management capacity through each of the mediating mechanisms we study (self-insurance using own wealth, social insurance through networks, and contractual or quasi-contractual insurance through financial institutions and interlinked contracts) may well evolve endogenously along with households asset dynamics, with the two dynamics prospectively reinforcing each other.

Advancing effective idiosyncratic risk management lies at the heart of a broad based economic growth and poverty reduction strategy. Understanding better how households differentially experience idiosyncratic risk and what mediating structures minimize the adverse dynamic effects of such risk is therefore of considerable importance, not just in the three project countries, but more broadly, throughout the developing world.

Relatively little is known about the extent to which these mechanisms (self-insurance, social networks, formal programs through groups or contractual and quasi-contractual arrangements), individually and cumulatively, are able to insure households against risk. Since most empirical work focuses only on understanding one type of insurance mechanism, rather than the interaction among mechanisms, researchers and policymakers know little about gaps in coverage, who is

truly vulnerable, and what factors help mend the holes in the social safety net. Are some households better insured by some mechanisms rather than others, or are some vulnerable households systematically excluded by most forms of social insurance? We also know very little about how asset stocks and insurance coverage co-evolve over time.

Research Design

We propose to follow a mixed qualitative/quantitative research design based on longitudinal household data econometric analysis supported by qualitative work. Over the first three years we propose to emphasize parallel research in collaboration with local partners in each of the three project countries, playing to the strengths of specific data sets and research demands of stakeholders in particular countries, before aiming more at synthesis in the fourth and final project year.

The Bangladesh research will build on a longitudinal data set currently being collected by IFPRI and DATA, in collaboration with the Chronic Poverty Research Centre (University of Manchester, UK), to assess the long term impact of three interventions on poverty in rural Bangladesh: human capital interventions; the dissemination of new agricultural technologies; and microfinance.² The panel data set builds on data described in Ahmed and del Ninno (2002), evaluating the cash/food for education program; Bouis et al. (1998), Quisumbing and Maluccio (2003) and Hallman, Lewis, and Begum (2003) on the micronutrient and gender impact of new agricultural technologies, and Zeller et al. (2001) on microfinance programs. A unique feature of this study is that it combines both a long-term and comparative assessment of these interventions and mixed qualitative/quantitative methods. Approximately 102 villages and 1800 households

² The data from the earlier rounds of the microfinance and agricultural technology surveys are publicly available at http://www.ifpri.org/data/data_menu.asp.

first surveyed in either 1994, 1996 or 2000 are being revisited in 2007 to ascertain how their living standards have changed over the intervening period and which factors, institutions and processes have trapped certain households in chronic poverty while allowing others to escape from it. The study began in June-July 2006 with focus group discussions (FGDs) in 25% of the villages to obtain people's perceptions of the main drivers of improvement and decline in well-being, and the role (if any) of the three interventions in contributing to improvements in well-being. The FGDs are being followed by a quantitative survey of the households that were respondents in the original evaluations. Based on transition matrices to be constructed from the previous surveys and the new round of data collection, households will be selected for further life history research. The data collection described above is already funded.

Preliminary analysis of the focus group results shows that dowry payments, illness and injuries, and large family size and dependency ratios are the most frequent causes of long-term impoverishment mentioned by FGD respondents (Davis 2006). These account for 15.8%, 15.2%, and 14.1% of factors mentioned, respectively. FGD results also suggest that illness and injury also tend to affect the poor disproportionately—for example, accidents which cause disability and chronic conditions are seen to be more common among the poor than the nonpoor.

FGD results also hint at the possible role of NGOs in providing a safety net, especially for the poor. For example, households routinely use NGO loans to fund emergency expenditures such as dowries and essential medical care of elderly parents and other family members. Funding from the AMA CRSP would be used to analyze the quantitative data that are currently being collected under the IFPRI-CPRC study, to answer the following questions: (1) What is the long-term impact of idiosyncratic shocks (such as illness and injury) on asset accumulation and well-

being? (2) What mechanisms do households from different income groups use to cope with idiosyncratic shocks? (3) What is the role of NGOs in helping households cope with idiosyncratic shocks; and (4) What can we learn from the experience of NGOs in providing this type of safety net to their clients? To answer the last question, the proposed study will conduct new case studies of selected NGOs to learn how NGOs provide assistance to members who experience illness or injury shocks.

In Ethiopia, our work will exploit the Ethiopian Rural Household Survey (ERHS), a unique long-term longitudinal data set encompassing approximately 1400 households in 15 villages. The six rounds collected between 1994 and 2004 contain detailed information on assets, consumption and sources of income. A number of these rounds contained detailed, individual level questions about current health and nutritional status and the most recent (2004) round contained a detailed module of self-reported shocks at the household level as well as specific information on three forms of health shocks: temporary illnesses suffered by household members; physical disability; and a series of diagnostic questions that allows us to ascertain whether an individual is likely to be HIV/AIDS positive. ERHS also contained detailed information on the mechanisms households can call on when shocks occur such as access to labor sharing networks, mutual-help societies, credit and remittances. These quantitative data are complemented by two rounds of qualitative studies carried out by the Departments of Sociology at Addis Ababa University and the University of Bath (UK) in 1996 and 2004/2005. Part of the 2004/2005 work used data from the quantitative survey to identify households experiencing increases in wealth and those that were falling into destitution; these selected households formed the basis of a series of case histories on poverty dynamics. As part of this project, we will have access to these.

