



BASIS CRSP

Sixth

Annual Report

Activities
2001-2002

Workplans
2002-2003

and

Outreach
2003

October 2002

BASIS CRSP

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READER'S GUIDE

This is the initial annual report for Phase II of the BASIS CRSP. Phase I ended in September 2001, and the previous five BASIS CRSP annual reports cover its activities and findings. This report has a slightly different format. The first section, which is also published separately as a *BASIS Brief*, offers an overview of BASIS CRSP by outlining the goal of rural prosperity, detailing the research program and the three global constraints it targets, and showing the methods by which the research findings are communicated to key audiences.

The second section, "Project Portfolio," covers the activities and workplans of the five projects that initiated the Phase II research program. At the time of this report, these projects had finished the first year of the three years planned, and each reports on preliminary findings and anticipated work for the coming year. The third section, "Research on Rural Financial Markets," introduces three new projects that were added to the portfolio in October 2002. The fourth section, "Outreach," covers the two workshops and conferences planned for 2003. Finally, the annex offers summaries of activities of Phase I projects whose completion overlapped with the first year of Phase II.

Our thanks go to all who participate in the BASIS CRSP for helping make this document possible. Comments on this report and BASIS's work are encouraged. Please visit the BASIS website for more information about the projects, contact information, and upcoming events: <http://www.basis.wisc.edu>.

THE BASIS CRSP PROGRAM: AN OVERVIEW

Seeking Rural Prosperity

BY HELPING MAKE MARKETS WORK FOR ALL, BASIS CRSP seeks to improve the quality of life for people in rural areas of the developing world. With a cutting edge and innovative research program, BASIS produces impacts through its publications, training, education, capacity building, and informed policy recommendations that help facilitate broadly based and sustainable economic growth.

More and more people around the world face hunger and malnutrition even as food supplies are abundant. Aid programs that deliver food for emergencies can be of short-term benefit, but there remains a critical need to prevent more people from falling into poverty and to find ways for those who already are poor to escape poverty permanently.

Strategies for accumulating and protecting assets are important. Also there must be sound strategies for recovering from disasters such as drought, war, and HIV/AIDS, avoiding the degradation of one's own resources and those shared with others, and participating in the institutions that manage resources and other assets. BASIS seeks to provide these strategies through a coherent research program that addresses a basic cause of chronic poverty: lack of access or unequal access to factors of production such as land, water, labor, and finance, as well as to services, information, and market opportunities.

Solutions are not as simple as linking the poor to rural factor markets. Often these markets are missing or imperfect, leaving non-market institutions and rules to broker resource allocation and access. Missing and imperfect factor markets often underlie problems of food insecurity, poverty, and unsustainable growth. In such an environment, a rural household's ability to access, accumulate, and



Rural prosperity is the BASIS CRSP goal.

(Photo by A. Peter Castro.)

effectively utilize resources is constrained, and people often resort to unproductive accumulation strategies. Increasing numbers of households find themselves unable to respond to economic opportunities that emerge while also lacking effective strategies for coping with economic downturns, disasters, and changes brought about by political, social, or economic restructuring.

Methods for helping the rural poor often are regionally specific, yet lessons learned in one area may in fact provide key elements to solutions in other areas. A well-balanced examination across regions of rural factor markets and their role in enhancing or constraining growth can inform policy that seeks to foster rural economies in which growth is a sustainable foundation for broad rural prosperity.

Developing Innovative Solutions

In 1996, the United States Agency for International Development (USAID) launched BASIS—a collaborative research support program that examines the interactions and inter-relationships of land, water, labor, and financial factor markets and the impacts of policy or policy reform in helping improve access to and efficiency of factor markets. Phase I of the program ended in September 2001. At that time, USAID awarded the University of Wisconsin-Madison an additional five-year grant to extend the research to 2006.

BASIS Phase II is comprised of individual research projects in multiple regions of the world designed to have policy impact both locally and globally. The projects emerge from a competitive process that selects the top proposals submitted in response to a call for work on pressing global constraints to growth. Projects are intended first to understand the constraints to development and then to deliver innovative and creative policy solutions.

Although each project focuses on a country or a regional context, BASIS looks for lessons and policy innovations that can be applied worldwide. Initially, the following five primary research projects were supported; each runs three years and receives approximately \$200,000 per year in core funds.

1. **Input Market Constraints upon the Growth of Russian Agriculture:** Land, Labor, Capital, and other Inputs under Alternate Economic Reform Policies
2. **Institutional Innovations to Improve Equity Sharing under Privatization and Farm Restructuring:** Helping Land Reform Beneficiaries Gain Access to Land and Financial Resources in Central Asia and Southern Africa
3. **Institutional Dimensions of Water Policy Reform in Southern Africa:** Addressing Critical Water-Land Intersections in Broadening Access to Key Factors of Production
4. **Rural Markets, Natural Capital, and Dynamic Poverty Traps in East Africa**
5. **Assets, Cycles, and Livelihoods:** Addressing Food Insecurity in the Horn of Africa and Central America
6. **Credit Reporting Bureaus and the Deepening of Financial Services for the Rural Poor in Latin America**

7. **The Structure and Performance of Rural Financial Markets and the Welfare of the Rural Poor:** A Comparative Study in Peru and Mexico
8. **The Long-Run Effects of Access to Financial Services on Asset Accumulation, Economic Mobility, and the Evolution of Wellbeing:** Revisiting Agricultural Commercialization in Bukidnon, 1984-2003

Together, these eight projects target imperfections in factor markets and other resource allocation institutions that result in the following constraints to broadly based and sustainable growth:

Global Constraint 1: *Ineffective agricultural resource use in post-reform economies*

Global Constraint 2: *Unsustainable use of environmentally sensitive resources*

Global Constraint 3: *Poverty and food insecurity traps*

As detailed below, each BASIS project addresses one or more of these constraints in innovative ways with the goal of providing policymakers with solutions in specific regions for specific populations while also establishing and maintaining a dialogue among researchers and policymakers that allows for synthesis across regions and a broader understanding of the constraints.

Global Constraint 1: *Ineffective agricultural resource use in post-reform economies*

In many regions, a knowledge base for understanding how factor market constraints stunt and misshape economic growth does not exist. In eastern Europe and central Asia, research based on aggregate statistics reveals poor post-reform performance; however, detailed farm and market-level studies have yet to be undertaken that would identify the specific constraints underlying disappointing macroeconomic records.

BASIS Project “**Input Market Constraints upon the Growth of Russian Agriculture**” is producing reliable information on the progress, performance, and constraints to reform. Today, in Russia, many farm laborers find it nearly impossible to sustain a livelihood, let alone to realize a profit that might allow for investment in their farming enterprise or simply as a buffer against future crises. As much as 80% of the large former collective farms may be

insolvent. Data suggest that the smaller private family farms that sprang up in the past decade may be more efficient yet nonetheless have widespread problems of unprofitability. Certain inputs like fertilizer and fuels may be overabundant on some of the larger, former cooperative farms and therefore go to waste, while these same valuable inputs are unavailable to the small, private farmers. A shortage of skilled labor and an oversupply of unskilled labor throughout the agricultural sector might also contribute to the unprofitability of farms. Yet policies that increase productivity, output growth, and farm income must at the same time account for the impact on people's lives.

At the core of the BASIS project in Russia is a major survey of farms that generates primary data about the situation. The project brings together a team of leading experts from Russia, the United States and other countries to debate hypotheses about the state of land, labor, input, and financial markets in Russian agriculture and to devise ways the survey can produce more consistent and accurate information.

Collaboration of this depth and at this level, particularly on politically sensitive issues such as land resources and agricultural output, already represents a significant impact.

Analytical methods being developed by the collaborating researchers will help quantify the extent to which factor market constraints prevent Russian agriculture from functioning efficiently and profitably. The goal is to identify the most critical constraints upon which policy should focus.

In some regions, knowledge about how factor market constraints stunt and misshape economic growth is well-developed. The challenge is to consolidate and use this knowledge to find coherent policy reform models.

BASIS Project “Institutional Innovations to Improve Equity Sharing under Privatization and Farm Restructuring” builds on established knowledge about the constraints that limit effective resource use by smallholders. During periods of political and economic transition, rural people often are unable to use land resources productively. In some countries transitioning away from collective farms, it may not be feasible to privatize land and other assets; therefore, many people find themselves as co-owners of these resources. Such enterprises face enormous constraints to growth in the Kyrgyz

Republic, where, for example, a plant that produces fruit juice may not be able to obtain credit to purchase bottles in order to distribute the final product. This is because many businesses remain heavily indebted to the state, while at the same time the owners are wary of taking on extra investors as a means of raising capital.

South Africa too is struggling with land reforms, though clearly the economic and historical context is very different from that found in the Kyrgyz Republic.

Nonetheless, South Africa has seen some successes with farm worker equity schemes, and these may provide useful lessons.

When a farmworker sees benefits to exchanging his

or her cattle for equity shares or even land from a farmowner, such an incentive can contribute to the overall reform effort of redistributing farmland and wealth and improving agricultural production. Identifying the institutional practices that best allow individuals to successfully co-own enterprises can highlight directions for facilitating reform and redistribution efforts in many countries and regions.

The BASIS project's case studies on enterprises in the Kyrgyz Republic and South Africa are yielding information on best practices behind successful



Field interviews of households help BASIS gather data on land use. This interview took place in a rural community near Addis Ababa.
(Photo by Michael Roth.)

attempts to share and co-own resources through equity schemes. The project will apply these best practices to the design or redesign of one or more equity sharing enterprises that will be a model for assessing how organizational and institutional innovations can improve performance, measuring not only financial health but also environmental sustainability and the empowerment of disadvantaged groups. Analysis will reinforce understanding of the specific practices that positively impact performance of this type of enterprise.

Global Constraint 2: *Unsustainable use of environmentally sensitive resources*

Management of natural resources may become subject to institutional dissonance or incoherence. Contemporary policy discourse centers on two narratives: one of economic efficiency and one of democratic participation. In efforts to achieve these goals, many governments have decentralized the management of natural resources within their countries. Rather than leading to more efficiency and democratization, however, this restructuring in some cases has led to increased tension, conflict, and misuse of resources.

BASIS Project “**Institutional Dimensions of Water Policy Reform in Southern Africa**” explores this situation where policy toward river basin management is subject to sometimes conflicting institutional impulses toward both economic efficiency and democratic participation. In some southern African countries, management responsibility over a key natural resource—water—is being shifted from governments to multiple users in the private sector. Formal irrigation schemes are being transferred to farmers organized into water user associations, putting more responsibility into the hands of individuals. Meanwhile, “informal” irrigation is estimated to cover even more area than the formal schemes. In both the formal and informal irrigation schemes, water is a scarce factor of production and competition over its use and control is increasing. In this atmosphere, social status and power relations within the community may give unfair advantages to some users.

In Malawi, a smallfarmer can greatly benefit by having a plot near a river or streambed, and yet the way he or she uses the water and the land it irrigates

may be incompatible with another farmer nearby. In the new decentralized environment, there may be no clear way to avoid disputes or resolve them equitably. In fact, there may be multiple, overlapping institutions and policies governing the situation. Policymakers need a fuller picture of how proposed land and water polices interact and affect efficient, sustainable, and equitable use of resources.

The BASIS project in southern Africa is finding that conflict due to problems of access to credit, pricing, unspecific boundaries, and inconsistent and overlapping reforms may be increasing in the decentralized atmosphere. Also, in certain regions, the new policies have not accounted for traditional descent and residence patterns. BASIS is providing better understanding of where policies that were drafted separately may need to be reconciled. The project also is detailing the extent to which management institutions can assure sustainability of the natural resource base while remaining faithful to democratic participation and inclusion.

The same factor market and resource allocation constraints that inhibit productive use of agricultural resources also may constrain the use of environmentally sensitive resources. In post-reform environments, sustaining the productivity of natural resources may require significant investment and trading off current wellbeing for future wellbeing. Also, an individual’s use or misuse of the resource directly affects others who depend on the same resource.

BASIS Project “**Rural Markets, Natural Capital, and Dynamic Poverty Traps in East Africa**” explores the hypothesis that missing financial markets contribute to a poverty trap that makes it difficult for poor households to accumulate productive assets and improve their livelihood over time. Most of the very poorest people throughout the world must sustain themselves through agriculture. For many, poverty is not a temporary situation but an enduring trap. Lacking strategies to escape poverty, people often resort to farming techniques that degrade the very resources upon which they depend, thus almost eliminating any hope for gaining investment opportunities needed to escape these conditions and improve the productivity of their land.

In central Kenya, tea farmers have opportunities to obtain fertilizers through a credit-in-kind system with tea processors. Therefore, these farmers are able not only to keep productivity high but also to maintain

soil quality. Many coffee farmers in the region do not have the same credit opportunities and would like to shift from coffee production into something currently more remunerative, such as tea or dairy. Yet such a shift requires an initial investment and knowledge of how to make the new opportunity productive. Farmers who lack the cash or knowledge are forced to continue growing coffee without inputs such as fertilizers while inexorably depleting the value of the soil. Situations such as these challenge policymakers to find ways for people to avoid the downward spiral of poverty and resource degradation.

Once caught in this trap, households may have little choice but to deplete soils and otherwise draw down the natural resource base simply in order to survive day by day. By collecting a combination of quantitative and qualitative data, BASIS is creating a multi-dimensional picture of households that are vulnerable to cycles of poverty and resource degradation. The goal is analyze these data on welfare dynamics to explore how these relate to associated changes in soil quality and land and livestock productivity. BASIS's analysis will provide policymakers with the information needed to help smallholders sustain their resource base.

Global Constraint 3: *Poverty and food insecurity traps*

It is increasingly clear that there are persistently or chronically poor people caught in poverty traps for whom the passage of time offers no relief. It is one thing to make markets work better for the less well-off in the short term. It is even more powerful to make markets work so that people can use time to enhance their assets, capabilities, and food security. In addition to targeting Global Constraint 2, BASIS Project “**Rural Markets, Natural Capital, and Dynamic Poverty Traps in East Africa**” also confronts the issue of how missing financial markets and the fixed costs of investment create poverty traps. Investment opportunities that offer poor people the chance to improve their livelihoods over time are themselves subject to significant fixed costs. The lack of financial markets to help poor people reach the critical minimum investment size means that households may become stuck in unprofitable savings and investment strategies.

BASIS's preliminary analysis of the data collected suggests that vertically integrated systems enable small farmers to transition into more remunerative situations, larger farms are better able to take advantage of emerging opportunities, and resource access is key in places where crucial inputs cannot be obtained through market mechanisms. The connections BASIS has established with local and national policymakers have allowed it to begin to effectively deliver preliminary findings on issues of education, output market structure, resource access, and farm size as it relates to access to markets and profitability.

When households face a shared “shock,” the prices of productive assets tend to move with household income so that when income is low, asset prices also are low. In this circumstance, and in the absence of insurance markets, it is difficult for a household to cope with shocks by drawing down on stocks of the productive assets. For poor people who are exposed to subsistence risk, their only viable strategy may be to build up buffer stocks even though the rates of return on such stocks can be very low or even negative, as in the case of grain stores. Poverty is thus reproduced over time by low wealth and by low realized returns on wealth. As when there are large fixed costs to investment, the result of missing financial markets may be poverty traps.

BASIS Project “**Assets Cycles, and Livelihoods**” focuses on the role of shocks in creating poverty traps and explores who gets caught in risk-induced poverty traps. Partly as a result of increasing poverty, nearly 40% of agricultural land throughout the world now is seriously degraded. This problem is growing in many areas, especially in areas of Africa and central America. Natural disasters such as drought and hurricanes, common in these regions, can further deplete resources and the meager assets and savings of those who depend on them. Severe food insecurity is a grave danger in regions prone to these climatic shocks. A drought in Ethiopia is not an unusual occurrence, yet what is alarming is the fact that few of the rural poor find ways to cope with these conditions. A hurricane can be as devastating as drought, yet in the wake of Hurricane Mitch, rural communities in Honduras seem to have better opportunities to avoid being trapped in poverty as a result of the shock. A Honduran household's relatively good access to factor markets along with more nonfarm opportunities for generating income contributes to its ability to

recover. Studies of communities in regions prone to shocks can document the relationship between factor markets and the differing ability of households to recover from cycles of shocks and accumulation.

BASIS builds on extensive quantitative household panel data sets from Ethiopia, Kenya, and Honduras that document both shocks and patterns of asset accumulation and deaccumulation over time periods in which households have suffered severe climatic shocks. Matching these quantitative data with careful qualitative exploration of the household cycles of shocks and accumulation is leading to a unique understanding of the role risk plays in keeping poor households poor in the face of imperfect factor markets. The goal is to find ways for these households to avoid dependency upon relief aid and instead find viable methods for retaining assets and improving access to markets as they recover from natural disasters such as droughts or hurricanes.

In October 2002, BASIS funded three new research projects that add a dimension to BASIS's work on the global constraints to growth, and will increase knowledge about rural finance markets and their links to other factor markets. The projects also deepen BASIS's work in Latin America and Asia. The first two projects help BASIS address Global Constraints 1 and 3. The third project adds to understanding of Global Constraint 3.

BASIS Project “**Credit Reporting Bureaus and the Deepening of Financial Services for the Rural Poor in Latin America**” analyzes how the emergence of credit reporting systems might overcome the poor's reluctance to leverage meager assets in order to gain access to capital. The goal of the project is to help guide best practices in the legal and regulatory formulation of credit reporting systems by anticipating how these systems will transfer access to credit for different classes of borrowers and how they will affect competition among rural credit lenders.

BASIS Project “**The Structure and Performance of Rural Financial Markets and the Welfare of the Rural Poor**” investigates the degree to which recently liberalized rural financial markets in Peru and Mexico meet the needs of the rural poor. The project will deliver an assessment of the impact financial market access has on household welfare, production decisions, and the ability to accumulate assets over time.

BASIS Project “**The Long-run Effects of Access to Financial Services on Asset Accumulation, Economic Mobility, and the Evolution of Wellbeing**” studies the differential effects of credit constraints on households exposed to commercial agriculture and those relying on food crop production. The goal is to understand how access to rural financial services affects patterns of physical and human capital accumulation, economic mobility, and wellbeing over a long period of time.



Washing corn to make tortillas. Unlike this household in rural El Salvador, most rural poor are unable to access credit for investment in either farm and nonfarm endeavors. New BASIS projects study factors that encourage or prevent poor households from participating in rural financial markets.
(Photo by Danielle Hartmann.)

Combined, the eight projects in the BASIS research program provide a multi-faceted picture of the constraints to growth in the rural sector. Already, BASIS has begun delivering findings that will help bolster policy solutions to remove, relax, or avoid those constraints.

Delivering Impact

The BASIS goal is to find ways for people in the rural agricultural sector to realize prosperity. The foundation by which BASIS can begin to reach this goal is its comprehensive and innovative research program that attempts to overcome three global constraints to growth. From this foundation, the method for achieving rural prosperity is to connect the research findings to key audiences of host country policymakers, international policymakers, and the global academic community. With the understanding that research is only as effective as how findings are communicated, BASIS uses a range of methods for delivering results and recommendations that strengthen existing policies or lead to new policies.

At the core of each project is a strong collaborative relationship between principal investigators from the host country and the United States. This allowed BASIS to create an impressive network of some of the best academic institutions in the US and abroad, as well as drawing into the program “action groups” of key institutions and organizations throughout the world that have a direct influence on local policy.

Immediate outputs already being generated come in the form of background papers, small seminars, education, training, and policy dialogue. BASIS projects are training enumerators and graduate students, conducting study tours and workshops, and providing classroom and other types of education. Since 1996, BASIS has provided short-term training to over 1,300 individuals and supported degree training for 62 BA, MA, and Ph.D. students. In this way, BASIS engages and strengthens the skills of those responsible for designing and implementing policies in particular contexts.