Dercon, Hoddinott and Woldehanna (2006) document that there have been considerable

increases in consumption and assets over the ten year period of the ERHS, though there are noticeable variations in the distribution of these gains. Work with these data provide two pieces of evidence suggesting that idiosyncratic shocks play an important role in income and asset dynamics: (1) Respondents themselves say that certain types of idiosyncratic shocks – notably illness – matter to them. For example, nearly half of the sample indicated that an illness shock was one of the three most important shocks to affect their household between 1999 and 2004; (2) Preliminary evidence suggests that households in which adult nutritional status is so poor as to be physically debilitating (i.e., households where adult males and females had Body Mass Indices below 18.5 as measured in the 1994 or 1995 survey) had near zero consumption growth subsequently – suggesting that poor health or nutrition could be the cause of a poverty trap, as a long literature hypothesizes but has struggled to document empirically (Dasgupta 1997).

Funding from the AMA CRSP would be used to analyze these quantitative and qualitative data with a focus on three questions: (1) What is the long-term impact of idiosyncratic shocks (such as illness and injury) on asset accumulation and well-being?; (2) Can poor health or nutrition push households into a poverty trap?; and (3) What mechanisms and informal institutions do households from different income groups use to cope with idiosyncratic shocks?

In Ghana, the study would generate the fourth wave of a panel data set initiated by Christopher Udry, Markus Goldstein and Jacqueline Vanderpuye-Orgle.³ The survey, conducted in the Akwapim-South District of the Eastern Region of Ghana, studies farming communities transitioning from the cultivation of maize-cassava intercrop for domestic production to pineapple cultivation for export and, more recently, contract farming of tomatoes since the early 1990s. This transition involves a significant amount of idiosyncratic risk associated with learning new agronomic

practices, but may also facilitate marked improvements in asset accumulation given increased incomes associated with pineapple cultivation. The original sample was selected in 1996 using a two-stage sampling procedure. Four village clusters were purposively selected within this area based on their participation in fruit and vegetable production as well as their array of agronomic, market access and geographic conditions. Sixty married couples (or triples) were then randomly selected in each village cluster, except for the smallest village cluster where all resident couples were selected. In all, 436 individuals were surveyed fifteen times from November 1996 to October 1998. Of which, 372 individuals were resurveyed three times from August 2004 to January 2005.

The proposed fourth wave would be a valuable addition to the existing data set because it would allow retrospective data to be collected over the ten-year period on key variables. The survey, which includes detailed information on idiosyncratic shocks and statistically accurate reconstructions of social networks, would facilitate the assessment of differential access to mechanisms for mitigating and coping with shocks. In addition, its focus on individual-level data collection allows identification of differences in intrahousehold resource allocation and thus in risk exposure within households.

Preliminary results from the three waves of existing data show that young farmers who do not belong to a major clan and recent migrants are far more likely to be socially excluded than are others within these villages. And the socially excluded fail to achieve full or even partial risk pooling of idiosyncratic risk with other individuals in the village. On the other hand, those who are well-integrated into social networks achieve full risk pooling with other individuals both within the village and within their respective social networks (Vanderpuye-Orgle and Barrett 2006). These sorts of results have powerful potential to facilitate targeting of interventions to supplement extant

³ The first two waves are publicly available on <http://www.econ.yale.edu/~udry/ghanadata.html>.

social insurance with interventions to assist those who face idiosyncratic shocks on their own. In addition to collecting a new wave of data, the proposed project will explore these targeted intervention possibilities with NGOs, government clinics and other interested agencies working in the region. We seek to understand how meso-level institutions – whether informally organized within villages or externally provided by non-governmental or government agencies – can or do fill in the apparent gaps in the social safety net.

AMA CRSP funding would also permit analysis of these data to identify how uninsured idiosyncratic risk affects asset accumulation trajectories. This might work through any of several mechanisms, each of which we can study in these data. First, in an area ripe with emerging commercial agricultural options that entail taking on new, added risks (at least in the near term), are those with access to social networks or other mechanisms that provide effective insurance against idiosyncratic risk more likely to take up new crops, technologies or marketing arrangements that yield higher expected returns? Second, conditional on having adopted new crops or technologies or entered into new marketing arrangements, does the experience of idiosyncratic agronomic, health or theft shocks – commonplace among all groups of households in the sample – have a greater and/or more persistent effect on household asset holdings according to its access to social networks and other insurance mechanisms? Finally, what effect does gender have on these patterns, of social exclusion, uptake of new opportunities, and shocks’ effects on asset dynamics?