In the past six years, BASIS has produced more than 250 outputs. BASIS researchers contribute to the academic literature through peer-reviewed journals, books, and papers presented at their professional conferences. BASIS research appears not only in top international journals but also in regional and local journals, with the result that BASIS contributes to strengthening the academic communities in countries where it works.

BASIS findings, both the longer, academic outputs and the shorter, policy-oriented outputs, are made

BASIS Briefs in 2002

- No. 5.** “Building Assets for Sustainable Recovery and Food Security,” by Peter D. Little, Abdel Ghaffar M. Ahmed, Michael Carter, Michael Roth, and Workneh Negatu. January 2002. <http://www.basis.wisc.edu/live/basbrief05.pdf>
- No. 6.** “Poverty Traps and Resource Degradation,” by Christopher B. Barrett, Lawrence E. Blume, John G. McPeak, Bart Minten, Festus Murithi, Bernard N. Okumu, Alice Pell, Frank Place, Jean Claude Randrianarisoa, and Jhon Rasambainarivo. January 2002. <http://www.basis.wisc.edu/live/basbrief06.pdf>
- No. 6-F.** “Le piège de la pauvreté et la dégradation des ressources,” par Christopher B. Barrett, Lawrence E. Blume, John G. McPeak, Bart Minten, Festus Murithi, Bernard N. Okumu, Alice Pell, Frank Place Jean Claude Randrianarisoa, et Jhon Rasambainarivo. Octobre 2002. <http://www.basis.wisc.edu/live/basbrief06f.pdf>
- No. 7.** “Constraints to Growth in Russian Agriculture,” by Bruce Gardner and Eugenia Serova. January 2002. <http://www.basis.wisc.edu/live/basbrief07.pdf>
- No. 8.** “Innovating Institutions to Help Land Reform Beneficiaries,” by Mike Lyne and Michael Roth, with assistance from Malcolm Childress and Roman Mogilevsky. February 2002. <http://www.basis.wisc.edu/live/basbrief08.pdf>
- No. 9.** “Promoting Equitable Access to Water Resources,” by Bill Derman, Anne Ferguson, and Pauline Peters. February 2002. <http://www.basis.wisc.edu/live/basbrief09.pdf>
- No. 10.** “Helping Disadvantaged South Africans Access the Land Market: Past Performance and Future Policy,” by Mark Darroch and Mike Lyne. March 2002. <http://www.wisc.edu/lrc/live/basbrief10.pdf>
- No. 11.** “Land Redistribution in Namibia and Zimbabwe,” by Ben Fuller, George Eiseb, Lovemore Rugube, and Walter Chambati. August 2002. <http://www.wisc.edu/lrc/live/basbrief11.pdf>
- No. 12.** “Gender and Broadening Access to Land and Water in Southern Africa,” by Pauline E. Peters and Anne E. Ferguson, with input from Mark Darroch, Bill Derman, Ben Fuller, Francis Gonese, Michael Lyne, Wapu Mulwafu, Joel das Neves, Ragan Petrie, and Lovemore Rugube. August 2002. <http://www.wisc.edu/lrc/live/basbrief12.pdf>
- No. 13.** “The BASIS CRSP Program: An Overview,” by BASIS CRSP. October 2002. <http://www.basis.wisc.edu/live/basbrief13.pdf>
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widely available to a large audience of researchers and policymakers. The ongoing series of *BASIS Briefs* is an important tool for policymakers in forming policy in their country or region, as well as for those responsible for setting the overall tone of development policy—including USAID, the World Bank, the Food and Agriculture Organization, the United Nations, regional development banks, and other donors. Each BASIS project produced an initial *Brief* that summarized a particular research problem and ways the project will address it. *Briefs* in the coming years will continue to deliver findings, identify important policy implications, and suggest directions for further research or policy formulation both at the local and global level.

Another method by which BASIS communicates findings, especially to policymakers, is through outreach activities. Two targeted policy conferences were solicited by USAID and will be held in 2003.

The “**Workshop on Land Policy, Administration and Management in the English-speaking Caribbean,**” held in March, will help identify and develop effective land policies and investment programs for the region. Through a forum that allows them to share practical experiences, stakeholders will then use the workshop to seek practical ways to translate broadly agreed upon principles into feasible national policies that respond to specific problems in the region.

“**Paving the Way Forward: An International Conference on Best Practices in Rural Finance**” will be held in June to provide operational conclusions on the necessary policy environments and infrastructural supports, achievements of financial institution sustainability, and innovation in technologies for rural financial services. The conference will provide a forum to debate the latest concepts and current knowledge of rural financial

markets and will culminate in donor and practitioner guidelines for policy and development.

A rural finance review is particularly timely and relevant for USAID, which recognizes that rural areas are critical for sustained economic growth and social stability in developing and transitional economies. Recommendations generated by the BASIS conference will help shape USAID’s future agricultural strategy and programming guidance. In addition, the US Government has committed itself to halving world poverty by the year 2015. Reassessing USAID’s role in agriculture and rural finance could play a critical role in achieving this goal.

These two outreach activities are precursors to the comprehensive global *BASIS Policy Conferences* that will be held after the research projects have

completed their third year of work. Each policy conference will be a major, international forum bringing together the entire range of BASIS audiences. The conferences will provide opportunities for capturing commonalities and innovations among the projects and thus begin the process of synthesizing approaches to policy action.

The conferences will cut across regions and projects to draw out the

global policy implications of BASIS research. The BASIS Director, USAID representative, and principal investigators from each project will have joint ownership over the conferences, each of which will focus on one of the global constraints that structure the BASIS research agenda. Joint sponsorship for the events will be developed with key development organizations. The end result will be a book or a special issue of a general readership journal.

With a goal of rural prosperity for all, the BASIS research program consistently delivers findings to various key audiences who together can help make the goal a reality throughout many regions of the developing world.

BASIS CRSP Lessons Learned Policy Conferences

2004:

*“Combating Persistent Poverty in
Sub-Saharan Africa”*

2005:

“Property Rights for Productive Land Use”

2006:

*“Agricultural Policy Reform Sequences
for Transition Economies”*

Project Portfolio: Activities and Workplans

PROFILE

The BASIS CRSP research agenda targets three constraints that globally impede broadly based and sustainable growth. The carefully selected projects were designed not merely to understand the nature of the constraints but to deliver innovative policy solutions that will remove, relax, or sidestep them.

BASIS Phase II began in October 2001 with the five three-year projects listed below. Some of these projects continued or built upon research activities carried out under BASIS Phase I (1996-2001). Each

Phase II project focuses on a region or regions where the constraints have particular salience, yet each also seeks lessons and policy innovations that will inform efforts to overcome the constraints in other regions.

In 2002, three new projects were added to the BASIS portfolio (see next section). Building on the work of all its projects, BASIS CRSP will take findings and lessons directly to the international policymaking community through the *BASIS Lessons Learned Policy Conferences*.

<u>Global Constraint</u>	<u>BASIS CRSP Project</u>
1. Ineffective Agricultural Resource Use in Post-Reform Economies	“Input Market Constraints upon the Growth of Russian Agriculture”
	“Institutional Innovations to Improve Equity Sharing under Privatization and Farm Restructuring”
2. Unsustainable Use of Environmentally Sensitive Resources	“Institutional Dimensions of Water Policy Reform in Southern Africa”
	“Rural Markets, Natural Capital, and Dynamic Poverty Traps in East Africa”
3. Poverty and Food Insecurity Traps	“Assets, Cycles, and Livelihoods”

Acronyms this section

ADD	Agricultural Development Districts	IOF	Investor-owned Firm
AEASA	Annual Conference of the Agricultural Economics Association of South Africa	IUCN	Union for the Conservation of Nature
APC	Agricultural Production Cooperative	IWMI	International Institute of Water Management
ARARI	Amhara Regional Agricultural Research Institute	KAFC	Kyrgyz Agricultural Finance Corporation
ASB	Alternatives to Slash and Burn	KARI	Kenya Agricultural Research Institute
BASIS	Broadening Access and Strengthening Input Market Systems	KRDS	Kenya Rural Development Strategy
CAS	Production Cooperatives	LDI	Landscapes Development Initiative
CASE	Center for Social and Economic Research	LEAP	Legal Entity Assessment Project
CASS	Centre for Applied Social Sciences	LRAD	Land Redistribution for Agricultural Development
CCS	Credit and Service Cooperatives	LRAD	Land Reform for Agricultural Development
CGIAR	Consultative Group on International Agricultural Research	MidNET	Midlands Rural Development Network
CLASSES	Crop, Livestock and Soils in Smallholder Economic Systems	MOU	Memorandum of Understanding
CPA	Common Property Association	NACDA	National Cooperative Development Agency
CRSP	Collaborative Research Support Program	NIE	New Institutional Economics
DCHA	Bureau of Disaster, Conflict, and Humanitarian Assistance	NSF	National Science Foundation
DDC	Divisional Development Council	OFDA	Office of Foreign Disaster Assistance
DFID	Department for International Development	OSSREA	Organization for Social Science Research in Eastern and Southern Africa
DLA	Department of Land Affairs	PARIMA	Pastoral Risk Management Project, Global Livestock CRSP
FFW	Food-for-Work	PLAAS	Programme of Land and Agrarian Studies
FHDC	Faculty Higher Degrees Committee	PRSP	Poverty Reduction Strategy Paper
FWES	Farm Worker Equity Schemes	PSG	Production Solidarity Group
GIS	Geographic Information System	RDLC	Research and Development Liaison Committee
GoM	Government of Malawi	RDP	Rural Development Program
GPS	Global Positioning System	SAGA	Strategies and Analyses for Growth with Access
IAD	Instituto Agrario Dominicano	SLAG	Settlement/Land Acquisition Grant
IASCP	International Association for the Study of Common Property	SPP	Surplus People's Project
ICRAF	International Centre for Research in Agroforestry	SPSS	Statistical Package for Social Sciences
IDR	Institute for Development Research	UoN	University of Nairobi
IDRC	International Development Research Centre	WARFSA	Water Research Fund for Southern Africa
IFPRI	International Food Policy Research Institute	WFP	World Food Programme
INR	Institute of Natural Resources	WUA	Water User Association
		ZINWA	Zimbabwe National Water Authority

INPUT MARKET CONSTRAINTS UPON THE GROWTH OF RUSSIAN AGRICULTURE:

Land, Labor, Capital, and other Inputs
under Alternative Economic Reform Policies

Global Constraint 1: Ineffective Agricultural Resources Use in Post-Reform Economies



Workers at a former collective farm
(Photo by Malcolm Childress)

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Collaborating Institutions and Researchers

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Institute of World Economy, Russia: Dmitri Rylko

Hebrew University, Israel: Zvi Lerman

Institute for Reform and the Informal Sector, and Department of Agricultural and Resource Economics, University of Maryland, USA: Leonid Polishchuk, Howard Leathers

Georgia Southern University, USA: Greg Brock

Economic Research Service, US Department of Agriculture, USA: Bill Liefert, Stefan Osborne

Rural Development Institute, USA: Leonard Rolfes

Iowa State University, USA: Bob Jolly

University of Minnesota, USA: Glenn Pederson

<http://www.basis.wisc.edu/russia.html>

PROJECT PROFILE

Despite initial hopes and promise in the early 1990s, reforms of the former Soviet economy in agriculture remain disappointing. Many former collective farms remain in business despite financial losses to the point that they would be bankrupt if Western commercial rules applied. The Russian legislature passed a landownership law in 2002, but it remains in doubt whether it will appreciably improve long-term incentives for placing farmland in the hands of people best able to use it efficiently.

Nonetheless, significant changes have occurred, even if limited to particular regions. Output increases have been noted on household subsidiary plots, which have been enlarged and play an important role, especially where former collective farms are weakest. New arrangements are springing up in which input suppliers or other businesses related to agriculture are establishing vertically integrated or other contractual arrangements with agricultural producers. These arrangements are managing to supply much-needed fertilizer, chemical, and energy inputs in ways more promising than the barter arrangements that characterized the dealings of many former collective farms and the ad hoc and unpriced ways in which owner-employees of these farms often acquire inputs for their own farming enterprises on

private plots. Even without fully developed landownership rights, it appears that rental transactions under which new operators may acquire the use of increased acreage are beginning to be economically important.

There have been few systematic research efforts to survey, analyze, and make recommendations on the post-1991 economic development of Russian agriculture. Reviews and studies undertaken to date indicate how difficult it is to draw conclusions about the extent, effectiveness, and consequences of even quite well documented and widely implemented reforms. For example, there remains substantial disagreement about how far Russia has gone in establishing a functioning market economy in retail food commodities. With respect to factor markets, the informational and statistical base is less well developed. Indeed much of the anecdotal evidence pertains to barter transactions that suggest a lack of functioning factor markets.

BASIS research will attempt to quantify the extent to which factor market constraints impair the ability of Russian agriculture to function efficiently and profitably, establish which constraints are most damaging in both the short and long run, and provide the analytical knowledge needed to formulate policies to remedy the constraints.



Support

Core funding. Matching provided by the Rural Development Institute and University of Maryland. Supplemental provided funding by the US Department of Agriculture.

Outputs

Gardner, Bruce, and Eugenia Serova. 2002.

Constraints to Growth in Russian Agriculture.

BASIS Brief 7. Madison: BASIS Management Entity, Department of Agricultural and Applied Economics, University of Wisconsin. Online at <http://www.basis.wisc.edu/live/basbrief07.pdf>.

Factor Markets in Russia's Agri-food Sector:

Frameworks of Further Analysis. 2002.

Proceedings from Golitsyno II Conference, June 2001, Golitsyno, Russia.

I. ACTIVITIES 2001-02

A. Accomplishments

The year's work was devoted primarily to preparing the major survey of Russian farms that is the heart of the project and developing the analytical methods that will be used to address the issues of factor market constraints on which the survey along with secondary data will provide the raw material for quantitative analysis.

The team engaged in considerable debate about aspects of the survey, mainly how to get consistent and accurate information from the managers of former collective farms and individual households on those farms, the extent of product and factor quantity detail, and the handling of commercially sensitive questions. Zvi Lerman, Bob Jolly, and Greg Brock have extensive survey experience in Russia and elsewhere in the former Soviet Union, and provided helpful advice. Nonetheless, they were not all in agreement with one another or with the Russian colleagues who are most experienced in survey work there: Eugenia Serova and V. Y. Uzun. A pilot survey was carried out in the Moscow region in July-August 2002 to test for respondents' understanding, cooperation, and sensitivities to particular questions, as well as to test the overall length of the questionnaire. This resulted in only minor modifications to the questions used in the full-scale survey begun October 2002.

The Russian team members, in preparation for the survey and subsequent analytical work, undertook a literature review and dialogue with US counterparts, but this did not generate finished manuscripts. Tentative findings and hypotheses, following up on the foundation created by papers and discussion at the initial Golitsyno Conference, July 2001, are as follows.

- There is a sharp distinction in the large former collective farms between those that have become insolvent and those that have remained financially viable during the transition period. Uzun's initial review estimates roughly 80% of the large farms as of 2000 were in the insolvent category, with 20% remaining viable. A hypothesis that is suggested by preliminary investigation is that a key determinant of viability is the capability of a large farm's managers to establish a supportive but yet commercially correct (not exploitative on either side) relationship with the household operations on the farm.
- The data available on private family farms (newly created in the last ten years and much smaller than former collective farms) indicate that they are substantially more efficient in terms of the measure most used in Russian statistics: output per hectare. In terms of total factor productivity their performance is less clear. New private farms have widespread problems of unprofitability just as large farms do (but with less insolvency because their accumulation of debt is less). The hypothesis has been advanced that these new private farms cannot survive over the long term because they cannot reap the economies of scale available to large farms. This hypothesis has not been systematically confronted with farm-level data.
- Some Russian farms have achieved profitability through joint ventures or contractual arrangements with nonfarm businesses, notably energy companies (Gasprom, Lukoil), agricultural machinery manufacturers, or food wholesalers and retailers. An important issue for the future of these enterprises is whether their success is due to inherent gains from improved value-added marketing or risk management mechanisms, or whether they arise only from factor market problems (lack of credit, input supply constraints, labor surpluses). If the latter, these arrangements may turn out to be only a second-best remedy that will be unattractive when factor market functioning is improved. The data available so far do not enable a conclusion about which view is most accurate.
- Our review of land leasing and other transactions indicates a remarkable variety of approaches have been tried in various regions and circumstances. All of them fall short of Western style land markets, particularly in severe limitations of ownership rights. An important unresolved question is how much difference this makes in farm efficiency and in incentives to undertake fixed investment on farms.
- The informal evidence available indicates a bewildering mix of apparent surpluses and

shortages in Russia's input markets. Labor is generally in surplus on farms, owing to a lack of off-farm opportunities and the continuing responsibilities of former collective farms for worker welfare; yet some skills are said to be in short supply and hindering agricultural productivity. Similarly, fertilizer is said to be unattainable by smaller, independent farms while some large farms have excess supplies that are used wastefully. Our farm-level data should help in determining the prevalence of and inefficiency caused by these disequilibria.

B. Policy Involvement

While we did not have substantive research findings as a basis for policy recommendations, Russian team members, using ideas from Golitsyno II and other discussions, participated in several national and regional policy matters.

farm labor surplus by development of nonagricultural jobs in rural areas.

At the national level, Serova briefed Vice Premier A. Goredeev in September 2002 on recommendations for Russian agri-food policy, with particular emphasis on fertilizer supply and land leasing. With respect to fertilizer, she argued against the efficacy of fertilizer subsidies following the analysis presented in a paper by Serova, Karlova, and Petrichenko: "The Market for Purchased Inputs." (The paper appears in the Golitsyno Proceedings, 2002.) The basic point is that, given existing constraints, the elasticity of fertilizer supply is very low, so that a subsidy accrues very largely to the fertilizer supply industry without substantially increasing the use of fertilizer or farmers' returns.

Serova also prepared pieces for the agrarian program of the movement called "Right Wing



Golitsyno II Conference. Collaborative discussions helped determine the focus of a major survey of Russian farms that began October 2002. Analysis of data gathered will form well-grounded evidence about potential consequences of different policy options at both local and national levels.

(Photo by Kurt Brown.)

Eugenia Serova provided recommendations for a land leasing program in Perm in 2001-02, a program that has subsequently been implemented. She also presented recommendations on regional agricultural input market and regulatory policies in the Chuvashia, Vologda, and Chelyabinsk regions in May 2002. In October the government in Vologda undertook the creation of a rural development program focusing on remedying the

Parties" (a label having somewhat different connotations in the Russian context than in the US). These involved principles of appropriate regulation of land, capital, and purchased input markets in Russian agriculture, including rural development policies focusing on labor markets.

V.Y. Uzun and Natalya Shaigaida have been involved with developing programs for rural labor in the St. Petersburg and Ivanovo regions.

C. Outline of Activities

October-December 2001

- Analyses of literature covering topics similar and close to the scope of the study
- Review of analytic techniques for the analyses of input markets
- Coordination of researchers' activity plans

January-March 2002

- Determination of geographic focus of the field study and case studies
- Consolidation of thematic research plans to figure out the core of the common survey to be carried out
- Preliminary design of 1st survey questionnaire draft
- Preliminary methodology of respondents' choice and sample formation was discussed and agreed upon among domestic researchers
- Round 1 of survey questions discussion with domestic and overseas researchers
- 2nd survey questionnaire draft prepared

April-June 2002

- Round 2 of survey questions discussion with domestic and overseas researchers
- 3rd survey questionnaire draft prepared
- Round 3 of survey questions discussion with domestic and overseas researchers

- Preliminary determination of functional forms for the production frontiers analyses, choice of major variables and methodology of their determination
- Consultations with overseas researchers on the functional forms and variables
- Consultations with overseas researchers on the design of survey, related sampling and possible timing
- Finalization of respondents' choice methodology and sample formation
- Finalization of survey questionnaire for pilot study

July-August 2002

- Pilot study of questionnaire
- Analyses of pilot study results
- Modification of survey questionnaire
- Preparation of final version of questionnaire
- Case studies protocols specification, regional focus coordination with survey efforts
- Literature reviews
- Detailed planning of survey; choice and training of interviewers
- Detailed planning of case studies; choice and training of interviewers

September 2002

- Survey data collection in the field

II. WORKPLAN 2002-03

A. Research plan

In this second year of the project we will continue to develop findings and analysis, with a view to generating policy implications. The first year's work in pursuit of primary data has been mainly devoted to preparation for a broad-based economic survey, with a pilot run of the questionnaire and a first full-scale survey in September 2002. We also developed material for case studies, and acquired secondary data from both national and selected regional government agencies.