Analytical strategy

Identifying the effects of shocks on household welfare trajectories. In all three countries, a major emphasis of the empirical work will be estimating the dynamic impact of shocks on assets and other welfare measures (consumption and poverty). We will make use of the detailed shocks histories in all our panel data sets to examine the impact of different types of idiosyncratic

shocks, accounting for differences in the timing of shocks (for example, do shocks have persistent or long-term impacts?). To ascertain the differences between ex ante and ex post risk, we can use the difference between the predicted likelihood of suffering a shock and actual experience of a shock. Differentiating among these will permit us to decompose the dynamic effects of uninsured idiosyncratic risk.

In our analysis, we will examine the extent to which inter-household variation in the (ex ante or ex post) impact of idiosyncratic risk can be attributed to household initial wealth, to differential participation in social networks and other traditional arrangements, to access to financial products or to flexible contract terms. In most countries, households typically employ a portfolio of strategies rather than favoring one single coping strategy (Skoufias and Quisumbing 2005), but the poor may not readily have access to them.⁴ Because households' access to insurance mechanisms is endogenous, we will need to control for the endogeneity of participation in social networks, access to credit, and in contractual arrangements. Also because it is possible that some types of idiosyncratic shocks (e.g., work-related injury may be more common among the poor, who have more hazardous jobs) are correlated with household characteristics, econometric methods will either have to address the endogeneity of shocks, or eliminate the impact of household-specific unobservables in estimating the impact of shocks. Our rich panel data sets enable us to address the endogeneity of some types of shocks using instrumental variables techniques, and to use household fixed-effects to purge the effects of

⁴ In Bangladesh and Ethiopia, for example, a large number of households use coping mechanisms such as incurring debt, selling assets, receiving transfers from friends or relatives, and participating in public safety net programs. However, poorer Bangladeshi households are not equally able to make use of private coping mechanisms such as credit, while richer households with better-educated heads tend to receive more remittances than do poorer households. Microfinance institutions and NGOs may therefore have increased the access of the poor to credit with which to cope with idiosyncratic shocks, although there is evidence that the ultra-poor find themselves excluded from NGO membership because they are asset poor (for example, they may be unable to keep up with loan

unobservable household-specific characteristics from the estimates of shock impacts.

Identifying the effect of mediating factors on households' ability to cope with shocks. The quantitative data allow us to examine the potential impact of different types of institutions (e.g., social networks, self-help groups, funeral societies), markets (e.g., interlinked cash crop contracts, microfinance contracts) and capacities (e.g., own wealth) on households' ability to cope with idiosyncratic risk. The data should enable us to identify the impact of these mediating factors on risk-coping, using instrumental variables methods to take into account the possibility that access to these mechanisms is endogenous to household characteristics.

We intend to complement the quantitative analyses by obtaining households' own views of shocks and coping mechanisms, at least in Bangladesh and Ghana.⁵ This will enable us to flesh out survey participants' assessment of idiosyncratic risks and the various mechanisms available to manage these. Qualitative work on mechanisms will necessarily be context-specific, depending on the type of mechanism to be found in each country. In Bangladesh, life histories work (to be conducted in March 2007, funded by CPRC) will obtain individual histories of shocks and their impact on households. Work to be funded by AMA CRSP would look into the mechanisms provided by NGOs to cope with idiosyncratic risk, and would involve case studies of selected NGOs (identified by a survey module on group membership). In Ethiopia, recently-completed qualitative work has focused on the role of *iddirs* (burial societies who sometimes provide health insurance) in providing insurance against health and other shocks, and enforcement mechanisms used by *iddirs* to ensure repayment. In Ghana, we would focus on the role of funeral, farming and church-related organizations in providing insurance and specifically

repayments or do not have necessary collateral assets or documentation) (Hallman et al. 2006).

⁵ Budget constraints limit our ability to replicate this component in Ethiopia, where we have prior qualitative work

explore with commercial agri-food firms the insurance mechanisms built – explicitly or implicitly – into emerging contracts for cash crop production.

Examining the co-evolution of insurance and asset stocks. The quantitative data permit us to study the structural correlates of social connectedness, participation in microfinance or contract farming schemes, etc., including how access to these prospective risk-mediating factors varies with asset holdings. To the extent that we find that participation in insurance mechanisms indeed varies systematically with asset stocks, a natural feedback loop emerges, wherein uninsured risk that leads to asset losses impacts subsequent participation in insurance mechanisms, which may lead to increased vulnerability. The Ghana survey data, in particular, are well-suited to econometric study of this phenomenon through panel data analysis. We also plan to explore this issue through qualitative work, such as the life histories in Bangladesh, by exploring with respondents their experience of changing access to formal or informal insurance through different channels and their perceptions as to if/why access evolved.

Policy Relevance

Our team’s ongoing and regular interactions with policymakers, donor agencies and the NGO communities in Bangladesh, Ethiopia and Ghana suggest increased appreciation within those circles that improved management of idiosyncratic risk can play an important role in poverty reduction and economic growth strategies. National and local governments, NGOs, and international donors are struggling to establish how best to help individuals, households and communities to manage risk without becoming excessively interventionist. We perceive significant demand for careful empirical analysis of the links between risk, contractual and informal mediating arrangements, and welfare dynamics. The ERHS is already being used in the

quadrennial poverty assessment by the Ethiopian government, in which Dr. Woldehanna is directly engaged as an expert adviser. Thus, our analyses have a natural entry point into high level policy discussions. The Bangladesh panel data set is also being used to write a background paper for the World Bank's ongoing Poverty Assessment. And ISSER is the primary policy research body in Ghana, with regular, high-level interactions with government officials to whom project findings will naturally and regularly flow.

We expect that the proposed research will strengthen the policy dialogue in each of our study countries, since it relates directly to important policy issues in each, not only for national governments, but also for USAID missions. For example, despite many recent economic advances, as of 2005, roughly half of the Bangladesh's population – almost 70 million people— remain poor. Among USAID's strategic objectives in Bangladesh are expanded economic opportunities created through equitable economic growth, and a healthier, better educated and more productive population. USAID is working with NGOs in Bangladesh to improve and expand health care of the poor, potentially protecting the poor from harmful health shocks. Moreover, gender has been identified by the USAID Mission's strategy statement as a cross-cutting issue in its work, given large gender disparities in Bangladesh. In Ghana, USAID – especially through the U.S. Presidential Initiative to End Hunger in Africa (IEHA) – and the U.S. Millenium Challenge Corporation both prioritize helping smallholder farmers – specifically in the area where we would work – integrate into export supply chains, which we hypothesize may be crucially affected by idiosyncratic risk management capacity. Gender and Disenfranchised and Vulnerable Groups are key cross-cutting themes in the USAID Ghana Mission's current strategy statement. And, as in Ethiopia, the USAID Strategic Framework for Africa emphasizes disease management as one of four focal areas for attention. Beyond the public health dimension

on which most work in this critical strategic area is focused, our research and outreach would shed light on both the short-and long-term impacts of illness and injury and on households' differential abilities to manage the risk associated with health shocks. Finally, USAID Ethiopia's Integrated Strategic Plan heavily emphasizes the critical importance of addressing shocks and vulnerability and cites prior research by our institutions, underscoring the strategic importance of these questions and the receptivity of key players to our findings.

Host Country Research Capacity Building

We have worked closely with the collaborating institutions in each country in the past and have amassed a strong track record of host country research capacity building with these and other partners. The three project PIs/co-PIs would be the project's representatives to the Technical Committee. All aspects of the research are being developed in full collaboration among the host country and US-based researchers, and we anticipate that most published outputs under this project will involve co-authorship across multiple institutions, reflecting full integration of the team in research activities, which should help build policy research capacity in each country.

The proposed project would also involve considerable degree and non-degree training of host country researchers. The total project budget (AMA CRSP funding plus matching funds) provides for (at least partial) graduate training of up to 11 students at Cornell, with priority given to Bangladeshi, Ethiopian and/or Ghanaian students, plus two years' half-time support for a post-doctoral research associate. Graduate students at the collaborating institutions (Addis Ababa University, Cornell University and the University of Ghana-Legon) would also have access to the data sets being analyzed at IFPRI for this project and could exploit these data for thesis research. We intend to publicize this option so as to maximize productive use of the project data.

Several more students and researchers in each country will benefit from the project through non-degree training, collaborative research activities, and access to newly collected data. Much of this training is already being undertaken through our ongoing collaboration with each partner. In Bangladesh, for example, in addition to periodic visits to IFPRI by DATA staff and participation in IFPRI research projects, capacity building at DATA in the area of qualitative data analysis is being funded by CPRC. In Ghana, Cornell-based visitors will provide several seminars and short courses in response to ISSER requests for training on methods and theory.

Contributions to AMA CRSP Research Priorities and to USAID Objectives and Initiatives

The proposed research fits squarely under AMA CRSP research priorities 1 (“managing risk and vulnerability to enhance asset protection and accumulation”) and 3 (“asset building for growth and poverty reduction”) given our project’s emphasis on how risk mediates asset accumulation. As already mentioned above, the project will also contribute directly to knowledge supporting USAID’s strategic objectives in each project country, in particular those related to expanded economic opportunities created through equitable economic growth, and a healthier and more productive population. One of our project countries, Ghana, is an IEHA country, which we note is a priority for the AMA CRSP.

Anticipated Outputs

Our project offers a solid balance between academic-oriented research and outputs targeted toward local and global policy-making communities. Our team has a very strong research publications record, including significant publications for both disciplinary and interdisciplinary audiences. We plan to publish several journal articles and book chapters from this project.