1. Data

At the beginning of the second year, in October 2002, we plan to finish our major initial survey. Later in the year we will acquire additional data from Goskomstat (the Russian federal statistical agency) that we can compare to our survey findings. Because the Goskomstat data are available for earlier years, we hope to be able to make reasonable judgments about the extent to which particular findings about the situation in 2002 are attributable to market and other conditions peculiar to that year.

2. Analysis

The analytical work will assess the consequences of observed differences across farms, regions, and over time in product prices, input availability, and other constraints discussed earlier, upon output and productivity of farming. For this work we will use several well established approaches from production economics, both parametric production function estimation and nonparametric data envelopment analysis, utilizing the experience and expertise of Bill Liefert's team at USDA's Economic Research Service. Much of the work during the winter and spring of 2002 with the US collaborators was involved with designing survey questions that would lend themselves well to subsequent analytical work (notably measuring productivity and shadow prices of constrained inputs—land, labor, and material inputs for which

markets are not fully operational), while at the same time are answerable by respondents in the Russian farm context. It is a particular problem that enterprises have both a collective and an individual aspect, in which the pooled efforts of many people are intertwined with individual enterprises within that collective. One would like to make judgments about the efficiency, income generation, and salience of factor market constraints for both types of economic activity, but sorting out the data for this purpose is difficult. We were helped immensely in this by the prior experience of Zvi Lerman, Greg Brock, and Bob Jolly in agricultural surveys in the former Soviet Union.

We will then proceed to the more aggregated level, using factor supply and demand models widely applied in the literature. We will examine among other things whether the outflow of agricultural labor by region is correlated with the difference between the wages paid to agricultural and nonagricultural workers.

A key empirical challenge will be measuring the *real wage* of agricultural workers, which can include monetary payments, in-kind payment of agricultural output, and the social-welfare services collective farms provide (health, education, housing, and entertainment). We will also test the hypothesis that because of continued surplus labor on collective farms, the farms pay their workers a *real wage* higher than the value of their marginal product. We will then determine how far any gap between wages and the value of marginal product of labor goes to explain the current unprofitability widely reported for former collective farms, as well as measured efficiency and other farm performance indicators. On a related matter we will attempt to determine whether that part of the real wage consisting of social-welfare services is the dominant element in the gap, and therefore the dominant explanatory variable with respect to the identified performance indicators. This will test the commonly made assertion that collective farms

The project's major survey of farms is generating primary data that will help sharpen understanding about constraints to growth in Russian agriculture.

suffer strongly from the burden of providing for their workers' social welfare needs.

We will empirically estimate the connections between farm productivity, control over land, labor market conditions, and other variables on measures of economic well-being of rural people. For example, to what extent have off-farm employment opportunities or on-farm non-agricultural activities on former collective farms enabled people to improve or maintain their standard of living even when agriculture remains stagnant and unprofitable?

More specifically, various members of our team will undertake elements of the above tasks as they apply to particular constraints and problems in factor markets, as follows.

With respect to land markets, Natalya Shaigaida of

collective farms and private farms. We are particularly interested in contrasting labor use on large farms that have gone through significant restructuring with those that have not. The data to be analyzed are not only overall workers and time committed to crop and livestock activities, but also the division of work effort between whole-farm activities and those on private household plots. Also, separately from the land market study above, we will examine the consequences of differing allocations of land between whole-farm and household enterprises.

Problems in the markets for fuels and energy, fertilizers, seeds, and purchased feeds will be investigated by Serova in Russia, with the collaboration of Liefert and Bruce Gardner. We will investigate the demand for these inputs and attempt

What is the real wage of agricultural workers? Does surplus labor on farms result in a higher real wage? BASIS researchers are investigating these and other questions about the labor market on Russian farms. By combining this effort with a thorough study of land, input, and financial markets in Russia's agricultural sector, BASIS hopes to explain the reported unprofitability of former collective farms.

the All-Russia Institute of Agrarian Problems will review land leasing contracts, both short- and long-term, in the study areas but also for a broader range of regions of Russia. She will assess the means and timing of payments, rights and responsibilities conveyed, and accompanying credit or other promissory provisions. Her main US counterpart will be Leonard Rolfes of the Rural Development Institute, Seattle, Washington, who will provide relevant comparisons of land contracting elsewhere in the world.

On the labor market work, we have a complication in that Sergei Kiselev of Moscow State University, who was going to carry out the main research tasks from the Russian side, has withdrawn from the BASIS project. Eugenia Serova will pick up this work and integrate it with the research on purchased inputs. From our survey data we will obtain information on labor use on both former

to quantify constraints that exist on the supply side. We will use factor quantities to estimate, via empirically estimated production functions, the marginal products of these inputs, and through comparison with input price and supply data attempt to assess efficiency losses attributable to shortages or, possibly, surpluses of these inputs (most likely for labor, which, in addition to the analysis outlined in the preceding paragraph, we will also include in the production function and factor demand estimation).

Farm finance and capital market constraints and policy will be analyzed by Olga Yastrebova of Moscow State University, with the collaboration of Glenn Pederson of the University of Minnesota and Greg Brock of Georgia Southern University. This work will proceed on two fronts. First, we will use the survey data to quantify the sources and terms associated with credit that has been advanced to the

farm operations sampled, and to assess the extent and importance of credit rationing. Second, we will use oblast- and rayon-level official data to document financial flows to and from agricultural enterprises in the areas surveyed, including credits, coverage of arrears in payments for taxes and inputs, and taxes actually paid.

Overall issues of farm enterprise management, including the division of output produced and inputs allocated between large former collective farm enterprises and individual households living on those farms, will be addressed by V. Uzun of the All-Russia Institute of Agrarian Problems, in collaboration with Zvi Lerman of the Hebrew University, Israel. They will carry out analyses similar to those described for whole farms, but attempt to identify components of output and input use attributable to smaller production units within the farms, and the efficiency gains or losses that result from alternative ways of organizing input use and production decisions.

The operation and financial arrangement of newly established integrated farm/marketing enterprises is the subject of case studies being undertaken by Dmitri Rylko of the Institute of World Economy, Moscow, with the advice and assistance of Bob Jolly of Iowa State University. These case studies will be descriptive to a larger extent than the preceding components of the research plan. But these enterprises are also collecting data that will enable us to treat these new enterprises comparably with other former collective and private farms (as added observations in the data set for at least some of the econometric work), and so to obtain information on the efficiency gains attributable to the capabilities of these new arrangements to avoid input market constraints other farms face.

3. Policy Implications

Our general thrust will be not to make policy recommendations directly, but to make as clear and convincing statements as possible about the consequences of policy options. Which constraints in factor markets is it essential to remedy if productivity or incomes are to grow, and which constraints can be overcome by indirect means? (For example, can contracting with agroprocessing firms provide a viable way around the limitations of credit that result from the lack of private property in land for use as loan collateral?) The idea is to

provide data-based evidence on what is at stake in productivity, investment in agriculture, and rural well-being in various reform or anti-reform policies being proposed.

B. Local capacity building and impact on policy

We plan to quantify the gains in productivity, output growth, and farm income that could be attained through improved input market performance. The main policy consequence of identifying the least substitutable inputs is that priority should be given to tackling deficiencies and impediments in markets for these inputs. Findings on regional input market integration will allow estimation of welfare losses to constraints on factor movement and trade, and so to quantify the benefits that can be obtained through removal of these barriers.

We are planning to convene a conference at which Russian policymakers, researchers, and other interested parties would have an opportunity to review our survey research and test-case results during the late winter or spring, tentatively March or April 2003. As descriptive and analytical results emerge, working papers and BASIS Briefs will be widely circulated to interested parties and posted on a website at participating Russian and US institutions (in Russian and English as appropriate).

In addition to published materials, we will conduct public events and government briefings as the opportunities present themselves. Our Russian Principal Investigator is well connected with policymakers in both the legislative and executive branches of government. Our 2003 conference will be addressed to social science professionals in Russia (both Russians and foreigners working or visiting Russia) as well as policymakers. The idea would be to keep the research community abreast of our ideas and progress and to obtain ongoing feedback on research and policy ideas.

While the majority of the work time will be contributed by Russians in Russia, the US collaborators will in addition to the 2003 conference make special-purpose trips to Russia, tentatively Zvi Lerman, Greg Brock, and Bill Liefert/Stefan Osborne. Most of our intellectual and practical interchanges, however, will continue to be through email.

C. Schedule of Activities

October-December 2002

- Processing survey data
- Data collection for case studies
- Literature review to be prepared in draft form
- Choice of methods of analysis of data collected
- Computerization of collected data
- Preparation and editing of data for analyses
- Preliminary analyses of data
- Preliminary determination of needed secondary data

January-March 2003

- Analyses of data from surveys and case studies
- Preparation of preliminary results from the field studies for its presentation at the conference
- Final determination of required secondary data
- Purchase of secondary data
- Preparation of conference aimed to present the results of fieldwork and to discuss them with a wide range of specialists (analysts and policymakers), and plan the next round of work
- Preparation of report on survey and case studies to be presented on the conference
- Revision of literature review
- Preliminary analyses of secondary data and its connections with the field data collected
- Conference held

April-June 2003

- Follow up of discussion initiated by the conference
- Communication with conference participants, collection of comments, criticisms and thoughts

- Revision of survey and case study analyses on the basis of the conference results
- Analyses of the revised field data
- Analyses of secondary data
- Generalized field and secondary data analyses
- Finalization of literature review

July-September 2003

- Reports on land and labor utilization in agriculture, using official and other secondary data
- Analyses of factor markets and agriculture performance
- Analysis of farm productivity changes on rural well-being
- Discussion of the obtained results among domestic and overseas researchers
- Drawing out the major results of analyses and their major implications for policymakers

Outputs

- Literature review of Russian and other literature on structure and innovation in agriculture
- Case studies on new contracting forms
- Survey of farm input availability on various types of farms
- Reports on land and labor utilization in agriculture, using official and other secondary data
- Analyses of factor markets and agriculture performance
- Analysis of farm productivity changes on rural wellbeing
- Conference to review case and survey results

III. RESPONSE TO BOARD OF DIRECTORS

The following represents points raised by the BASIS Board of Directors and our responses. The project's workplan took into account the Board's points.

"The Board was concerned about the enormity of the task as it is proposed, particularly in making the link between the research, which takes place at the case study level, and policy, at the macro-level."

The Board also asked for an addendum *"presenting the policy implications more clearly within the Russian context, demonstrating the engagement of policymakers at the community, regional and national level, which, in turn, further prioritizes the research agenda."*

We are aware of this problem of linking the research to policy issues, among others at the policy implementation stage. There are two chief types of policy at issue. The first is fully macro-level policy, such as whether to permit buying and selling of land, and the rules for doing so.

Our goal is not to attempt explicit recommendations on such issues, which as the Board suggests may be too politically treacherous for us to attempt to address in any case. Rather the idea is to provide estimates of what it is costing Russian agriculture, in the areas we survey, to have the land tenure situation that exists. (And indeed it may be costing less than some of us had expected—but this is a matter of debate within our team so far.) In general our approach to policy is to assess the cost of current arrangements compared to alternatives, which are mainly competitive market norms.

The second type of policy issue is more localized and specific, namely what might be done to improve access to input markets and farm-level productivity at the particular places we survey. Such conclusions may come straightforwardly from our analysis and can be couched in ways that are not so easily seen as having dangerous political consequences, perhaps. For example, we hope to be

able to point to the marginal product of fertilizer as compared to the price paid (or shadow prices when exchanges in kind or quantitative constraints rule). Similarly for labor. The link from our work to policy should be more readily accomplished and less politically treacherous in several such areas, and we will try to focus here first.

With respect to engagement of policymakers, our principal systematic approach to this occurred at the conference in Golitsyno, a suburb of Moscow, which kicked off preparation of this project in July 2001, before the project formally began (and not discussed in our work plan). We had many relevant policymakers from the Agriculture Ministry, other Ministries, the Duma, the state-connected agricultural research institutes, and from some regions. Some of them most vigorously laid out what they thought we should be doing in this project (and interestingly no one, at least that we know of, argued that we ought not to be doing research on these matters – all agree that Russia has serious problems in agriculture and that they are problems that require policy remedies not yet in place).

With respect to ongoing interaction with policymakers, we are fortunate that our Russian P.I., Eugenia Serova, is perhaps the single non-government Russian agricultural economist most in touch with Russian policymakers at the national level. She is constantly being consulted by officials in the Ministries and by members of the Duma. Also, one of our Russian researchers, Sergei Kiselev, has been in and out of Russian agricultural policy, most recently as chief negotiator for Russia's dealings in agriculture with the WTO. Unfortunately, his commitments mean he is dropping out of our project beginning in October 2003; nonetheless he will continue to be in touch with our team and to be a valuable conduit for our learning what policy issues are most usefully addressed, and in getting our findings noticed in policy circles.

INSTITUTIONAL INNOVATIONS TO IMPROVE EQUITY SHARING UNDER PRIVATIZATION AND FARM RESTRUCTURING:

**Helping Land Reform Beneficiaries Gain Access to Land and
Financial Resources in Central Asia and Southern Africa**

Global Constraint 1: *Ineffective Agricultural Resource Use in Post-Reform Economies*



**The equity-sharing game
(Photo by Michael Roth)**

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Lauren Shinns, Bernadine Gray

Hamman, Schumann and Associates, South Africa: Johann Hamman

Institute of Natural Resources, South Africa: Jenny Mander

LIMA Rural Development Foundation, South Africa: Peter Greene

Land Tenure Center, University of Wisconsin–Madison, USA: Malcolm Childress,
Kelley DeCournier, Susana Lastarria-Cornhiel

Rural Development Institute, USA: Renee Giovarelli

PROJECT PROFILE

Central Asia and southern Africa are undergoing political and economic transition, the former from state and collective farm ownership to private groups and individuals, and the latter to redress the apartheid and colonial heritage of a racially biased and unequal landownership. Despite different histories and policy contexts, countries in these regions share a common problem: poor people in rural areas are unable to make productive use of their land resources. This is most acute where it has not been feasible to privatize land, water, infrastructure or movable assets to individuals. Many beneficiaries of land reform in these regions find themselves co-owning resources, often in diverse groups that lack decisive management and the ability to encourage investment.

Group ownership is emerging as an important model in South Africa and Kyrgyzstan.

Organizational inefficiency, free- and forced-riding, weak legal frameworks and moral hazard constrain the willingness and ability of groups to finance investments. Land reform beneficiaries need help determining the type of legal entity to choose, organizational structure to adopt, and strategies to finance investment and acquire business training.

While group ownership brings forth images of the dismal performance of farming cooperatives and collectives, particularly in Central America and the former Soviet Union, recent literature on “New-Generation Cooperatives” helps identify important institutional and organizational reasons for the poor performance of joint ventures that operate like traditional cooperatives. A notable exception to the general failure of group land reform efforts is the success of some farm worker equity schemes in South Africa’s Western Cape province. Many of these schemes have redistributed commercial farmland and wealth, and some are improving agricultural performance.

An equity scheme is a private company in which financial equity is owned by workers, managers and other investors in the form of tradable shares that define their individual rights to vote for directors and to benefit from the profits and capital gains generated by the company. This is quite distinct from a cooperative or collective farming enterprise where voting and benefit rights are egalitarian and non-marketable, resulting in free- and forced-rider problems that undermine incentives to invest time and money in the enterprise. Many equity schemes are financed by commercial banks, attesting to their creditworthiness.

In order to identify and resolve the underlying causes of management and financial problems associated with group ownership in the Kyrgyz Republic and South Africa, BASIS researchers will conduct in-depth case studies of approximately 10 transformed enterprises in each country. These case studies will yield a set of “best institutional practices.” In brief, this project endeavors to:

- identify institutional and organizational practices that constrain the success of group enterprises created by privatization and land reform programs, depriving the poor of current income, capital gains and new livelihood opportunities,
- determine best institutional practices that broaden and deepen beneficiaries’ access to resources and encourage their productive use,
- apply these best practices to the design or redesign of one or two equity-sharing enterprises that will be facilitated in each country, and,
- assess how these organizational and institutional innovations can improve project performance, where performance is measured in terms of financial health, environmental sustainability, and the empowerment of beneficiaries, especially women.



Support

Core funding. Matching provided by the Center for Social and Economic Research, Institute of Natural Resources, Rural Development Institute, and

University of Wisconsin. Add-ons anticipated from USAID/Pretoria and USAID/Bishkek.

Outputs

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- _____. 2002. "Policy Questions for a Second Decade of Rural Change in Central/Eastern Europe and the Former Soviet Union." *Journal of International Development* 14: 979-985.
- Childress, M., R. Mogilevsky, A. Kalpakova, and K. Kadyrov. 2002. *Resources and Profitability of Agricultural Enterprises in Kyrgyzstan*. Submitted to policymakers, NGOs and international institutions in the Kyrgyz Republic.
- Database of all commercial farmland acquired by previously disadvantaged people in KwaZulu-Natal 1997-2001, broken down by mode of transfer, method of financing, and the status of the new entrants, etc.
- Database containing 450 variables measuring characteristics of nine case studies of equity-share projects in Western Cape Province, South Africa.
- Database for census survey of 38 previously disadvantaged households at Sherwood Farm, containing household characteristics and poverty indicators.
- Database for the Survey of Agricultural Enterprises in Kyrgyz Republic containing 463 observations and over 1000 variables.
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I. ACTIVITIES 2001-02

A. Kyrgyzstan

1. Investigation of Investment Sources

Researchers Childress, Erdolatov, and Mogilevsky identified and interviewed Kyrgyz Agricultural Finance Corporation (KAFC), a number of agribusiness and financial companies, internationally funded micro-credit projects and NGOs to identify sources of short-term financing and long-term investment for restructured agricultural enterprises. Their findings were submitted to a journal. The answer suggested by the evidence is that donor capital and new credit institutions cannot fill the gap between demand for investment capital and its supply. Four background reports were prepared by Meergul Bobukeeva that analyze the legal basis for, and types of contractual and corporate models used in, enterprise restructuring.

2. Case Studies of Equity Sharing Enterprises

During April-September 2002, researchers selected and interviewed six agricultural enterprises for further intensive study. Descriptive data were collected on each enterprise's organizational structure, shareholding arrangements, management-worker relations, production and marketing, input costs, earnings and corporate governance.

2.1. *Koopromservice Ltd ("PAKS") Cholpon Ata, Issyk-Kul Oblast*

Erdolatov held multiple interviews with PAKS, once jointly with Roth, Lyne and Childress and once jointly with Giovarelli in July 2002. PAKS is a 10-year old fruit juice processing enterprise incorporated as a limited liability company. The cooperative was launched with equity contributions from eight members. Now four shareholders remain, with one primary partner holding 70 percent of the financial equity and the other three each holding 10 percent. Financial capital is regarded as the most binding constraint. PAKS managed to repay its loan for working capital in 2001/2 but was in arrears on a loan taken to finance new buildings and equipment. As a result, KAFC would not provide the additional finance needed to

finish rehabilitation of a second production line (press and bottling). Nevertheless, PAKS was preparing an application for a seasonal loan from KAFC to finance working capital in 2002/3. Retained earnings and advance payments made by customers (primarily yogurt and ice-cream manufacturers in Bishkek) are the only other sources of liquidity. The notion of raising additional capital by taking on more equity investors was rejected—largely for reasons of distrust.



PAKS juice production building. One of six equity sharing enterprises studied, PAKS has four shareholders and faces difficulty obtaining credit to finance building repair and equipment. (Photo by Mike Lyne.)

2.2. *Ecoproduct Ltd, Tyup Rayon, Issyk-Kul Oblast*

Erdolatov interviewed Ecoproduct equity shareholders and managers on three occasions in May-August 2002, and was joined by Childress, Roth and Lyne on one occasion in July 2002. Ecoproduct produces fruit juices and fruit “wines” (a blend of fruit juice and alcohol). Ecoproduct is struggling to finance operating and capital expenditure. The company has excess tank capacity because it lacks the liquidity needed to purchase bottles for its final product. Credit cannot be accessed from formal lenders because the owners purchased a business that was, and still is, indebted

to the State. Annual license fees and excise duties that must be paid to produce and sell alcohol drain liquidity precisely when it is most needed at the beginning of each season. As was the case with PAKS, the notion of raising additional capital by taking on more equity investors was rejected for reasons of distrust.

2.3. Kalinina Association of Peasant Farms, Issyk-Kul Rayon, Issyk-Kul Oblast

Erdolatov interviewed managers and members on three occasions in May-August 2002, once jointly with Roth, Lyne and Childress and once jointly with Giovarelli. Kalinina is comprised of 200 member households, each of which is a equity shareholder of pooled land and assets. Kalinina produces wheat and barley seed, potatoes, buckwheat and oilseed crops, raises livestock (including sheep, cattle, pigs and horses), makes hay, processes butter and vegetable oil, mills grain and provides machinery services to small owner-operators. Seed production usually accounts for the greatest share of farm profit. Privatization left Kalinina technically insolvent, with debt obligations to the State exceeding its own assets. For these and other reasons, Kalinina is not creditworthy and labors under a liquidity crisis. To make matters worse, it had been unable to recover 1.5 million soms owed by private farmers who had purchased seed from Kalinina on credit. BASIS researchers will hold further consultations with Kalinina about restructuring opportunities.

2.4. "Tameki" Scientific Agricultural Cooperative, Uzgen Rayon, Osh Oblast

Erdolatov interviewed managers on four occasions in May-August 2002, once jointly with Childress and Giovarelli. Tameki is a tobacco, seed growing and vegetable growing cooperative which has kept operating seamlessly since Soviet times when it was an experimental research station directed and funded from Moscow. In 1995 it was reorganized as a cooperative. The cooperative has 10,000 workers, of which 1,700 are members. About 250 households, however, left in 2002 to work by themselves. The central equity-sharing issue facing the cooperative is that it has not yet distributed property shares to members, although they have inventoried and evaluated all the assets. This will probably result in the restructuring of the enterprise

into several new enterprises. The cooperative plans to begin this process October-December 2002.

2.5. Peasant Farm Zhibek-Zholu. Aravan Rayon, Osh Oblast

Erdolatov visited the enterprise three times, once jointly with Childress and Giovarelli in July 2002 and held several telephone interviews. Organized on the base of an ex-State farm in 1994, Zhibek-Zholu is a single-family operation that produces crops on 2.8 hectares of cultivable land and organizes cotton purchases from approximately 1000 small producers. The farm leader is in charge of the collection of cotton and its distribution after cleaning. Zhibek-Zholu has taken over (with four other partners) the scales and storage infrastructure of the former state farm. BASIS researchers facilitated contacts with the USAID-financed "Small and Medium Business Project" in Osh for discussions of possible diversification by the informal group of suppliers.

2.6. Water User Association "Abshir Tani" Nookat Rayon, Osh Oblast

Erdolatov made three site visits to Abshir Tani, once jointly with Childress and Giovarelli. This Water User Association (WUA) consists of 700 family farmers and one large state-owned farm as equity shareholders. It began full activities in 2001. Abshir Tani receives water from the Rayon Water Management Department and distributes it to the member farmers in the area. The first goal of the WUA is to rehabilitate the internal irrigation system, but revenue of the WUA is just enough to cover payment for water from the Rayon Department but not to finance capital investment on for rehabilitation. BASIS researchers facilitated contact with the World Bank-financed "On-Farm Irrigation Project," which has a capital fund for internal rehabilitation.

* * * * *

These case studies confirmed that there are indeed many similarities between enterprise privatization in the Kyrgyz Republic and land reform in South Africa, both in terms of problems experienced by beneficiaries in making use of productive assets, and in solutions being tested. South Africa is further along in the process of restructuring and has adopted a broader mix of policy instruments to aid in the restructuring. In July 2002, Mike Lyne from

South Africa visited Kyrgyzstan to review the Kyrgyz situation. His visit was instrumental in confirming his and the group's thinking on synergies between the two regions, a situation that researchers hope to continue in future years by the visit of Kyrgyz researchers and policymakers to South Africa.

While the case study research was informative, it nonetheless revealed substantial constraints to the emergence of growth in current restructurings. The policy environment in Kyrgyzstan is extremely disabling for economic growth, and in most situations the enterprises visited were struggling greatly to make ends meet.

Renee Giovarelli visited all but one of the case study enterprises in Issyk-Kul and Osh and interviewed women members about their participation. She found that while women's legal rights are usually equal to those of men, their actual participation as shareholder members is constrained. They participate less in governance, often are uninformed about decisions, and frequently have different concerns that do not receive sufficient attention. Her notes and conclusions are being included in the case study documentation.

3. Survey of Agricultural Enterprises

In 1999, BASIS supported the implementation of the First Performance Survey of Agricultural Enterprises by the Center for Land and Agrarian Reform. Statistical data were collected from 468 sampled agricultural enterprises on various aspects of their ownership structure, governance, land assets, land use, livestock holdings, access to financial resources, assets and liabilities, input availability and costs, yield and output, and enterprise earnings.

This project proposed resurveying as many of these enterprises as possible in November 2001 to help monitor changes in agrarian structure. In November 2001, CASE undertook the resurvey of agricultural enterprises: 323 enterprises were reinterviewed, 22 refused to be surveyed, and 123 could not be relocated. A total of 140 new enterprises were thus selected to replace those enterprises lost due to refusals or failures to locate. Figure 1 depicts the size distribution of the sampled enterprises.

This Second Performance Survey of Agricultural Enterprises surveyed 463 agricultural enterprises

including 168 individual farms, 233 peasant farms (group farming units), 43 collective farms, and 19 state farms. The two surveys—1999 and 2001—create a longitudinal panel of data that will form one focus of analysis in the next fiscal year. In October 2002, an overview of the survey results, stressing a comparative description of the sampled enterprises assets and performance, was distributed to Kyrgyz policymakers, donors and academics: *Resources and Profitability of Agricultural Enterprises in Kyrgyzstan* (available in both Russian and English.) The survey reveals many of the evolving structural characteristics of Kyrgyz agriculture, such as the emerging rental market in land depicted in Figure 2 and the divergence in assets per worker between northern and southern enterprises shown in Figure 3.

The loss of 123 enterprises between the first and second round surveys represents a high failure or loss rate that raises large questions about the reasons why this happened. Possible explanations include enterprises abandoning the farming operation, or consolidation/ breakup of the farming enterprise into new individual or group enterprises, respectively. Both explanations have important implications for the dynamics of agrarian reform in Kyrgyzstan.

Figure 1. Distribution of Enterprises in BASIS 2001 Survey by Size of Landholding

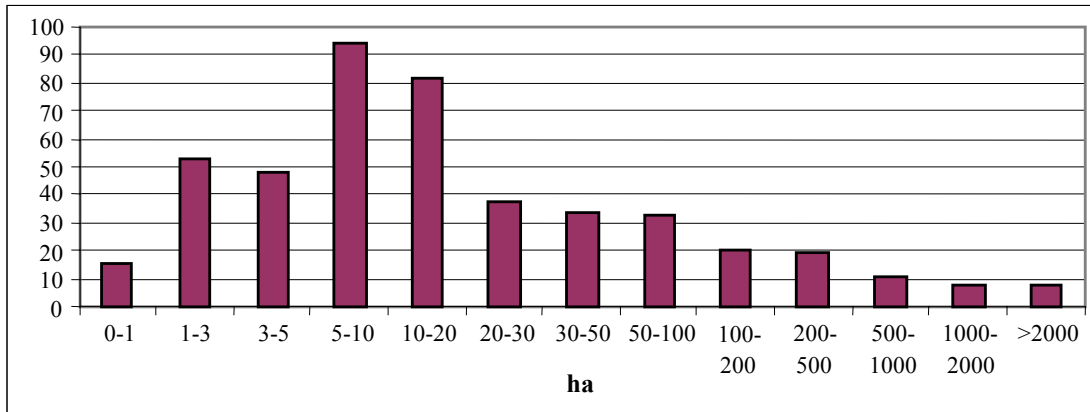


Figure 2. Fraction of Owned and Rented Land in Sample Enterprises in BASIS 2001 Survey

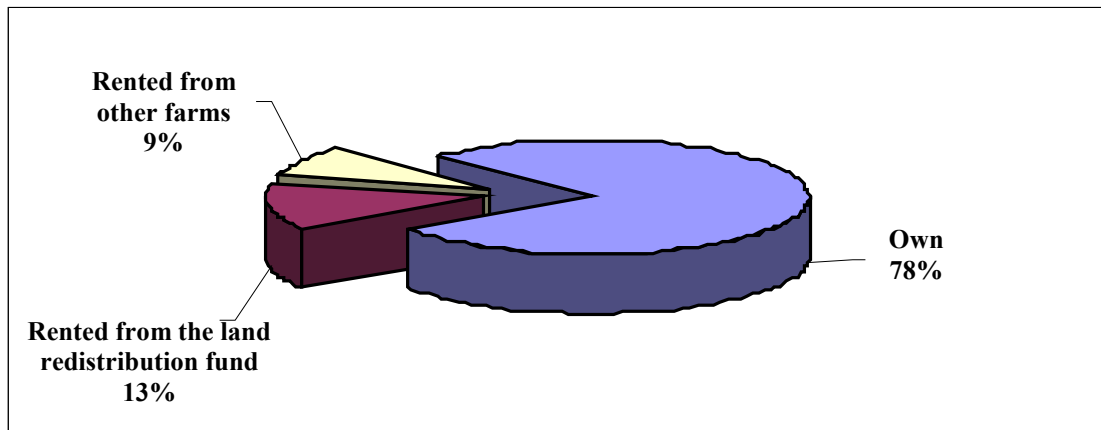
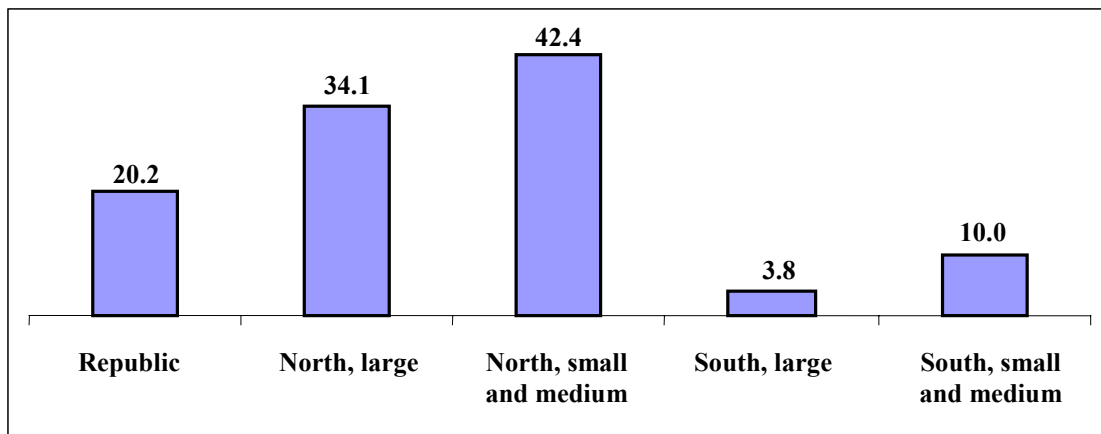


Figure 3. Value of Fixed Assets per Worker in Four Types of Farming Enterprises in BASIS 2001 Survey ('000 som)



B. South Africa

Michael Roth was in South Africa from 22 April-17 October 2002. While there, he was hosted by Mike Lyne of the Department of Agricultural Economics at the University of Natal–Pietermaritzburg, which provided office space and administrative support. The visit enabled Roth and Lyne to work closely on the management and administration of the project.

1. Case Studies of Equity Sharing Enterprises

The research program intended to commence with case studies of approximately ten established equity-sharing and community-based land reform projects, mostly in the Western Cape. In November 2001, a detailed study of nine Western Cape projects was conducted to explore relationships between their institutional arrangements and their financial performance, management and worker empowerment through skills training, gender sensitivity and participation in decision-making.

Established projects producing deciduous fruit, wine, citrus and vegetables were selected as case studies in the Lutzville, Elgin, Piketberg, Stellenbosch and Paarl districts. The enterprises were chosen to ensure variation across a number of indicators, including: use of external finance, size and gender composition of beneficiary group, proportion of equity owned by farmworkers, and certain institutional arrangements such as the choice of legal entities and business organization. The sample was designed to control, where possible, for non-institutional determinants of financial performance such as enterprise type and geographic region. However, actual financial performance was not known *a priori*, and there was no deliberate attempt to select only successful projects as case studies. The final choice of projects was constrained mainly by the fact that few of the 21 farm worker equity schemes (FWES) identified in the Western Cape had been operating for more than one year with their current set of institutional arrangements. In addition, some managers were not available at the time of the study. In two cases, the managers refused to participate.

In-depth interviews were conducted with the manager (frequently, the previous farmowner), worker-trustees, external financiers, local officials from the Department of Land Affairs (DLA), and representatives of the firms contracted to help with

project planning, training and facilitation. Interviews with the manager and worker-trustees were conducted using a structured, open-ended questionnaire to identify institutional arrangements and their impact on internal rules, practices, management, compliance, incentives, and access to finance. Interviews with external financiers, local officials from the DLA and the firms contracted to help with project planning, training and facilitation were less structured and explored project-specific problems. Researchers Lyne, Roth and Lastarria-Cornhiel assisted with the preparation of the survey instruments.

Sharon Knight (University of Natal) supervised field operations while the Cape Town-based firm Hamman, Schumann and Associates provided interpreters and logistical support. In November, Lastarria-Cornhiel traveled to South Africa to participate in the case studies paying specific attention to gender issues.

2. Analysis of Case Studies for Best Practices

Data gathered in the case studies were coded and captured in Microsoft Excel worksheets by Sharon Knight to be analyzed using the Statistical Package for Social Sciences (SPSS). The first round of analysis focused on perceptions of worker representatives and compared frequency counts across the nine projects with those from earlier case studies conducted by the Surplus People's Project (SPP) in 1998. The comparisons showed that many of the concerns raised by the SPP (relating to beneficiary participation and expectations, power relations between management and worker-shareholders, skills transfer and labor relations) had been addressed in the projects studied in 2001. However, certain problems were still apparent, e.g., worker-shareholders' tenure security and literacy levels, skill and wage differences between men and women, and poorly defined exit procedures.

The second round of analysis focused on identifying "best practices" and was undertaken by Knight with close supervision from Lyne and Roth. Relationships between variables representing the constructs of a successful equity-share scheme (sound institutional arrangements, effective worker empowerment, quality management and good project performance) were analyzed using hierarchical cluster analysis. In this instance, $n = 35$

dummy variables were separated into four clusters of positively correlated variables. It was anticipated that these clusters or “natural groupings” would all contain a healthy mix of variables drawn from each of the constructs, providing evidence of strong positive relationships between sound institutional arrangements, competent management, effective worker empowerment and good project performance.

3. Facilitation of Experimental Projects

Two commercial farms—a beef and timber operation near Mount West, and a beef and game operation near Noodsberg—were selected as suitable candidates for experimental equity-share schemes in KwaZulu-Natal. These farms were chosen from a rapidly growing pool of farms whose current owner(s) have expressed interest in sharing ownership and control with farmworkers and other previously disadvantaged communities.

3.1 Sherwood Farm, Mount West

In 1999, farm workers and their families living on Sherwood Farm applied to the DLA for “Labor Tenant” status in order to qualify for the DLA’s Settlement/Land Acquisition Grant (SLAG) of R15,000 per beneficiary household. An agreement of sale was negotiated between the owners of Sherwood Farm and the beneficiary households represented by the eGamaletu common property association (CPA). During 2000-2001, all but five of the labor tenant families relocated to Clipstone while waiting for the DLA to award their grants and complete the land transaction. These moves were premature in the sense that the beneficiaries occupied Clipstone without the benefit of a land use plan or essential services. Although the farm was officially transferred to the CPA in August 2002, planners have not yet been appointed nor has the balance of SLAG been lodged with the local District Council to pay for basic infrastructure. In addition, the beneficiaries face an immediate problem in that Clipstone cannot sustain the beneficiaries’ collective herd of 300 cattle. Some livestock died during the winter of 2002 and many had to be sold owing to their poor condition.

To address this problem, an equity-sharing scheme has been proposed that will allow the beneficiaries to exchange cattle for financial equity in a commercial beef enterprise on Sherwood Farm.

Prospective shareholders in the proposed beef ranching operation include the current landowners, represented by the Sherwood Farming Partnership, and 38 beneficiary families residing on Clipstone.

The fundamental objectives of the proposed equity-sharing scheme are to:

- facilitate sustainable use of Clipstone by allowing labor tenants to exchange cattle for financial equity in a commercial beef operation on Sherwood Farm,
- increase the incomes and wealth of shareholders through expert management of a larger commercial herd on Sherwood Farm,
- improve future business opportunities for the labor tenants by creating a sound community-based organization and transferring the skills needed to manage it.

Facilitators from LIMA started the process of explaining equity sharing arrangements to the community and identifying likely investors in November 2001. A card game was developed to help explain the implications of exchanging cattle or cash for shares in the new enterprise (see photo on title page of this chapter).

Graduate student Lauren Shinns conducted a baseline census survey of the 38 beneficiary households from 6-20 May 2002. A structured questionnaire designed by Shinns, Lyne and Greene was completed by each household head assisted by LIMA facilitators. Data were checked for errors.

The baseline data, which include observations on poverty indicators, will be used to (a) construct indexes measuring different dimensions of poverty (e.g., income, assets, health and quality of housing), (b) assign households to two or more groups with different poverty profiles, and (c) explain these differences in terms of possible causes. This analysis will establish benchmarks of relative poverty to monitor changes in the distribution of poverty when the same 38 households are paneled in 2004. Preliminary results have highlighted extreme poverty in the community (Table 1).

Table 1: Examples of Household Poverty Indicators at Sherwood Farm

Poverty dimension	Variable	Mean
Quality of housing	Access to safe water	5.2%
	Access to hygienic sanitation	6.3%
Income	Monthly income/adult equivalent	US\$21
Assets	Value of livestock	US\$1200

Peter Greene gathered additional resource and financial data for the existing and proposed operations and, together with Lyne, drafted a business plan for Sherwood. The latest version has been accepted by all of the prospective investors and entails the registration of three new legal entities—an organizational structure proposed by Johan Hamman to create a liquid market for shares. Sherwood Farming Partnership will be wound up and replaced by a new partnership between a trust (representing community participants) and a company (representing the interests of the current owners). Ithala Bank has agreed in principle to finance additional breeding cows and bulls, and the existing overdraft facility will be cleared and transferred to the new operating partnership. Hamman has prepared a trust-deed incorporating best institutional practices for community approval. It is hoped that all of the legal entities will be commissioned on 1 January 2003.