But we also put high priority on direct dissemination of research results to lay decision makers. Therefore, in addition to peer-reviewed research publications, we will engage in a range of outreach and dissemination activities targeted at communities, policymakers and development practitioners so that project research findings of this project can inform ongoing initiatives. In each country, outreach activities – mainly funded by our ongoing work in these countries – will involve both regular, informal meetings by resident collaborators and by visiting project researchers, as well as formal presentations and workshops.

The team's past projects have a strong track record of outreach and dissemination through community and farmer workshops at local level and policy workshops at national and regional levels. We will employ the same two-track model in each of the three project countries. The first track is to return project analyses to the communities from whence the data originate through meetings in survey sites to present basic descriptive statistics and associated implications to respondents and their communities. Past experience shows that such sessions provide researchers with valuable feedback and empower local subjects with information which they can sometimes act on themselves or at least to level the informational playing field with outside (governmental and non-governmental) agencies that will tap the information. The second track is more traditional policy workshops for development practitioners and policymakers in national capitals.

For these events we would prepare policy briefs summarizing research findings in non-technical terms for a busy, lay readership. The first project policy brief would be released in fall 2007. We will also produce a final, synthesis policy brief at the project's conclusion and more focused policy briefs reporting results from specific research papers in the intervening period.

Our team has longstanding research programs in all three countries, strong links to policymaker and donor communities in the region, and demonstrable past success with outreach.

Our established channels of communication and record of engagement with policymakers underscores our capacity to introduce research findings directly into practical, policy deliberations. The audiences in Bangladesh with which we are already in contact and plan to invite to these briefing workshops include, from the Government of Bangladesh, the Food Planning and Monitoring Unit (FPMU) of the Ministry of Food; the Department of Women's Affairs, Ministry of Women's and Children's Affairs; and the Bangladesh Bureau of Statistics, Ministry of Planning; from the donor community, USAID and DfID (a funder of CPRC); from the NGO community, the Bangladesh Rural Advancement Committee (Bangladesh's biggest NGO and a CPRC partner) and the Grameen Bank, among others; and Bangladeshi researchers and academics from universities and the Bangladesh Institute of Development Studies (a CPRC partner and IFPRI collaborator in past studies). In Ethiopia, our stakeholder network includes academics and researchers from Addis Ababa University, the Ethiopian Development Research Institute and the Ethiopian Economics Association; government ministries most notably the Welfare Monitoring Unit within the Ministry of Finance and Economic Development and the Food Security Coordination Bureau, Ministry of Agriculture, and from the donor community, USAID, DfID and the World Bank. In Ghana, key stakeholders we would engage include researchers and academics from the University of Ghana, the Consortium of Development Partnership, the Economy of Ghana Network, the Center for Policy Analysis, USAID and various contractors (e.g., Technoserve, Chemonics), as well as officials from government ministries such as the Ministry for Finance and Economic Planning, the Ministry of Food and Agriculture and the Ministry of Local Government and Rural Development.

References

- Ahmed, A. and C. del Ninno (2002). "The Food for Education Program in Bangladesh; an Evaluation of Its Impact on Education Attainment and Food Security." FCND Discussion Paper 138. Washington, DC, International Food Policy Research Institute.
- Alderman, H. and C. Paxson (1992). "Do the Poor Insure? A Synthesis of the Literature on Risk and Consumption in Developing Countries." World Bank Policy Research Working Papers 1008. Washington, DC, World Bank.
- Bardhan, P. and C. Udry (1999). Development Microeconomics. Oxford, Clarendon Press.
- Besley, T. J. (1995). "Nonmarket Institutions for Credit and Risk Sharing in Low-Income Countries." Journal of Economic Perspectives 9(3): 115-127.
- Bouis, H., B. de la Brière, L. Guitierrez, K. Hallman, N. Hassan, O. Hels, W. Quabili, A. Quisumbing, S. Thilsted, Z. Hassan Zihad, and S. Zohir. (1998). "Commercial Vegetable and Polyculture Fish Production in Bangladesh: Their Impacts on Income, Household Resource Allocation, and Nutrition." Washington, DC and Dhaka, International Food Policy Research Institute and Bangladesh Institute of Development Studies, Institute of Nutrition and Food Science.
- Dasgupta, P. (1997). "Nutritional Status, the Capacity for Work, and Poverty Traps." Journal of Econometrics 77(1): 5-37.
- Davis, P. (2006). "Discussions among the Poor: Exploring Poverty Dynamics with Focus Groups in Bangladesh." unpublished paper, University of Bath.
- de Weerd, J. (2005). "Measuring Risk Perceptions: Why and How." Social Protection Discussion Papers Series No. 0503. Washington, DC, World Bank.
- de Weerd, J. and S. Dercon (2006). "Risk-Sharing Networks and Insurance against Illness." Journal of Development Economics 81(2): 337-356.
- Deaton, A. (1997). The Analysis of Household Surveys: A Microeconomic Approach to Development Policy. Baltimore, Johns Hopkins University Press.
- Dercon, S. (2005). "Risk, Poverty and Vulnerability in Africa." Journal of African Economies 14(4): 483-488.
- Dercon, S., J. Hoddinott and T. Woldehanna (2006). "Growth and Poverty in Rural Ethiopia:

- Evidence from 15 Communities 1994-2004." unpublished paper. Washington, DC, International Food Policy Research Institute.
- Fafchamps, M. and F. Gubert (forthcoming). "The Formation of Risk-Sharing Networks." Journal of Development Economics.
- Gertler, P. and J. Gruber (1997). "Insuring Consumption against Illness." NBER Working Paper No. W6035.
- Goldstein, M. (1999). "Chop Time, No Friends: Intrahousehold and Individual Insurance Mechanisms in Southern Ghana." Berkeley and New Haven, Department of Agricultural and Resource Economics University of California, Berkeley and The Economic Growth Center Yale University.
- Hallman, K., D. Lewis and S. Begum (2003). "An Integrated Economic and Social Analysis to Assess the Impact of Vegetable and Fishpond Technologies on Poverty in Rural Bangladesh." Food Consumption and Nutrition Division Discussion Paper 163. Washington, DC, International Food Policy Research Institute.
- Kazianga, H. and C. Udry (2006). "Consumption Smoothing? Livestock, Insurance and Drought in Rural Burkina Faso." Journal of Development Economics **79**(2): 413-446.
- Lybbert, T., C. B. Barrett, S. Desta and D. L. Coppock (2004). "Stochastic Wealth Dynamics and Risk Management among a Poor Population." Economic Journal **114**: 750-777.
- McPeak, J. G. (2006). "Confronting the Risk of Asset Loss: What Role Do Livestock Transfers in Northern Kenya Play?" Journal of Development Economics **81**(2): 415-437.
- Morduch, J. (2004). Consumption Smoothing across Space: Testing Theories of Risk-Sharing in the Icrisat Study Region of South India. Insurance against Poverty. S. Dercon. Oxford, Oxford University Press.
- Quisumbing, A. R. and J. Maluccio (2003). "Resources at Marriage and Intrahousehold Allocation: Evidence from Bangladesh, Ethiopia, Indonesia, and South Africa." Oxford Bulletin of Economics and Statistics **65**(3): 283-328.
- Santos, P. and C. B. Barrett (2006). "Informal Insurance in the Presence of Poverty Traps: Evidence from Southern Ethiopia." Ithaca, Department of Applied Economics and Management, Cornell University.
- Skoufias, E. and A. R. Quisumbing (2005). "Consumption Insurance and Vulnerability to

- Poverty: A Synthesis of the Evidence from Bangladesh, Ethiopia, Mali, Mexico and Russia." European Journal of Development Research **17**(1): 24-58.
- Townsend, R. (1994). "Risk and Insurance in Village India." Econometrica **62**: 539-591.
- Townsend, R. (1995). "Consumption Insurance: An Evaluation of Risk-Bearing Systems in Low-Income Economies." Journal of Economic Perspectives **9**(3): 83-102.
- Udry, C. (1990). "Credit Markets in Northern Nigeria: Credit as Insurance in a Rural Economy." World Bank Economic Review **4**(3): 251-269.
- Udry, C. and T. Conley (2005). Social Networks in Ghana. The Social Economics of Poverty: Identities, Groups, Communities and Networks. C. B. Barrett. London, Routledge.
- Vanderpuye-Orgle, J and C.B. Barrett (2006). Risk Management, Insurance and Social Networks in Ghana. Cornell University. Mimeo.
- Zeller, M., M. Sharma, U. Ahmed and S. Rashid (2001). "Group-Based Financial Institutions for the Rural Poor in Bangladesh. An Institutional- and Household-Level Analysis." Research Report 121. Washington, DC, International Food Policy Research Institute.

Project Impact Indicators, Timeline and Benchmarks

Key indicators of impact in this project will include (1) host country personnel trained, both through degree, post-degree and non-degree programs, (2) research publications and associated citations, (3) policy briefs written and distributed, for which we can also document numbers and sources of requests for copies, (4) documented contact with policymakers, donors, and communities in outreach workshops, and coverage by local media, (5) attestation by such stakeholders as to the value of the empirical analysis and capacity building activities undertaken by the project. We plan to document and report these impact indicators as the project progresses.