3.2 Clavelshay Farm, Noodsberg

In October 2001, Greene and Lyne met with representatives of a farmers' syndicate from Noodsberg in KwaZulu-Natal to discuss prospects for a game ranching equity-share project spanning ten private farms and neighboring communal land. The syndicate had already commissioned experts from the University of Natal to assess the natural vegetation and carrying capacity of the proposed game farm. Lyne, Greene, Ferrer and graduate student Gray accompanied Louis Freese (owner of Clavelshay Farm), Nkosi Ntuli, and tribal councilors (all from the community flanking the equity-sharing game enterprise proposed at Clavelshay Farm) on a tour of the Ngome

Community Game Reserve, 15 November 2001. The group was addressed by the manager, Walter Felgate, who described problems and opportunities confronting the community-based enterprise.

Based on these exploratory visits Ferrer began work conceptualizing an equity sharing enterprise involving the ten private farms. He presented his findings to the group of private farmers in June 2002. This meeting confirmed growing concerns that the project was too ambitious to be completed within the BASIS timeframe. In August, the chairman of the farmer's syndicate, Louis Freese, agreed to tackle the project in stages. The first stage will attempt to create an equity sharing arrangement between Freese and workers residing on his farm Clavelshay in a beef and game enterprise. In later stages, the game enterprise will be expanded to include other farmers, their workers and neighboring communities as shareholders. BASIS will focus on stage one.

Ferrer and Greene drafted a business plan for Clavelshay in September 2002 and LIMA initiated discussions with farm workers during October. Planning and facilitation are expected to be relatively quick at Clavelshay because the beneficiary group is small (approximately 10 households) and the institutional arrangements are similar to those developed for Sherwood. Workers will exchange cattle that they currently keep on Clavelshay for equity in the proposed partnership, and Freese will inject both cattle and game fencing. An important difference between the projects is that the beneficiary group at Clavelshay will acquire land as well as equity and will therefore qualify for grant funding from the DLA. The grants will finance new houses closer to services and increased equity in the enterprise.

4. Survey of Farmland Transactions

Stuart Ferrer conducted the 5th annual census survey of farmland transactions in KwaZulu-Natal and analyzed the data following the procedures established under BASIS Phase I. Although the research plan does not call for a report until the 6th census survey is finalized in 2002/3, it was decided that the results of surveys 1-5 should be combined and published as a chapter in a book on South African Agriculture that is currently being prepared for delegates attending the 25th International

Conference of Agricultural Economists at Durban in August 2003.

Figures 4 and 5 present extracts of the census results. Figure 4 shows an upsurge in government-assisted transactions in 2001 when the moratorium on public grants ended, and a decline in private transactions financed with mortgage loans. This could reflect steep increases in lending rates since

2000 and a temporary lull in Ithala's program for mortgage loans with graduated repayment schedules. Figure 5 shows that the overall rate of land redistribution within the Province remains disappointingly low at approximately 0.5% per annum.

Figure 4. Annual Area of Land By Mode of Redistribution to Disadvantaged Owners in KwaZulu-Natal, 1997-2001

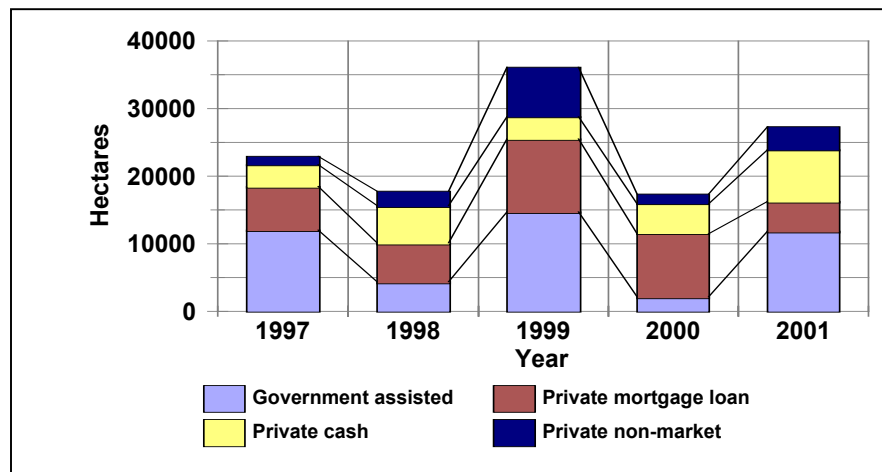
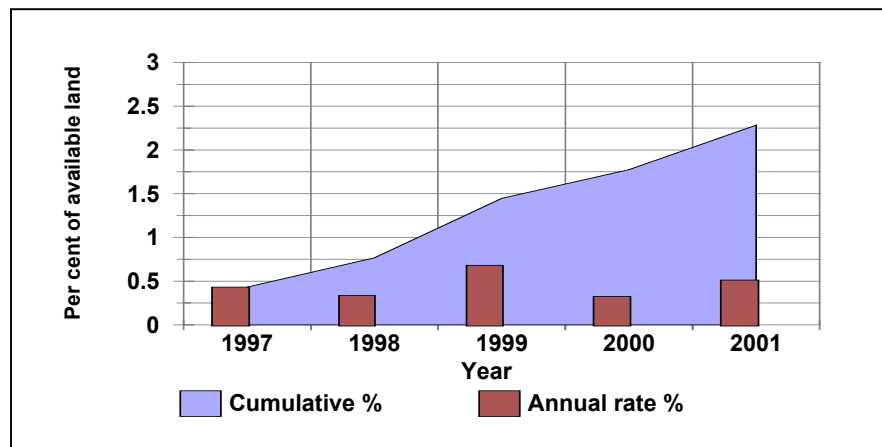


Figure 5. Estimated Cumulative and Annual Rates of Farmland Redistribution to Disadvantaged Owners in KwaZulu-Natal, 1997-2001



C. Problems and Issues

The KwaZulu-Natal Provincial Department of Agriculture will not approve grants to purchase equity unless the beneficiary is a fulltime worker on the farm, and unless there is a transfer of both equity and landownership to the beneficiaries. These criteria preclude LRAD grants for equity-share schemes involving neighboring communities (rather than farm workers) and are not applied in all provinces. The issue of eligibility has been taken up with the national DLA.

Common law in South Africa prevents a private company from purchasing, or financing the purchase of, its own shares. This diminishes the tradability of shares held in equity-share schemes, making them less attractive to poor investors. To improve liquidity in the market for shares, it has become necessary to substitute companies with trusts and partnerships. This entails much more time and expertise to draft and register constitutions (trust-deeds and partnership agreements) that entrench “best institutional practices.”

D. Collaboration

1. Global

USAID/SA funding allowed Michael Roth to attend and summarize the proceedings of South Africa’s November 2001 *National Land Tenure Conference: Finding Solutions, Securing Rights*. More than 850 delegates attended the conference sponsored by the Department of Land Affairs. Roth has been asked by DLA to serve on its reference group that advises on consolidation of the primary legislation that conveys tenure rights to farm-workers, labor tenants and other rural dwellers.

Financial support from BASIS and the World Bank allowed Roth to attend the World Bank Regional Workshop on Land Issues in Africa and the Middle East held in Uganda, 29 April-2 May 2002 and summarize key issues related to Southern Africa in the paper, “Integrating Land Issues and Land Policy with Poverty Reduction and Rural Development in Southern Africa.”

Funding from the University of Wisconsin and USAID/Zimbabwe allowed Roth to organize a two-session panel entitled “Recreating or Losing Common Property? Decentralizing Rights to Land and Water in Malawi, Zimbabwe and the US” for

the International Association for the Study of Common Property 9th Biennial Conference, 17-21 June 2002, held in Zimbabwe. The panel included two presentations by BASIS CRSP researchers. Bill Derman, Michigan State University, Anne Hellum, University of Oslo and Francis Gonese, CASS, presented: “Decentralizing Rights to Water?: Water Reforms, Informalization and Customary Rights in Southern Africa.” Anne Ferguson, Michigan State University, and W.O. Mulwafu, University of Malawi, presented: “Decentralization and Environmental Reform in Malawi: Property Rights for Women?”

World Bank funding allowed Malcolm Childress to attend the Bank’s Regional Workshop on Land Issues in Asia, held in Cambodia, June 2002. He also served on the coordinating committee to organize the event. With Michael Carter, Childress led a working group on land markets.

During 2001 Childress was selected in a small grant competition by the USAID-financed Global Livestock CRSP to lead a study on sheep and wool production and marketing constraints in the Kyrgyz Republic. The study is titled, “Linking Sheep Producers and Markets: The Role of the Kyrgyz Sheep Breeders Association in Evaluating and Promoting Profitable Sheep Marketing Strategies.” The project became operational in July 2001.

Childress and Rachel Sabates-Wheeler of the Institute of Development Studies, University of Sussex, UK, were selected by the UK Department for International Development’s Economic and Social and Research Strategy grant competition to carry out the study, “Institutional Complexity after Land Reform: the Challenges of Cooperation for Rural Poverty Reduction in Transition Countries,” which will focus on social capital and transaction costs in informal group farm enterprises in Kyrgyz Republic and Romania during 2002-2003.

2. South Africa

Draft papers prepared by Knight, Lyne and Roth were requested by and sent to the SPP, the Land Reform Credit Facility and the South African Cane Growers’ Association. The Legal Entity Assessment Project (LEAP) agreed to advise and assist LIMA with the institution building process at Sherwood Farm.

3. Kyrgyzstan

The project provided data for the USAID Land Reform Project newsletters and supplied referrals to USAID's Small and Medium Enterprise Project. The project supplied data on milk production and processing to the joint US-Israeli Mashav project on agricultural technology with the intent of facilitating equity-sharing schemes for dairy processors in Chui and Issyk-Kul Oblasts. The project papers were requested by the World Bank agribusiness development project preparation team.

E. Key Findings

BASIS research has delivered findings on best institutional practices among the equity-share and community-based land reform projects studied. Below is a summary of conclusions from the cluster analysis of variables representing constructs of a successful equity-share scheme. BASIS research provides baseline data for understanding farm enterprise dynamics in the Kyrgyz Republic. Also below is a summary of conclusions on profitability and investment potential.

Best Practices in South Africa

Cluster analysis of 35 variables found strong positive relationships among sound institutional arrangements, effective worker empowerment, competent management and successful performance. A successful farmworker equity scheme should be operated as, or like, a company with voting and benefit rights proportional to the investment made by each member, but with restrictions on certain share transactions, including:

- limits on the transfer of shares by employees to non-employees through sale or bequest,
- temporary moratorium on sale of shares coupled with a long-term plan to effect gradual reduction in proportion of equity held by previous owner.

These institutional arrangements must be accompanied by other best practices such as worker participation in the design of the scheme and its operating rules, provision for female representation in the workers' legal entity, and a general transfer of basic literacy, life and technical skills. This should be followed by mentoring in financial, administrative and managerial skills so that worker representatives can perform their duties as office bearers, participate meaningfully in policy decisions, and ultimately establish their own enterprises.

Profitability and Investment Potential in Kyrgyzstan

- General level of input supply, profitability and labor productivity remains low compared to European standards.
 - Simple and often informal organizational and legal forms and management structure of the majority farms are probably expedient for the current, transitional situation. To mobilize direct investments, better transparency of farms' economic operation and the decision-making system may be required. Investment is expected to occur first in processing and then be passed on to farms through supply relationships.
 - The conservative production strategy most farms follow is based on minimizing risk, providing members with food for own consumption, and aspiring to self-sufficiency. This creates the possibility to earn cash under favorable market conditions and avoid starvation under unfavorable conditions.
 - Though the absolute level of current investments is very low, the relative level is not. Most farms invest 10-15% of net margin, indicating an understanding of the need to invest.
 - Markets play a significant part in enterprise economy. Development of these markets will directly impact farms.
 - Preliminary analysis does not make it possible to simply identify a broad class of farm that unconditionally demonstrates superior indicators and could be considered as model.
 - Land is the scarcest resource in agriculture and the return per one hectare of land is one of the most important indicators of economic efficiency. From this point of view small and medium enterprises have visible advantages.
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II. WORKPLAN 2002-03

A. Kyrgyzstan

1. Complete Background Papers on Business and Investment Climate

Lyne and Roth submitted comments aimed at finalizing the following three draft reports for posting on the BASIS website (the last paper as a journal article, as well):

- “Agricultural Businesses—Organizational and Legal Forms Permitted by the Legislation of the Kyrgyz Republic.”
- “Taxation and Other Financial Costs of Agricultural Entities.”
- “Financing Agricultural Restructuring in the Kyrgyz Republic: Can Donor Capital and New Credit Institutions Fill the Investment Gap?”

Approximately 30 copies each (in English and Russian) will be reproduced as working papers for distribution within Kyrgyzstan to USAID partners, NGOs, and other civil society organizations.

Analysis of one paper for publication on the Farm Survey will be delayed, and three case studies will be carried over because of late project startup.

2. Legal and Institutional Constraints Analysis

Three new background papers will be prepared on the following to help deepen the work on legal and institutional analysis initiated in year one:

- Agreements and Contracts,
- Debt Restructuring and Bankruptcy,
- Attraction of Foreign Investment.

Bobukeeva will assemble and review relevant legislation on contracts, debt, bankruptcy, and business investment to deepen researchers understanding of the legal and business environment in Kyrgyzstan. A report analyzing each topic will be prepared in Russian and English and posted on the BASIS website.

3. Case Studies of Equity-Sharing Enterprises

Enterprises in Kyrgyzstan continue to splinter, consolidate and adopt new organizational forms with considerable fluidity. In addition, the legal,

market and macroeconomic environment in Kyrgyzstan remains both tenuous and hostile to economic growth.

Work will continue to have an exploratory and research focus to gain better understanding of these dynamics and how they impact enterprise viability. A study of seven case enterprises in 2002 revealed that the most promising institutional innovations have to do with the formation of groups or associations of producers that supply a processor/wholesale market and/or provide a service. Three additional case studies will be carried out in 2003 to help deepen this analysis: two are milk processors in Issyk-Kul oblast, and one is a winemaker in Chui oblast. A potential for collaboration with the Mashav project that provides advice on agricultural technology and marketing could deepen these studies and prepare the way for facilitation.

By March 2003, ten case studies will have been undertaken with at least one enterprise studied in each of the following five categories of farming operations: peasant (group) farms, agribusiness processors, collectives, water users associations and farm machinery suppliers. Of this group, at least four processors will have been surveyed, reflecting their key position in the marketing chain. In Osh oblast the project will collaborate closely with the USAID Small and Medium Enterprise Support Project (Pragma Corp.) to further analyze and facilitate institutional innovations among the selected enterprises.

It is still premature to say whether any of the case study enterprises visited will become candidates for BASIS facilitation and restructuring, although one appears to be a likely candidate (Sadykov cotton operation in Aravan Rayon, Osh Oblast). There is also risk that the facilitation process started too early without adequate time and research being given to acquiring the knowledge needed to advise on enterprise restructuring. With this caution in mind, the following activities will be given priority:

- Complete three more case studies and a paper analyzing Legal Foundations, Business Conduct, and Performance of Case Study Enterprises,
- Analyze the November 2001 Farm Survey Data and complete paper on Farm Enterprise

Constraints, Performance and Agrarian Structure,

- Childress and Erdolatov will visit farm enterprises strategically selected to gain better understanding of sector or meso-level constraints affecting farm level performance and to continue the search for suitable candidates for enterprise facilitation,
- Giovarelli will lead a focused subset of the fieldwork to examine women's participation as shareholders and the particular challenges women members face as equity participants in the enterprises,
- Childress, Lyne, Mogilevsky and Roth will review the case studies to determine whether gaps are evident in enterprise type, whether any of the current group of enterprises visited are suitable restructuring candidates, or whether additional case study or sector level research is needed,
- Depending on the outcome of this review, one enterprise will be tentatively selected for facilitation. Childress, Erdolatov, and Mogilevsky will begin initial discussions of restructuring options—in particular, new organizational and financial arrangements—with management. Depending on progress facilitators will identify beneficiaries and begin negotiations with stakeholders to propose and explain the new arrangements. It may be the case that researchers reach the point of preparing a detailed business plan for the selected enterprise, but they will take care to ensure that facilitation does not proceed in advance of a supportive legal/market environment being established, an adequate understanding of institutional best practices being achieved, and buy-in from the enterprise's management.

South Africa has a more accommodating legal and market environment for investment and deeper NGO capacity for facilitation to aid beneficiaries in pursuing new business arrangements. Indeed it is proving difficult for policymakers within Kyrgyzstan to appreciate the possibilities for restructuring given the localized environment within which they are operating. Ideally, a study tour of BASIS researchers and policymakers from Kyrgyzstan would visit South Africa in the next workplan period to explore institutional arrangements and the process of facilitation being

used there. BASIS researchers are pursuing other funding (e.g., from the USAID mission in Bishkek) to fund this study tour. If no additional funding is available, researchers Lyne and Roth will consider moving forward the visit of two Kyrgyz researchers (Erdolatov and Mogilevsky) now scheduled for year three to year two, while simultaneously delaying other activities to be identified.

4. Conduct and Analyze Farm Survey

The Farm Performance Survey to monitor changes in agrarian structure and performance would be implemented annually. The research team is considering the cancellation of the 3rd Farm Performance Survey scheduled for November 2002 and in its place conduct a study of “lost” agricultural enterprises that existed in 1999 but could not be located in 2001.

A simple questionnaire would be administered to a sample of former members of the 30-40 lost agricultural enterprises to determine reasons for the exclusion in the 2001 panel survey. The Farm Survey would again be carried out in November 2004, creating panel data on agricultural enterprises for 1999, 2001 and 2003.

This decision will need the input of the Center for Land and Agrarian Reform which relies on this annual survey for its information on the state of the farm sector. Two strategies are being explored. With add-on resources from the USAID mission in Bishkek, the project would be able to support both the annual survey and the study of lost enterprises. However, in the event that USAID add-on funding does not materialize to support this strategy, BASIS support for the annual survey would be postponed.

Postponing the Farm Performance Survey would also have the advantage of shifting time and resources away from data collection to analysis of existing data. Two outputs are anticipated for the next fiscal year based on the two annual surveys (1999 and 2001) conducted to date:

- “Enterprise Performance and Agrarian Structure: A Dynamic Analysis of Change Between 1999 and 2001” (Mogilevsky).
- “Institutions, Governance and Farm Enterprise Performance” (Childress and Roth).

5. Synthesis

By the fourth quarter of 2003, the project in Kyrgyzstan will have produced in indicative terms 6 background papers drawn from the legal and institutional constraints analysis, 10 case studies, and 2 articles drawn from the Annual Farm Performance Survey panel data. Two papers synthesizing these outputs are anticipated:

- “Asset Ownership Inequality and Gender Discrimination: Subtle and Not-So Subtle Ways that Women are Disadvantaged in Asset Ownership and Business Relations” (Giovarelli).
- “Legal Foundations, Business Conduct, and Enterprise Performance: A Synthesis of Legal Review, Enterprise Case Studies, and Farm Survey Results” (Childress).

B. South Africa

1. Finalize Masters Thesis and BASIS Brief on Best Institutional Practices

Knight will complete her Masters thesis with supervision from Lyne and Roth. The thesis will draw heavily on two papers submitted for publication in peer-reviewed journals. These papers present (a) theoretical and empirical models of interrelationships between variables measuring enterprise performance, governance, skills transfer and management quality, (b) the results of a cluster analysis performed on these variables to test hypothesized relationships, and (c) a set of best institutional practices for equity sharing projects distilled from both the empirical and theoretical analyses. Roth and Lyne will prepare a BASIS Brief describing and rationalizing these best institutional practices.