<u>Date</u>	<u>Benchmark event</u>
Project year 1: (2007-8)	<ul style="list-style-type: none"> Preliminary field visit to NGOs in Bangladesh; start of institutional study Field work on NGOs and risk-coping in Bangladesh Policy brief #1 (describing project) drafted and released Three graduate students trained at Cornell Ghana survey preparations (update questionnaires, train enumerators, etc.) Pre-survey Ghana stakeholder meetings (local and national levels) Produce first draft Bangladesh quantitative and institutional papers Two team members participate in Technical Committee meeting
Project year 2: (2008-9)	<ul style="list-style-type: none"> Outreach workshop in Bangladesh (with policy briefs) Complete draft Bangladesh papers (quantitative and institutional) Three graduate students trained at Cornell Ghana survey and qualitative field work Ethiopia data analysis and first draft of papers Two team members participate in Technical Committee meeting
Project year 3: (2009-10)	<ul style="list-style-type: none"> Bangladesh in-country findings workshop (with policy briefs) Ethiopia in-country findings workshops (with policy briefs) and results disseminated in field Ghana data analysis and first draft of papers Ghana outreach meetings with stakeholders (with policy briefs) Three graduate students trained at Cornell Publication of project research results in peer-reviewed outlets Two team members participate in Technical Committee meeting

Project year 4:
(2010-11)

Draft synthesis of research findings across three countries
Completion of final project policy brief summarizing project
research findings

Two graduate students trained at Cornell

Publication of project research results in peer-reviewed outlets

Ghana project policy outreach events (with policy briefs)

Two team members participate in Technical Committee meeting

Researchers' Qualifications

Our team is comprised of 7 Ph.D. (or soon-to-be Ph.D.) scientists and 3 M.S. scientists. Curricula vitae for the three lead institutions' principal investigators (Barrett, Quisumbing and Vanderpuye-Orgle) follow.

Dr. Akhter Ahmed, an American citizen originally from Bangladesh, is Senior Research Fellow at the International Food Policy Research Institute, where he co-leads a research program on evaluating interventions designed to increase human capital investments. He received a Ph.D. in agricultural economics from Colorado State University, and an M.S. in agricultural economics from Cornell University. Before coming to IFPRI in 1990, Ahmed worked with the World Bank and was an agricultural economist for the U.S. Agency for International Development. Ahmed works on strategies for restructuring safety net and social protection programs to improve the food security and nutrition of the poor, and to reduce and mitigate risks to livelihoods of vulnerable people in developing countries. Ahmed was posted in his native Bangladesh from 1990 to 1994, where he worked on targeted interventions for improving food consumption and nutrition of the poor. From 1996 to 1999 he was posted in Egypt as the leader of IFPRI's collaborative project on food security research. Currently based at IFPRI headquarters, he is managing a project in India that aims at improving health and nutritional status of children and women from poor families, and is involved in evaluating food- and cash-based education interventions in Bangladesh and in Sub-Saharan Africa. Ahmed also worked on poverty and social protection issues in China, Malawi and the Philippines. Dr. Ahmed will work on the Bangladesh component of this project.

Dr. Chris Barrett, an American citizen, is a professor in the Department of Applied Economics and Management at Cornell University, where he is also a member of the graduate fields of conservation and sustainable development, economics, international agriculture and rural development, international development, and natural resources. He earned a dual Ph.D. in agricultural economics and economics from the University of Wisconsin-Madison, with an emphasis on international development and agricultural production and marketing. He has worked extensively in Africa, has served as PI on three previous USAID BASIS CRSP projects concerning welfare dynamics in rural Africa and co-PI on a USAID Global Livestock CRSP project concerning pastoral risk management. In addition to extensive academic publications, he spent several years working on African development issues as a policy economist in Washington and remains actively engaged with donor, NGO and government policy stakeholders in many countries. Dr. Barrett is the project's principal investigator, with overall responsibility for all project activities.

Dr. John Hoddinott, a Canadian citizen, is Deputy Division Director and Senior Research Fellow at IFPRI. Prior to taking up this post, he was an Associate (tenured) Professor of Economics at Dalhousie University (cross-appointed to International Development Studies) from 2000-2002, a University Lecturer in Economics and Fellow and Tutor at the University of Oxford and a Research Associate at the Centre for the Study of African Economies, Oxford. He holds a B.A. in economics from the University of Toronto and a D.Phil. in Economics from the

University of Oxford. He has worked extensively in Africa, including leading the 2004 ERHS survey round and as a co-PI on a USAID BASIS CRSP (on pathways from poverty). In addition to extensive academic publications, he has interacted with senior policy makers in a number of African countries as well as with USAID and other donors. Dr Hoddinott will have primary responsibility for the Ethiopian component of the study.

Mr. Felix Naschold, a German citizen, will complete his Ph.D. in the Department of Applied Economics and Management, with a minor in Statistics, at Cornell University in the summer of 2007. His research develops new quantitative methods for analyzing and measuring long term household poverty and inequality dynamics and applies them to panel data from rural Pakistan, India and Ethiopia. Previously, he earned an M.Sc. in Development Economics from the School of Oriental and African Studies in the University of London. Prior to re-entering academic life at Cornell he spent two years as a fiscal policy advisor to the Government of Fiji, and four years at the Overseas Development Institute in London as a researcher and consultant for poverty, aid and public expenditure issues in Africa and Asia working for a range of donor organizations. As a part-time post-doctoral research associate he will help coordinate the overall project as well as contribute to specific country analyses, focusing on quantitative panel data analysis.

Dr. Agnes Quisumbing, a Filipino national, is a Senior Research Fellow at IFPRI. She has M.A. and Ph.D. degrees in economics from the University of the Philippines, Quezon City and was a Fulbright-Hayes Doctoral Enrichment Grantee at the Massachusetts Institute of Technology. Prior to joining the IFPRI staff in 1995, she had been on the faculty of the University of the Philippines at Los Banos, the School of Economics, University of the Philippines, Quezon City, an Affiliate Postdoctoral Scientist at the International Rice Research Institute, Los Banos, Philippines, a Visiting Fellow, Economic Growth Center, Yale University, a Consultant and then Economist in the World Bank. She has considerable field experience in Asia, Africa, and Latin America in the areas of land tenure and intrahousehold allocation. In Bangladesh, as part of a study on the impact of new agricultural technologies on nutrition, incomes, and intrahousehold allocation, she designed and analyzed the modules that obtained information on women's bargaining power within the household, and examined the impact of men's and women's assets at marriage on household expenditure allocations and child schooling outcomes. She has been involved in a longitudinal study of the effects of past credit constraints on asset accumulation and wellbeing in the Philippines (funded by BASIS-CRSP), a longitudinal study on the impact of early childhood nutrition on human capital accumulation and economic productivity in Guatemala, and a longitudinal study of the long-term effects of food assistance in Bangladesh. She is currently co-investigator of the CPRC-IFPRI study of the long-term impact of anti-poverty interventions in Bangladesh. She will be a co-principal investigator, with overall responsibility for IFPRI's work on this project and a primary focus on the Bangladesh component.

Ms. Jacqueline Vanderpuye-Orgle, a Ghanaian citizen, is a Ph.D. candidate in the Department of Policy Analysis and Management at Cornell University who will complete her degree in the summer of 2007. Her research focuses on risk management and social networks among farmers in southeastern Ghana, particularly the scope and efficiency of informal insurance as well as the effects of idiosyncratic shocks on health outcomes and asset poverty traps. Prior to starting her doctoral

studies, she earned a M.Sc. in Applied Economics and Management from Cornell University, a Pre-doctoral Certificate in Economics from Yale University and a B.Sc. in Agricultural Economics from the University of Ghana. She has worked as Visiting Research Fellow with the Institute of Statistical, Social and Economic Research, to which she will return following completion of her Ph.D., and as a Consultant and a Research Assistant with the Macroeconomics and Public Policy Divisions of the Development Research Group at the World Bank on various projects. She has extensive field experience in Ghana, where she designed and implemented surveys to assess the nature of social networks and idiosyncratic risk faced by farmers in southeastern Ghana. As a co-principal investigator, Ms Vanderpuye-Orgle will have responsibility for the Ghana component of the study.

Dr Tassew Woldehanna, an Ethiopian citizen, is an Assistant Professor in the Department of Economics, Addis Ababa University and a Visiting Assistant Professor at Wageningen University, the Netherlands. His principal research interest lies in understanding poverty and its determinants. Past research has encompassed the analysis of household behavior with particular attention paid to the behavior of farm households, occupational choice, micro-credit and the diversification of income sources in rural Ethiopia, the role of education in facilitating risk-taking in agriculture and assessing poverty-reducing schemes. Currently, his work focuses on the analysis of poverty in Ethiopia - its determinants, trends and regional (spatial) distribution – with particular emphasis placed on the analysis of micro data. Dr Woldehanna oversaw the implementation of the 2004 round of the Ethiopia Rural Household Survey and has worked with Dr Hoddinott on its analysis. He is currently leading the Government of Ethiopia’s quadrennial poverty assessment. He will work with Dr. Hoddinott on the Ethiopia component of the study.

Data Analysis and Technical Assistance Limited (DATA), a Bangladeshi consulting firm with expertise in conducting surveys and data analysis, will be responsible for carrying out the institutional study of NGOs under this project. DATA and IFPRI jointly designed the original surveys that are being revisited as part of the CPRC-funded longitudinal study, as well as the ongoing resurvey. DATA was founded in 1994 by three former IFPRI employees as a research consulting firm specializing in survey design, data collection and analysis. Over the past 11 years, DATA has carried out numerous surveys for IFPRI’s research work in Bangladesh. With close ties with IFPRI and other internationally renowned research institutions, DATA’s excellent reputation has earned them contracts from various international organizations including CPRC, the World Food Programme-Bangladesh, the World Bank, European Union, U.S. Department of Agriculture (USADA), CARE-Bangladesh, World Vision-Bangladesh, MISEREOR-Germany, Population Council-New York, Save the Children (USA), Tufts University School of Nutrition Science and Policy, IRIS Center at the University of Maryland, and Development and Training Services, Inc (USA).