2. Facilitation of Experimental Projects

Facilitators managed by Peter Greene of LIMA will continue implementing the business plans drafted for each experimental project. Hamman, Greene and Lyne will prepare a draft constitution for the company proposed at Noodsberg, secure its acceptance by prospective shareholders and register the company. Greene and his facilitators will train office-bearing members of the beneficiary communities and will maintain close contact with both projects to (a) ensure that shareholder rights and obligations are observed, (b) mediate disputes,

and (c) refine business plans and institutional practices. LTC researcher Susana Lastarria will evaluate enterprise business plans and constitutions and advise on ways to improve gender equity and empowerment.

Greene, Lyne and Stuart Ferrer will help the project managers negotiate loan finance (most likely from Ithala bank) for their new enterprises, and will prepare applications for grant funding under the DLA’s Land Reform for Agricultural Development (LRAD) program. In this regard, Roth, Greene and Lyne will intensify dialogue opened with DLA policymakers at national and provincial levels to reconsider their rules governing access to LRAD grants. In addition, Roth will meet with USAID/Pretoria to secure additional funding for complementary research activities. Greene, Ferrer and Lyne will prepare a BASIS Brief describing the facilitation process.

3. Measure and Construct Benchmarks

Bernadine Gray will conduct a baseline survey of prospective beneficiary households at the Noodsberg project. Shinns also will analyze data gathered in the earlier survey of beneficiary households at Mount West and construct indexes measuring different dimensions of poverty. These indexes will constitute a subset of the benchmarks used to monitor project performance over time. Gray will apply the same technique to the Noodsberg data and, together with Roth and Lyne, will identify a comprehensive set of benchmarks. Other outputs include a Masters thesis on the poverty status of land reform beneficiaries (Shinns) and a journal paper presenting poverty indexes (Shinns and Lyne).

4. Census of Farmland Transactions

Ferrer will acquire the 2002 Deeds of Transfer for farmland in KwaZulu-Natal in February, and will complete the analysis of these data and present results obtained from both 2001 and 2002 census surveys. Lyne and Darroch (BASIS I researcher) will combine the results of the 2001 census survey with those obtained for the years 1997-2000 (under BASIS I) for publication in a book to be released at the triennial Congress of the International Association of Agricultural Economists in August 2003. These outputs will compare rates and modes of land redistribution across census surveys (to

assess public and private land reforms) and will examine the nature of property rights acquired by individual beneficiaries—women in particular.

C. Anticipated Findings

1. Indicators based on Case Studies

Performance indicators will focus primarily on the analysis of case study enterprises, nine in South Africa and ten in Kyrgyzstan. Data on a variety of project performance indicators have been collected to assist researchers in identifying best institutional practices, including, *inter alia*, financial performance, use of external finance, number and gender of beneficiaries, beneficiary benefits, skills transfer, and the workers' relative shareholding (ownership) and participation in enterprise decision-making (control). Institutional practices will be measured in terms of key governance and organizational variables identified in the analysis of the case studies.

2. Enterprise Facilitation

Benchmarks to monitor the new equity sharing projects will be finalized for both South African projects. The poverty benchmarks will be computed from baseline surveys of beneficiaries conducted at the two experimental projects. Comparable data will not be available for Kyrgyzstan until 2004. Levels of loan and grant capital will also be monitored as indicators of improved access to capital markets.

3. Analysis of Panel Survey Data

Annual Farm Performance Survey, Kyrgyzstan

- Analyze indicators of total costs, debts, asset values and profitability of restructured corporate enterprises and individual holdings based on the farm survey.

Annual Census of Farmland Transactions, South Africa

- Analyze rate of farmland distributions to the historically disadvantaged in KwaZulu-Natal based on census survey data,
- Analyze annual and cumulative credit financing channeled through the Credit Facility to aid disadvantaged households in acquiring land based on data provided by DLA.

D. Anticipated Outputs

1. Kyrgyzstan

- Three background papers on Legal and Institutional Constraints: Agreements and Contracts, Debt Restructuring and Bankruptcy, and Attraction of Foreign Investment (Bobukeeva),
- Farm Enterprise Performance and Agrarian Structure: A Dynamic Analysis of Change Between 1999 and 2001 (Mogilevsky),
- Legal Foundations, Business Conduct, and Enterprise Performance: A Synthesis of Legal Review and Farm Enterprise Case Studies (Erdolatov and Childress),
- Institutions, Governance and Farm Enterprise Performance (Roth, Childress and DeCourmier),
- Asset Ownership Inequality and Gender Discrimination: Subtle and Not-So Subtle Ways that Women are Disadvantaged in Asset Ownership and Business Relations (Giovarelli).

2. South Africa

- Masters thesis: “Best Institutional Practices for Farm Workers and Community Equity-Sharing Schemes” (Knight),
- Journal paper analyzing dimensions of poverty among the eGamaletu land reform beneficiaries in KwaZulu-Natal (Shinns and Lyne),
- BASIS Brief describing best institutional practices observed in case studies of joint farming ventures in South Africa (Roth and Lyne),
- Masters thesis: “Analyzing Poverty in a KwaZulu-Natal Land Reform Community” (Shinns),
- Book chapter: “Land Redistribution in South Africa: Past Performance and Future Policy Direction” (Lyne and Darroch),
- BASIS Brief on facilitation of farmworker and community equity-share projects in KwaZulu-Natal, South Africa (Greene, Ferrer and Lyne),
- Report on farmland transfers: “Land Redistribution in KwaZulu-Natal, South Africa: Six Census Surveys of Farmland Transactions, 1997-2002” (Ferrer).

Kyrgyzstan Activities	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Personnel primarily responsible
1. Background Papers					
Finalize papers					Bobukeeva, Childress, Mogilevsky
Three case studies					Erdolatov
Analysis of farm survey					Mogilevsky
2. Legal and Institutional Constraints					
Legal and institutional reviews					Bobukeeva
Analysis and write-up					
3. Enterprise Case Studies and Facilitation					
New Case Studies					Erdolatov
Gender Constraints Research					Giovarelli
Enterprise Facilitation					TBD
4. Farm Survey					
Survey of “lost” enterprises					Mogilevsky
2001 Statistical Report					Mogilevsky
Analysis of 1999 & 2001 data					Roth, Childress, Decournier
5. Synthesis					Childress, Giovarelli, Roth

South Africa Activities	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Personnel primarily responsible
1. Carryover Activities					
Masters thesis on equity share case studies					Knight, Lyne, Roth
<i>Basis Brief</i> on best institutional practices					Roth and Lyne
2. Facilitation of Experimental Projects					
Draft constitutions and register companies					Hamman, Greene, Ferrer, Lastarria
Implement business plans for new companies					Greene and LIMA facilitators
Intensify dialogue with policy-makers and financiers					Roth, Greene, Lyne
3. Measure and Construct Benchmarks					
Conduct baseline survey of beneficiaries					Shinns, Gray, Lyne, LIMA facilitators
Construct poverty indexes					Shinns and Lyne
Establish benchmarks for projects					Roth, Lyne, Gray
4. Census of Farmland Transactions					
Analyze 2002 transactions					Ferrer
Disseminate findings					Ferrer

III. LITERATURE REVIEW AND STRENGTHENING THE THEORETICAL FRAMEWORK: RESPONSE TO BASIS BOARD OF DIRECTORS

(The following literature review is in response to the BASIS Board of Director's examination of the project. The Board's comments were as follows: *The Board thought that there was a bias toward the positive benefits of equity sharing schemes, without strongly linking theoretically to the literature on cooperatives, especially that which identifies the problems of such institutions. The Board was concerned about the vague theoretical framework to be used for selecting the enterprises to be studied, for analyzing the best practices, and for assessing shareholder benefits or impact. Therefore, the Board requests an addendum to the work plan linking the project more closely to the literature on cooperatives and strengthening the theoretical framework.*)

Subset of Land Reforms

Central Asia and Southern Africa are undergoing political and economic transition, the former from state and collective farm ownership to private groups and individuals, and the latter to redress the apartheid and colonial heritage of a racially biased and unequal landownership. Countries in these regions share a common problem: poor people in rural areas are unable to make productive use of their land resources. The problem is most acute where it has not been feasible to privatize land, water, infrastructure or movable assets to individual owners. Many beneficiaries of land reform in these regions find themselves co-owning resources, often in large and diverse groups. Collective or group ownership and management of land and water resources and fixed capital improvements is emerging as a prevalent model in both transitions. One goal of this research project is to monitor the overall rate of farm privatization and redistribution (including individual and group ownership) in the Kyrgyz Republic and South Africa. Individual ownership of land and fixed capital is an important policy thrust in both transitions, but this research activity focuses on group ownership for two reasons. First, individual ownership is not a feasible land reform option in situations of lumpy resources and significant economies of scale in accessing land, markets or technology. Second, many group

models have failed. The main objectives of the research are therefore to better understand those failures, to identify solutions suggested by the New Institutional Economics and the recent proliferation of "new generation" cooperatives in the US, and to test these solutions or "best practices" in order to provide policymakers with convincing recommendations.

Importance of Group Models in Country Settings

Land reform in South Africa has fallen far short of the goals set by the first democratically elected government in 1994 (Deininger *et al* 1999:12). In the province of KwaZulu-Natal where farmland transactions have been monitored since 1997, less than 0.5% of the commercial farmland owned by whites has transferred to historically disadvantaged owners each year, despite the presence of an active land market and the availability of government grants to purchase land on a willing buyer-willing seller basis. The slow pace of land reform has been attributed to two fundamental obstacles. First, it is difficult to partition large commercial farms into smaller, more affordable units owing to legal constraints and the high cost of surveying, transferring and registering sub-divisions (Graham 2000:19; Simms 1997). Second, prospective farmers lack capital and are unable to finance land with mortgage loans from commercial banks due to cash flow problems caused by high nominal interest rates and relatively low returns to land (Nieuwoudt and Vink 1995).

Faced with these problems, most of the disadvantaged people who have managed to acquire farmland have done so by pooling their meager resources and purchasing farms collectively, a trend that is likely to continue even if the inflation rate declines and legislation restricting the sub-division of commercial farms is repealed. During 1997-2000, disadvantaged owners acquired 94,160 hectares of the commercial farmland in KwaZulu-Natal. Of this amount, 12.9% was acquired through private non-market transfers (mainly donations and bequests), 35.3% was redistributed through

government-assisted (SLAG) purchases, and 51.8% was redistributed through private land market transactions (cash and mortgage loans). Without exception, government assisted transactions (33,263 ha) have involved the establishment of communal property associations or community land trusts involving multiple owners. Corporate entities also accounted for 35% (17,181 ha) of the farmland purchased privately by previously disadvantaged people. More than half of the farmland redistributed in KwaZulu-Natal is therefore co-owned (Lyne and Darroch 2001).

During the Soviet era, almost all agricultural assets in Kyrgyzstan were state or quasi-state property. Rapid privatization of state assets in Kyrgyzstan's agricultural sector since 1992 has resulted in the creation of a large group of new agricultural enterprises whose common characteristic is shared ownership by groups of member-owners. Three broad classes of these newly privatized entities have emerged from privatization: agricultural production enterprises, agricultural service enterprises,¹ and water user associations. Seventy percent of arable land, almost all agricultural machinery, and almost all agricultural services (transport, chemicals, food processing) are owned and managed by privatization beneficiaries who have become shareholders in the new enterprises. Although Kyrgyzstan has a fast-growing sector of small, independent farms that have broken off from the collectives, the small farmers remain dependent on service entities operated by shareholders, and most are members of a service cooperative or water-user association. Privatization constrained by indivisible assets or costly asset restructuring is thus forcing the issue of creating corporate forms capable of managing shared assets.

In 1999, BASIS helped support the implementation of the First Performance Survey of 468 Agricultural Enterprises by the Center for Land and Agrarian Reform. In November 2001, CASE undertook the

¹ While agriculture machinery has mostly been nominally privatized to workers of the former-state farms, in practice the management remains with either the successor collective farms, or a government agency, AilTechService, which operates as a leasing company through the local government administration. This agency also maintains a monopoly on the import of new equipment.

Second Performance Survey of 463 agricultural enterprises including 168 individual farms, 233 peasant farms (group farming units), 43 collective farms, and 19 state farms. While these data suggest the persistence of state farms, collective farms, and peasant farming enterprises, they also reveal considerable fluidity in Kyrgyzstan's agrarian structure—only 345 enterprises in the 1999 survey could be relocated in 2001 suggesting a large number of enterprises (123) that have either abandoned farming, or restructured into new individual or group enterprises.

Dismal Performance of Farm Production Cooperatives and Collectives

Benefits from agricultural production cooperatives (APCs) theoretically derive from their ability to facilitate the utilization of scale economies, promote equity, increase workers' incentives, enable technology adoption, and bring forth a higher level of public good provision (Deininger 1993). Review of these arguments according to Deininger reveals that there are no significant economies held exclusively by production cooperatives, and communal production introduces severe disincentive effects that tend to undermine the viability of the cooperative enterprise. Furthermore, whether agricultural production cooperatives have a comparative advantage in promoting technical innovations, or providing public goods, lacks both theoretical foundation and empirical evidence. On most counts, the cooperative will be less efficient than the large scale mechanized farm or comparable profit-maximizing firm. "These predictions are reinforced by empirical evidence showing that cooperative forms of agricultural production exceeding the size of a family farm are virtually absent in industrialized countries and that the experience with formation of production cooperatives in seven developing countries was dismal." Moreover:

Reversal of collectivization facilitated gains in production and efficiency in a number of instances. Maximum productivity gains from such decollectivization would be expected if (i) competitive markets for inputs, outputs, and credit exist; (ii) the macroeconomic environment does not discriminate against agriculture; (iii) technology for the new units

is readily available; (iv) farms are small enough to be able to rely predominantly on family labor; and (v) property rights are sufficiently secure to provide an incentive for investment. The experience of China and Vietnam illustrates that even if not all of these conditions were met initially and land endowments were very low, decollectivization led to considerable one-time productivity gains. In both cases a mix of cooperative and private sector arrangements to facilitate marketing, the utilization of existing farm machinery, and the establishment of infrastructure, made significant contributions to this success. (Deininger 1993, p. ix)

Examples abound of initial successes and then failure of cooperative farming experiments, disabled from without by poor external environments or lack of political support, or paralyzed from within by internal conflict and lack of individual incentives (see box A).²

Collectivization in Columbia according to De Haan and Werter (1985) created a state of indebtedness, poor economic results, and poorly maintained infrastructure on collective farms stemming from lack of members' ability to manage a collective enterprise, free rider problems, lack of credit, technology choice inconsistent with beneficiary interests and skills, and imposed technical innovations that left beneficiaries uncommitted.³ (See also Castellanos and Alvarez for Cuba).⁴ In

² Critics of agrarian reform often point to the large membership declines as evidence that redistributing land to group enterprises is failing to redress problems of landlessness or change the structure of economic relationships in the countryside. However, as Barham and Childress (1992) have argued, major membership decline in the early years of enterprise life may be more accurately described as a resource adjustment to membership oversubscription in an institutional environment where land and credit access are constrained and are not easily mobile.

³ According to Lopez (n.d.), eighty percent of all rural cooperatives formed in Colombia tended to dissolve within the first 18 months of operation, and many successful urban cooperatives, especially those connected with the financial sector, have used the philosophy and legislation of the cooperative movement as a cover for capitalist interests.

⁴ Beginning in 1993, large state farms were converted to basic units of cooperative production (UBCPs) to

Bolivia, Chile and Venezuela, cooperatives failed to capitalize on the emergence of strong peasant associations, while in Peru, cooperatization was promoted without widespread peasant support (Eckstein and Carroll 1974).

Peru's 1969 agrarian reform imposed collective property rights and APCs upon beneficiaries. While land was taken away from a powerful landed oligarchy, the elimination of important features of property rights in land and the imposition of APCs had been a major flaw (Hatzius 1994). These reforms were couched within the strategy of import substitution and state-led development that favored industrialization over agriculture. Following the transition to democracy in 1980, government embraced market liberalization. Expropriations came to an end, and more diverse forms of landownership and agricultural enterprises were allowed. For the APCs, parcelization accelerated (a process already underway informally since the late 1970s) and member in-fighting ensued as the existence of privately worked plots on collectively owned land reduced labor contributions on common crops. By the early to mid 1990s, according to Hatzius, large cooperatives were continuing to "muddle through", while small and medium sized APCs continued to decline as a result of parcelization.

overcome problems of inefficient use of productive inputs and capital investments that plagued the state extensive growth model. Using first-year performance data, 9% of the 1,426 UBPCs in operation increased production, 50% had problems resolvable within a year's time, and 41% exhibited problems without immediate solution. This discouraging performance was attributed to lack of entrepreneurial leadership, workers and housing; inadequate workplace infrastructure; and UBPCs lack of real autonomy from the sugar agro-industrial complex.

Box A: Country Examples of Cooperative Failures

<p>Cambodia Frings 1993</p>	<p>During the 1980s, the Government of the People’s Republic of Kampuchea struggled to rebuild, with very limited resources, a country in ruins after 10 years of civil war, foreign invasions, and experiments in ultra-collectivization. In 1979, the new leaders faced the urgent task of restoring production in the wake of Vietnamese invasion. Production Solidarity Groups (PSGs), 20-25 families in size, were established to make limited resources available to a large number of families who lacked labor, and had no cattle, buffaloes, agricultural implements, seed, or dwellings. By 1989, government was acknowledging that the collective system of landownership had failed and was meeting with popular opposition. A law amending the Constitution adopted on 11 February 1989 stipulated that citizens were to have full right to manage land and have the right to inherit land granted by the state for the purpose of living on it and using it. These reforms proved very popular. In places where the land was still farmed in common in 1989, it was soon distributed to peasant families. What little collective work remained in 1989 rapidly collapsed. However, ineffective the PSGs became, in the first years they succeeded in keeping people in the countryside and in helping vulnerable populations (widows, elderly, disabled and poor farmers) restart lives and agricultural production. After the PSG framework was abandoned in 1989, inequalities became large, abuses more frequent, and the disadvantaged people were left without anything to replace the social security provided by the PSG.</p>
<p>Dominican Republic Meyer 1989: 1257-58</p>	<p>The assassination of Trujillo in 1961 provided the impetus for agrarian reform. The Trujillo lands were confiscated by the state and the Instituto Agrario Dominicano (IAD) was established to administer the reform program. In addition to land redistribution, IAD was made responsible for irrigation projects, credit delivery, agricultural services and cooperatives. Further changes were implemented in 1972, in particular, the reallocation of productive rice lands to land reform beneficiaries who were to farm the land collectively under the IAD’s supervision. Collectives varied in size from 60 to 80 members. Major complaints were voiced by the beneficiaries—lack of relationship between members’ work and payment received; excessive control by the IAD administrator; and inability of the collective farm to absorb family labor. Although workers were supposed to be paid according to days worked, reluctance of members to accuse friends of shirking on responsibilities, usually meant profits were divided equally. The amount of effort put into each task or activity was even harder to police. Attempts to improve the incentive problem eventually led to the division of many collectives into smaller farms.</p>
<p>Grenada Benoit 1991</p>	<p>Establishment of the National Cooperative Development Agency (NACDA) in 1980 represented a policy shift toward cooperatives to increase production and reduce unemployment among the landless and rural poor. Major initiatives included setting up a land reform commission to identify idle lands and unemployed youth; feasibility studies to assess project viability; and provision of project financing. By mid-1983, 12 cooperatives were in existence involving 160 youths working 146 acres of land. Productivity was low and unprofitable and could not have satisfied member needs. Professional and social development of members was negligible; any development that was realized tended to result in members seeking private sector employment or migrating to North America. Members lacked training to manage the cooperative, land was limited, and membership fixed in number. NACDA encouraged members to move to lands of inferior quality. Even if land was suitable for cultivation, it was often not irrigable, or members lacked the capacity to manage irrigation systems. NACDA tended to pursue its political mandates, and gave insufficient attention to analysis and evaluation, resulting in poor technical implementation.</p>
<p>Sri Lanka Gooneratne and Samad 1979: 280-281</p>	<p>Early land reform cooperatives in the post-war era ended in failure. Renewed attempts were made in 1965 to organize youth farms. The Land Reform Law of 1972 and the Agricultural Productivity Law of 1972 made provision for the establishment of cooperative farms (Janawasas). Objectives were to (1) create employment; (2) increase production; (3) develop cooperative forms of organization; (4) promote self-reliance; and (5) encourage economic and social equality. Apart from a few instances of success, the performance of the cooperative farm sector was discouraging. Youth schemes have been subdivided into individual holdings. DDC (Divisional Development Council) cooperative farms are considered a waste of resources and effort. The Janawasas farms have yet to be properly evaluated.</p>

What happened? According to Hatzius (1994):

In the case of APCs the situation with respect to principal-agent relationships was blurred. The government as principal failed to design contractual arrangements which would minimize transaction costs and keep agents such as cooperative members and managers working towards the goal of reaching a high level of extractable surplus. Members would determine wages and benefits irrespective of economic and financial feasibility, resisting any payment system to prevent free-riding, shirking and low quality work. Managers, on the other hand, responsible for decision-making and the overall economic result of the enterprise—even though appointed by a government agency—were employed by the cooperatives and could be fired at any time while trying to secure labor effort and quality. Together with the absence of a performance related payment system, temptation was high for fraudulent practices accompanying the purchase of inputs or equipment (kickbacks, overcharging).

In smaller cooperatives, members sometimes would be able to monitor each other, thereby reducing free-riding and shirking. In most cases, however, input of labor effort was low as no sanctions...[no] payment system based on piece rates...[or] quality incentives could be established...When members were responsible for the valuable machinery, negligence in operation and bad maintenance led to rapid deterioration. Replacement, on the other hand, was postponed because members generally voted for wage increases instead of productively enhancing investments.... Parcelization of APCs is seen as an effort to escape a “high-transaction cost” trap.

Dorner and Kanel (1977) stress the difficulty of overcoming these problems:

Even with supportive action of state agencies, primary problems of group farming will be those of effective internal organization and of member commitment and morale. It is a delusion to expect that group farms have such obvious benefits to members or such decisive economic advantages to make it possible to overcome easily the organizational problems. These organizational problems are largely due

to ambiguities in roles of both managers and members of group farms. Members are supposed to be both workers and participants in policymaking; managers are supposed to supervise the workers and at the same time to be responsible to them. (p.8)

As observed by Meyer (1989), slack effort and poor management are the outcomes of role ambiguities and divergent interests of managers and members.

Group farming enterprises tend to experience three generic problems that affect the flow of benefits from the enterprise to beneficiaries: 1) beneficiary demands for immediate consumption needs compete with the capital requirements of the enterprise; 2) problems with incorporating family members into the group farming enterprise (in particular working-age children or spouses of children);⁵ and 3) free ridership (Stanfield and Childress 1989). Performance in the Latin American case has also been affected by external factors including excessive state control, corruption of management agencies, inadequate credit, new taxes imposed on the enterprise, low initial capital endowments, and inadequate land or natural resource base.

After the 1979 Revolution, according to Mayoux (1993), two main categories of cooperatives became central to mobilizing support for the Sandinistas and for controlling scarce resources—credit and service cooperatives (CCS) and production cooperatives (CAS). The CAS (emphasized after 1983) varied widely in collectivization of assets. Most were formed by previously landless laborers. Some were successful, particularly those formed by groups that united in the struggle for land, had preexisting kinship ties, or were bound by strong economies of scale in production or use of technology. However, within several years, the CAS sector had become

⁵ Members with few or no children often oppose the hiring of children or outside workers on grounds that benefits would disproportionately be pulled toward larger families. Incorporating new members from the outside is often resisted, as existing members aware of the limited resources of the enterprise, fear individual benefits will be diluted by the introduction of new entrants. Finally, under typical inheritance rules, only one family member can replace a member upon death or retirement (Stanfield and Childress 1989).

problematic. As early as 1986, one-third of the families (40,000 in 1987 covering 12% of the farmland) had abandoned the cooperative sector and larger cooperatives were riven by inter-community tensions. Many of those with animals or small plots of land were unwilling to give them up to join a cooperative. Thereafter, emphasis shifted to CCS cooperatives. Vaessen, Cortez and Ruben (1999) document the outcome - trends in decollectivization and parcelization - for agricultural production cooperatives in Nicaragua (Region II) between the years 1989 to 1997:

The total area and the number of members have declined significantly. Former members leaving the CAS often took with them a piece of land. Although land titles were often not formalized or recognized, some members were able to sell their parcels informally. Surprisingly, the share of members with family ties did not increase. While members marry other members, and children have the right to succeed their father or mother, the CAS did not evolve into fully extended family enterprises. Probably because of the crisis, children of members started to pursue their fortunes elsewhere. The share of founder members increased, which can be explained by the fact that non-founders were often excluded from the initial collective title. Therefore, while having no claim to collective land and low claims to other collective resources, non-founder members were the first to leave the cooperative. The drastic decline in collective livestock and collective machinery is in line with the overall tendency of decollectivization and parcelization. ...[In] 1997, only 20 percent of the still-existing CAS were involved in any form of collective production. (p. 122)

Although in specific circumstances some CAS continue to operate successfully,⁶ the majority

⁶ The better-endowed (in terms of machinery) and well-organized CAS (in terms of sanctioning and supervision systems) proved the most likely to consolidate their collective production activities, best able to protect members against external conditions, and best guarantee income relative to other contractual agreements available to CAS members. CAS oriented to commercial crop production (cotton) provided better protection than

of cases have shown that, especially in the field of services and access to labor market, the CAS have lost their comparative advantage in relation to other alternatives. Service cooperatives in Nicaragua offer the same potential in terms of services and patronage as the CAS, while not suffering from internal labor discipline problems relative to collective production. (p. 135)

Ongoing Search for New Cooperative Forms

Despite these problems, group ownership models have retained an important position in the agrarian systems of many economies. In some countries within Eastern Europe and the CIS, more than half the land has been transferred from the collective to the private sector, while other countries still lag behind. In Russia, for example, 85 percent of all agricultural land has been privatized, and in Ukraine and Moldova less than 20% of land remains in state ownership. Yet, while the state has relinquished its monopoly on landownership, this “privatized” land is neither owned nor cultivated by individuals.⁷ New landowners are not eager to leave the supportive umbrella of the collective structure and undertake the risks of independent farming. Thus farms tend to reorganize as relatively large units, although with some downsizing. The future of agriculture within the region will be characterized by the coexistence of private farms, restructured cooperatives, commercial farms and part-time subsistence farms (Csaki and Lerman, 1997). The experience in Hungary occurred somewhat differently; while cooperatives were forced to reorganize, they did not experience a substantial loss of members, and most APCs survived (and some prospered) although in

livestock oriented CAS (Vaessen, Cortez and Ruben, 1999)

⁷ For example, reconstitution of collective structures based on individual ownership of land and asset shares, transformation of the collective structure into a joint-stock corporation, division of the collective structure into autonomous profit-oriented entities based on individual investment of land and asset shares and operating within an association or a service cooperative, subdivision of collective entities into family (group) farms, partnerships or production cooperatives, and cooperation of independent entities.

somewhat smaller forms despite harsh market conditions (Toth, Varga and Paarlberg).⁸

In their review of cooperative performance in Honduras and El Salvador, Stanfield and Childress (1989) observed that certain enterprises prospered while others failed. Those that prospered were able to discover innovations that reconciled self-interest with group interests. Innovations included reinforcing family ties through kinship (among smaller cooperatives), maintaining group cohesiveness or homogeneity through place of birth or solidarity (e.g., in the land struggle), presence of strong monetary returns to collective action (through input supply or export market delivery), availability of a technical assistance organization to provide credit, extend knowledge, or provide management; and presence of strong manager, co-manager or management team. To counter free rider problems, successful cooperatives were those that made compensation proportional to labor performed (through effective monitoring of time

⁸ APCs experienced a crisis of reduced earnings, liquidity problems, disrupted market channels, and loss of agricultural subsidies that helped sustain APCs during the socialist period. Following privatization in 1992, only 28 percent of the APCs surveyed remained intact, groups departed in 6% of the cases to form independent economic units, individuals only left the cooperative in 50% of the cases, and in 16% of the cases, cooperatives experienced losses of both individuals and groups. Despite Parliament favoring individual family farming, after years of cooperative farming under socialism, individuals lacked the skills and knowledge to become individual farmers. With the privatization of non-land assets in 1992, members were able to leave the production cooperative and to physically take their shares with them with two detrimental effects—non-land assets designed for large scale operation (machinery) were not appropriate for smaller-sized farmers created by exiting members, while the removal of these assets undermined the efficiency of remaining assets in the APC and increased tensions among members. During the change in ownership, crop land and non-land assets became divorced—some new owners own only land and have no other productive assets, while others have non-land assets, but insufficient land to employ those assets. Leasing arrangements have emerged with mixed success; of the new enterprises surveyed, 78% used the land collectively in 1994, of which 61% is leased from members, 28% from outsiders, and 2 percent from other landlords. New enterprises in effect have become leasee organizations without laws protecting the leasee.

worked), enforcing sanctions on counterproductive behavior (expulsion for repeated absence or violation), and reengineering responsibility from the cooperative to the individual for management of individual land parcels. Of the three problems constraining the viability of group enterprises (above), the free-rider problem has been the most widely resolved.

Even studies critical of cooperative performance have not been willing to do away with collective action altogether. In the Dominican Republic, for example, Meyer (1989) observes that while production cooperatives are wrought with administrative problems and low worker incentive, they nonetheless provide superior vehicles for credit and technical assistance. Further, the intermediate Associative Structure is preferred by Dominican reform beneficiaries, in essence, by privatizing the land and transitioning the cooperative toward provision of credit, input purchasing, marketing and capital equipment. (See also Kumbhar 1979 for a successful experiment with the Gambhira Cooperative Farming Society in Gujarat, India in Box B). Cornista (1992) commenting on the cooperative movement in the Philippines provides a similar history:

Almost all cooperative programs attempted by the government through the years follow a recurring pattern: at first, an upsurge in the establishment of cooperatives with corresponding increases in membership as reaction to government initiatives; then, cooperative activities and membership decline; ultimately, they become inactive. (p. 6)

Box B: Gambhira Cooperative Farming Society (Gujarat, India)

In 1951, government granted 201 acres to 176 cultivators who had lost their land due to river siltation. The land was farmed individually, but few benefits were achieved as the cultivators were poor, lacked resources, and had to obtain water from private plants on a half-share basis. Government in 1953 organized the cultivators into a cooperative farming society based on four principles:

- Only distressed cultivators can become members
- Members had to work in groups
- The group leader (elected) must be a member and has sole responsibility for managing the cultivation of land given to his or her group, and
- 50% of the produce of each group is given to the society as capital and 50% is shared equally among group members to cover labor and production costs.

Group membership grew to 291 members by 1961-62 with the addition of new landless laborers and land provided by government. It was decided in 1960, that no new person should be enrolled as a member until the average size of holding per member becomes 3 acres. Management is vested in a management committee (7 elected and 1 Chairman nominated by the Cooperative Department). The group leader prepares the crop plan in consultation with the Management Committee and Society Chairman. Each member works equal time, and the group leader assigns work as needed (and is paid a bonus in proportion to the productivity of the group.) Besides group leaders, the society appoints three supervisors who prepare daily reports of activities for the Chairman and Manager of the Society. The number of groups operating within the society increased from 17 to 28 in 1976/77, each containing 6-16 members farming 11 to 27 acres. Besides increases in membership and land, groups sometimes subdivided because of group conflict.

The society supplies inputs and provides irrigation facilities and tractor services which are paid for by the 50% share of output (food grains and tobacco) provided by groups to the Society. The Society sells the tobacco crop to obtain good prices from bulk sale. Out of the half share received by the Society, it pays the land tax, input costs, maintains a reserve fund (infrastructure, machinery, repairs, and insurance against acts of God), and redistributes profit to members.

By the time of the study, the Society had uninterruptedly completed 25 years of successful operations by 1977-78. It had been successful in rehabilitating 291 destitute and landless laborers. The incentive scheme implemented had encouraged active participation of its members. The society had done a remarkable job in land reclamation, capital formation, developing its own irrigation infrastructure, intensifying farm operations, improving farm practices, and increasing labor employment. Net profit per acre and income per member have increased dramatically as have individual and Society assets. The society has also contributed mightily to social development.

What has contributed to the Society's success?: (i) enlightened leadership; (ii) efficient management; (iii) multi-stage supervision; (iv) homogeneous group of members; (v) systematic method of work and remuneration; (vi) flexible labor and participatory management; (vii) wise savings strategies and productive investment; and (viii) fertile land.

However, rather than back away from cooperatives altogether, the Philippine government in 1990 passed the Cooperative Code where beneficiaries through stages acquire common or collective ownership of the land.⁹ Unlike previous efforts that have led to cooperative failure, the new program emphasizes participatory planning by beneficiaries in the planning and implementation of activities, continued social and institutional development of beneficiaries and the cooperative's organization, an intention to lessen government interventions that "stifle cooperative initiatives", and the engagement of the private sector in undertaking the actual formation and organization of cooperatives.

Jonakin (1995) presents evidence in Nicaragua that the CAS's studied achieved productivity levels not exceeded by family or private firms. Based on statistical evidence, productivity gains came about as work-based payments increased, and homogeneous origins and wealth endowments of CAS membership contributed to emulative work attitudes. The cooperatives involved were not without problems,¹⁰ but when greater enterprise self-determination was coincident with improved economic performance, CAS members showed considerable ability to deal with attendant problems. These results corroborate the findings of Carter, Melmed-Sanjak and Luz (1993) in Honduras and Nicaragua who demonstrate with caution that APCs do not "intrinsically and irrevocably" negate their usefulness in land reform. According to the authors, in neither country did the APC exhibit inferior economic efficiency compared

with control farms (collectively linked private plots or fully individualized private plots). This finding is particularly salient in commercialized agrarian structures where peasant producers are hampered by problems of access to markets and technology, and have displaced them over time. The authors also encourage a policy of institutional flexibility that enable APCs to evolve toward stable organizational arrangements.

Hope through "New-Generation Cooperatives"

The rise and fall of agricultural cooperatives is not unique to developing countries in Asia and Latin America. Cook and Iliopoulos (1999) describe the growth of marketing cooperatives in the US in response to depressed prices and public policy incentives. During the early 1900's, US farmers, especially those producing perishable products, faced frequent holdups in negotiations with large processing companies. Marketing cooperatives provided farmers with an institutional mechanism to countervail opportunism and holdup situations. By 1982, cooperatives' shares of farm product and input marketings had reached 30 and 28 percent respectively. This trend turned in 1983 when commodity prices fell and farmers became disillusioned with the inability of their cooperatives to provide better prices than their non-cooperative rivals. By 1987, cooperatives' shares of farm product and input marketings had both fallen to 25 percent.

Member-patrons' growing doubts about the efficiency of their cooperatives relative to investor-owned firms (IOFs) were attributed to the high cost of influencing managerial decisions (*the influence problem*). Cook and Iliopoulos (1999) argue that these transaction costs, seldom recognized in the start-up fervor of combating opportunistic monopsonists and monopolists, are the result of inadequate property rights and use the New Institutional Economics (NIE) to explain the underlying causes of inefficiency within traditional cooperatives.

Hendrikse and Veerman (1999) cite cases of leading marketing cooperatives in Ireland and The Netherlands changing their governance structure in the direction of IOFs by issuing some form of equity with proportional benefit and voting rights, or by outright conversion to company status. This is

⁹ Beneficiaries are first organized as an association with assistance of community organizers. When the legal requirements for land transfer are met, the association is transferred into an agrarian reform cooperative; the latter is the recipient of the landownership award (most prototypes have reached this stage). The next steps involve the design of area development plans and sourcing of financial assistance to implement those plans.

¹⁰ The case evidence also pointed toward sources of continued member dissatisfaction and work disincentives. Family related strife, growing in part out of differences in family size, misuse of power and wealth endowments, where present, generated productivity losses. The generally uniform pay scheme and only sporadic piece-rate opportunities meant that workers who would otherwise have desired more work were frequently constrained in their ability to earn additional income.

consistent with the recent birth and proliferation of non-traditional or “new generation” cooperatives in the US (Harris *et al*, 1996). In South Africa, the withdrawal of interest subsidies and other advantages that masked the inefficiencies of cooperatives has also prompted agricultural cooperatives (including the high-profile Cape Winegrowers Cooperative) to reorganize as private or public companies.

These observations support Porter and Scully’s (1987) empirical finding that the source of cooperative inefficiency is not due to allocative inefficiencies arising from the pursuit of alternative objective functions (as argued by many scholars of cooperative theory) but inherent weakness in the structure of property rights within traditional cooperatives. Results of their US study indicate that reorganizing a randomly selected (traditional) fluid-milk processing cooperative as an IOF could increase its output by 32.4 percent - without hiring additional inputs. Tax breaks, interest subsidies and the gratis services of the US Department of Agriculture are keeping some of these inefficient cooperatives in business.

The distinguishing features of property rights within traditional cooperatives can be summarized as follows:

- Returns are proportional to patronage and not to investment. Members are often required to make the same investments (i.e., purchase equal equity shares).
- Shares cannot be traded at their market value. They are repurchased at par value when a member exits the cooperative.
- Voting rights are egalitarian and not proportional to investment.

These property rights reflect the underlying Rochdale principle that cooperative enterprises should be controlled by their members and not by capital. This is quite distinct from an IOF where voting and benefit rights assigned to members (shareholders) are directly proportional to their individual investment, and may be traded at their market value.

Jensen and Meckling (1976), Porter and Scully (1987), Cook and Iliopoulos (1999 and 2000) and Sykuta and Cook (2001) explain the consequences of inadequate property rights adopted by traditional cooperatives in terms of the following problems:

- *The free rider problem* discourages member investment because some of the gains from cooperative accrue to individuals that did not fully invest in developing the gains. These free riders could be non-members who patronize an open cooperative, or new(er) members who acquire the same rights as initial investors without paying the appreciated (i.e., market) price for their shares.
- *The horizon problem* results from residual claims that do not extend as far as the economic life of the underlying asset. Under these conditions, cooperative members tend to under-invest in long-term and intangible assets (such as market research, product promotion and brand loyalty) because they are prevented from realizing capital gains by retiring shares at their market value. Again, new members become free riders as they benefit from past investments without paying fully for them in the form of higher share prices.
- *The portfolio problem*: Cooperative members demand a premium on their investment, or under-invest relative to their IOF counterparts, because the cooperative’s investment portfolio may not reflect the interests or risk attitudes of any given member. Members cannot trade shares at market prices and are therefore unable to diversify or concentrate their own asset portfolios to fully reflect personal risk preferences. This “forced rider” problem is compounded by the cooperative principle of equal voting rights as the portfolio preferred by those members who are willing to risk larger investments in the cooperative is likely to differ from that preferred by a risk-averse majority.
- *The control problem* refers to the cost that members face in monitoring managers to ensure that they make prudent investment decisions and do not shirk or cheat. Although this principal-agent problem is not unique to cooperatives, it is less severe in IOFs where (a) larger investors are able to internalize the benefits of their policing effort (because dividends are proportional to investment), (b) agent performance is clearly signaled by the market/audited value of members’ equity shares, and (c) the agents are shareholders

themselves (and therefore have incentive-compliant employment contracts).

These problems have starved traditional cooperatives of equity capital, reducing their ability to finance investments needed to maintain a competitive edge. Hendrikse and Veerman (2001) further contend that traditional cooperatives are at a disadvantage relative to IOFs when seeking capital from external sources to finance assets that have specific uses. Specific assets increase the financier's exposure to risk, and external financiers can do little to reduce this exposure when transacting with traditional cooperatives because managerial decisions are controlled by members who have equal or near equal voting rights. This *influence problem* tends to raise the cost of external equity and debt capital to finance assets that have specific uses. For this reason, a switch from cooperative to IOF status is predictable when product markets become more differentiated.

In theory, a cooperative business structure that reduces the efficiency-robbing effects of inadequate property rights would require closed membership with equity contributions that are fully transferable, appreciable and in direct proportion to an enforceable level of patronage (Cook and Iliopoulos, 2000). To achieve these objectives without sacrificing the tax, interest and information advantages enjoyed by agricultural cooperatives in the US, new generation cooperatives have substituted fully transferable and appreciable marketing (patronage) agreements for equity shares. Their empirical study shows that these equity substitutes explain a substantial share of the variation in member investments observed in a sample 127 US cooperatives. In Europe and South Africa where deregulation of agriculture eroded similar advantages once enjoyed by farmer cooperatives, the tendency has been for outright conversion from cooperative to company status—despite a relaxation of cooperative laws to permit some proportionality between equity invested, dividends and voting rights.

The NIE analysis of traditional versus new generation cooperatives sheds much needed light on the type of governance institutions that promote efficient use of co-owned resources. These institutions seek to restore the strong incentives generated within a sole proprietorship where there are no free riders. Assigning tradable property

rights that are proportional to individual investment appears to be an important part of this process. However, there are many other institutional factors that affect the performance of group enterprises. For example, the rules governing electoral procedures and financial audits influence the accountability of managers, while the nature of incentive payments to employees influences their work effort. In South Africa, family farms restructured as private companies with workers as co-owners have recorded remarkable improvements in labor productivity thanks to their incentive compatible employment contracts (Eckert *et al*, 1996). While recognizing the many advantages of sole proprietorship, this research project focuses on group ownership models because they represent an unavoidable, significant and flawed pathway to land reform. In particular, the research aims to:

- Identify institutional and organizational practices that constrain the success of group enterprises created by privatization and land reform programs. This exercise will apply the NIE to case studies of existing group enterprises, equity-sharing models in particular.
- Determine best institutional practices that broaden and deepen beneficiaries' access to resources and encourage their productive use.
- Apply these best practices to the design or redesign of one or two equity-sharing enterprises that will be facilitated in each country, and,
- Assess how these organizational and institutional innovations can improve project performance, where performance is measured in terms of financial health, environmental sustainability, and the empowerment of beneficiaries, especially women.

Best Institutional Practices

Returning to the dismal performance of farming cooperatives, Deininger's (1993) assertion that APCs offer no significant economies of scale, introduce severe disincentive effects, have not demonstrated a capacity to produce technical innovations or provide public goods is far from compelling. Certainly there is ample evidence of agricultural production cooperatives challenged from without by poor external conditions or paralyzed from within by internal conflict and weak

individual incentives. Yet, even in instances of cooperative “failures”, a number of countries have not seen it fit to throw the cooperative model out altogether. And while there are few outright cooperative successes in the developing world, there is certainly sufficient evidence to conclude that APCs have an important role to play in the toolkit of land reform policy. But while it is important to carefully consider arguments of efficiency and performance, there is risk of overly discounting one very important observation—there are many instances where group farming endures in face of persistent failures because individualization does not represent a viable, efficiency-enhancing alternative. Our mission then, for better or worse, is

to find solutions to make shared enterprises work better either in terms of improved efficiency, or the adoption of more flexible rules that will enable adaptation to more efficient organizational forms in the future, whether they be state or private.

Conceptual Framework

The research design in Figure 1 summarizes characteristics of organizational and institutional arrangements that, based on previous research, tend to constrain or enable economic growth. The policy environment that conditions incentives, legal certainty, and profitability further shapes the effectiveness of these arrangements.

Figure 1: Expected viability of rural enterprises

		Macro or Meso Policy Environment	
		KR: Constrained policy environment	SA: Enabling policy environment
Organizational and Institutional Arrangements	Sub-optimal arrangements: Large beneficiary group Non transferable shareholdings No external capital Weak accountability Poorly defined property rights Non-proportional income sharing	Unsuccessful	Minimally successful
	Optimal arrangements: Small beneficiary group Transferable shareholdings External capital Strong accountability Well-defined property rights Proportional income sharing	Minimally successful	Successful

In order to determine best institutional practices, 10-12 enterprises will be selected for case study research in each country from a cross-section of enterprises ranging from relatively successful to unsuccessful. This variation is expected to reveal important differences in indicator variables such as financial performance, enterprise type, use of external finance, relative shareholdings of beneficiaries, geographic region, size and gender composition of the beneficiary group, and choice of legal entities and business organization.

BASIS hypothesizes that innovative institutions in flexible policy environments will be the most successful of the institutions analyzed. But what specific combinations of organizational structures, constitutional rules, and operational arrangements are most successful? Analysis of these institutions will identify specific arrangements that positively impact the performance of each enterprise, where performance will be measured in terms of financial health, accountable business practice, investment, environmental sustainability, and empowerment of beneficiaries, especially women.

Case Study Selection

In South Africa, the case study research focused on a population of 21 farm worker equity sharing schemes in Western Cape Province that have been in operation for more than one year. A sub-sample of nine enterprises was selected from this group to ensure variation across a number of easily verifiable indicators: use of external finance, size, gender composition, proportion of equity owned by beneficiaries, and institutional arrangements such as choice of legal entities and business organization (communal property associations, partnerships, trusts, and private companies). In essence, an attempt was made to select enterprises with both good and poor performance spread across a range of observable attributes.

The final selection was challenged by two constraints. First, some managers were not available at the time of the study and, in two cases, the managers refused to participate. The nine enterprises surveyed thus represented a high percentage of the population of enterprises in the Western Cape. Second, an additional problem was discovered at the time of the survey—in most instances, enterprises given their short life span to date were unable to give histories (or even a one-year snapshot) of revenue, earnings or financial ratios. Consideration was given to adding enterprises from other provinces, but equity sharing schemes there are not numerous, and have been around even less time than those in the Western Cape. Researchers also gave consideration to the study of communal property associations. Despite their somewhat checkered history on performance (based largely on anecdotal evidence), they represent an important mechanism for land reform in South Africa and so warrant monitoring and research. The pre-proposal submitted to USAID/Pretoria proposes including this research component with concurrence from the DLA. Despite these constraints, it is felt that the case study histories based on other attributes along with comparative review of literature above will be sufficient to enable a good analysis of best institutional practices and lay the groundwork for enterprise facilitation in the South African case.

The situation in Kyrgyzstan, because it is more fluid, is more difficult to plan and implement. Enterprises continue to splinter, consolidate and adopt new organizational forms with considerable

fluidity and rapidity. In addition, the legal, market and macroeconomic environment in Kyrgyzstan remains both tenuous and hostile to economic growth and the business environment. The workplan in FY03 will continue to have primarily an exploratory and research focus to gain better understanding of these dynamics, and how they impact enterprise viability and restructuring. The team has put in place two research designs, one quantitative (broad based Farm Survey) and the other qualitative (more focused enterprise Case Studies), to help monitor and understand these dynamics. By March 2003, ten case studies will have been undertaken with at least one enterprise studied in each of the following five categories of farming operations: peasant (group) farms, agribusiness processors, collectives, water users associations and farm machinery suppliers. As noted in the above literature review, the very definition of enterprise or association within these categories is somewhat amorphous. However, as in the case of South Africa, the intent in the Case Studies is to identify poor to moderately performing enterprises (it would be an overstatement to say that any are operating well) for purposes of discerning institutional rules and practices that contribute to best lessons or success.

In both South Africa and Kyrgyzstan, in-depth interviews are being conducted with the manager (frequently the previous farm owner), worker-trustees, external financiers, and government officials in the two countries. However, in the case of South Africa, interviews were conducted using a structured, open-ended questionnaire to examine institutional arrangements and their impact on internal rules, practices, management, compliance, incentives, and access to finance. The questionnaires often required respondents to rate their perception of a particular issue using a Likert-type scale with scores ranging from one (excellent) to five (extremely poor). In Kyrgyzstan, the decision was made to use an open-ended questionnaire guided by the same lines of enquiry. It is still too early to assess the strengths and benefits of either approach or country methodology, but a priori, it was felt that the more fixed and transparent rules in the South African case favored a more structured format, while the fluidity of the Kyrgyz case was more amenable to an open-ended, qualitative, narrative approach to gathering data.

In retrospect, it is understandable why the BASIS Board of Directors reviewed our original proposal and concluded that the researchers were biased toward the benefits of equity sharing schemes. This was not our intent—and in fact the use of equity sharing has wide connotations in both countries—but the proposal in retrospect did seem to convey this bias. Indeed, this research is intended in two different policy contexts (South Africa and Kyrgyzstan) to discover institutional mechanisms (from the bottom up) needed to make group enterprises operate more effectively, and features of the meso- and macro policy environment that will help condition the success of these mechanisms. We are thankful that the Board of Directors pushed us hard on exploring the comparative literature for it helped immensely to clarify in our own minds that successes in group farming are possible, that institutional rules and organizational features do matter, and that we are not on the wrong track. The fact that our research is linked with USAID mission strategies and government ministries in both countries has to date helped motivate our research. But now in addition, the comparative review beyond strengthening methodological rigor will help elevate the importance of this research to a global audience.

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INSTITUTIONAL DIMENSIONS OF WATER POLICY REFORM IN SOUTHERN AFRICA:

Addressing Critical Water-Land Intersections in Broadening Access to Key Factors of Production

Global Constraint 2: Unsustainable Use of Degradable Resources



Irrigation canal and field in Malawi
(Photo by Peter Walker)

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PROJECT PROFILE

The project is designed to inform policy on water resource management in southern Africa, particularly decentralized management systems. Water is an exceedingly scarce factor of production. There is increasing competition over its use and control, and Malawi is engaged in reformulating water policy and administrative structures, particularly toward decentralized forms of management. Systems of small-scale wetlands and garden irrigation are increasingly important.

In southern Africa a shift has taken place in water resource management from a supply to a demand-side focus. The terrain has shifted from government provision of services to comprehensive river basin management strategies emphasizing stakeholders, markets, pricing and technology. Malawi's new water policies and legislation reflect these changes, and the goals include alleviating poverty through market liberalization, private enterprise development, demand management and cost recovery, decentralizing natural resource management while increasing stakeholder involvement, and fostering sustainable and efficient use of resources.

The project will evaluate the new policies to identify areas where they may need to be

reconciled, as they were drafted separately from one another and from Malawi's new local government act. The research also will examine the degree to which disadvantaged groups are gaining access to land and water resources and becoming decision-makers in the newly established resource management institutions.

Formal, or government-run, smallholder schemes, most established in the 1960s and 1970s, are scheduled to be transferred to farmers organized into "water user associations." Informal irrigation (a major new focus of government poverty alleviation strategies) involves smallholder cultivation along streambanks and in wetland areas in the dry season. Until the 2002 food shortages, informal irrigation received relatively little government support or attention, although the area covered is estimated to be greater than that in formal smallholder irrigation schemes.

The project positions BASIS as a key contributor to policies in the nexus where water, land, wetlands, decentralization and irrigation intersect. It also contributes to the Government of Malawi's recent focus on winter cultivation of wetland areas as a means to increase smallholder food security.



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I. ACTIVITIES 2001-02

A. Accomplishments

International donors and other organizations have developed the approaches now being promoted as the basis for water and irrigation reform in Malawi, Zimbabwe and other African countries. Key elements are (a) removal of subsidies and institution of pricing and other regulatory measures to limit the demand for water and to channel its use to the most productive economic sectors, (b) promotion of decentralized management with greater stakeholder participation and responsibilities, (c) adoption of an integrated approach to water management both ecologically as well as across economic sectors and ministries, (d) recognition and protection of the rights of the environment itself to water, and (e) promotion of increased social equity.

In short, in the water sector the terrain has shifted from government provision of services to users to comprehensive river basin management strategies emphasizing markets, pricing and technology to promote water use efficiency, recover costs and conserve the resource. These approaches have been adopted in both Malawi and Zimbabwe, but varying economic and social circumstances at the national and local levels make it unlikely that similar reforms will take the same shape once implemented in different contexts.

BASIS tracks implementation of these reforms in order to examine how national and local social structures and power relations shape implementation of the reforms, and hence function to limit or promote access to water and to new water institutions among disadvantaged groups. A second focus of our research is to keep abreast of the evolving policy context (via policy documents) on the international level as donors and other organizations revise and update their approaches to land and water resources.

To study the intersection of land and water reform in Zimbabwe and Malawi, two types of field sites were selected: **formal irrigation**, which takes place on government-run schemes and commercial farms designated for resettlement, and **informal irrigation**, which occurs along streambanks and in wetlands in Malawi and Zimbabwe. While formal irrigation schemes have captured most of the focus

in the literature, wetland and streambank cultivation are widely practiced in both countries and are a major source of smallholder food and cash earnings in the form of vegetable production, smallholder tobacco and seed nurseries. Thus, these are among the most valuable agricultural lands in communal/customary areas, although their cultivation is technically illegal. These lands see increasing conflict as they are claimed for different purposes by often competing interests as protected wetland areas, areas of livestock grazing, and agricultural production. BASIS focuses on how changing access to water and land brought about by the new reforms affect access to and management of these formal and informal irrigation sites.

(Note: A variety of issues were raised about this BASIS project. After extensive discussion with the researchers, requests for revisions to the scope of work, and evaluations by the External Evaluation Panel (with input from the Board of Directors, the Technical Committee, and USAID), BASIS decided not to extend the Zimbabwe portion of the project after the first year. This section, therefore, summarizes that one year of work in Zimbabwe, as well as the continuing work in Malawi.)

1. Zimbabwe

1.1 Policy Liaison, Workshops, and Training

- Held discussions with the Zimbabwe National Water Authority (ZINWA), Department of Water Development, and three catchment managers. Researchers met with USAID/Harare, the Ministry of Rural Resources and Water Development, WARFSA, WaterNet, the chair of the catchment councils, and the chiefs in the research areas.
- BASIS presentations at the International Association for the Study of Common Property in June 2002 were attended by the Chair of the Zimbabwe Parliamentary Committee on Lands, Agriculture, Water Development, Rural Resources and Resettlement, who served as a discussant. The other discussant was Zeb Muringweni, a retired engineer and one of the major authors of the new Water Act.
- Francis Gonese attended the July 2002 Workshop on Lands, Agriculture, Water

- Development, Rural Resources and Resettlement 2003 Budget Proposals, Harare. He participated in the evaluation of 2003 budgetary estimates expenditure and facilitated discussion and documentation of suggestions and recommendations.
- Bill Derman and Gonese informally visited the new Permanent Secretary for the Ministry of Rural Resources and Water Development to inform him of the research and BASIS's wish to participate in the study of water reform and irrigation. He informed us of the latest developments in the Ministry, with particular respect to irrigation.
 - Centre for Applied Social Sciences (CASS) partners participated in the CASS/Programme of Land and Agrarian Studies of the University of Western Cape (PLAAS) regional workshop on natural resources management in southern Africa, Maputo, Mozambique, October 2001. This important linkage is funded by the Ford Foundation.
 - Researchers participated in the WaterNet module writing workshop on socioeconomic issues in water resources management, Zomba, Malawi, April 2002 and the WaterNet module writing workshop on legal and institutional issues in water resources management, Johannesburg, March 2002. WaterNet is an interdisciplinary regional network grouping practitioners, policymakers and academics involved in all dimensions of water management.
 - CASS partners attended the workshop on water demand management sponsored by the Institute of Water and Sanitation Development, reporting on studies carried out by the International Union for the Conservation of Nature (IUCN). CASS is a member of IUCN.
 - BASIS team attended a meeting to form an association of catchment councils, organized with the support of the Royal Netherlands Embassy.
 - Claudious Chikozho completed three more chapters in his thesis, and his application to upgrade his Master's to a Doctorate at the University of Zimbabwe has been approved by CASS and is awaiting a decision by the Faculty Higher Degrees Committee.
 - Jim Latham completed the first draft of his doctoral thesis on holistic natural resource management in Guruve Communal Land.
 - Steve Mandivengerei is writing his Master's proposal on the Runde Catchment to become a graduate student in CASS. He visited Masvingo where he was exploring water development. He carried out a baseline survey in Chadehumbe Village in the Runde Catchment to assist in formulating his proposal under the supervision of Gonese.

1.2 Surveys, Interviews and other Research Instruments

- Updated surveys in the Mazowe and Manyame catchments of water users' attitudes and knowledge of the water reform. This was funded in part through WARFSA.
- Created a new research instrument on "Informal Irrigation of Wetlands—Sites of Intense Cultivation and/or Hand Irrigation During the Dry Season." This instrument is being used in three villages in the Lower Manyame Subcatchment and will be extended to all catchments. The survey has been revised and will be used in the three catchments. We shifted our studies to include former commercial farms rather than just communal areas.
- Worked on new village profiles and water resources mapping at our new sites.
- Completed and entered into SPSS 521 interviews from last year's survey. Following the reentry of unique identifiers for each interview we hired a student at CASS, August Masomera, to resume the analysis.
- Researchers carried out interviews with leaders at the Catchment and Subcatchment Council levels to obtain their views on how water reform is and is not working and the major issues.

2. Malawi

2.1 Review of Policy Context, Key Informant Interviews, Document Collection

Sites: Zomba District, Lake Chilwa Catchment, Southern Region.

Malawi has recently revised most of its environmental and agricultural policies and laws redefining ownership, use and management of its resource base. Malawi's water policy has been

approved by Parliament, but the new Water Law has yet to be enacted. The policy and draft law contain contradictions regarding stipulations for water permits, stakeholder participation and the composition and functioning of new water management institutions. We are following the debates that take place to resolve these issues and, where possible, providing recommendations to the Ministry of Water Development based on our research findings. In 2000, the government enacted a new Irrigation Policy. The new land policy and law are in the final stages of review and approval. We are examining these policies' implications for broadening access to and voice in management in the formal and informal irrigation schemes we have selected for research.

Meetings and key informant interviews were carried out at the national and district levels. At the national level, we met and interviewed:

- Minister of Water Development twice, and were invited to participate in a workshop on water demand management sponsored by IUCN,
- Acting Deputy Director of the Irrigation Department and the head of the IFAD project to discuss the new irrigation policy and progress in rehabilitating the government run smallholder irrigation schemes and their transfer to farmers,
- Deputy to the Permanent Secretary of the Ministry of Housing and Lands to introduce her to BASIS research objectives and to obtain a copy of the Malawi's new land policy (released in December 2001),
- USAID Agricultural Officer on two occasions to update him on BASIS research and to gain a better understanding of the policy and program directions of USAID Malawi.

In Zomba and Machinga Districts we met and interviewed:

- heads of the Zomba and Machinga Agricultural Development Districts (ADD) and Rural Development Programs (RDP) in charge of the Likangala and Domasi Irrigation Schemes to introduce the BASIS project, seek permission to carry out research on the schemes and to gather information on current progress on renovation and handover,
- Domasi and Likangala Irrigation Scheme managers to introduce them to the BASIS research objectives, seek permission to have field

assistants reside on the schemes and to interview them on the scheme handover process,

- Zomba District Commissioner and other local government officials.

In September 2001, we sponsored a research stakeholders meeting attended by the Zomba District Commissioner, officials from the Zomba ADD and RDP and the Irrigation Department, the Irrigation Scheme Managers, the Minister of Parliament for the area, and personnel from the Ministry of Water Development.

In addition to these meetings and key informant interviews, we obtained needed documents and reports on formal and informal irrigation and land reform in Malawi. Most of these are difficult to find "gray" literature—project proposals and reports from various donors and consultants on irrigation and land reform issues in Malawi. We also were in contact with the International Institute of Water Management (IWMI) in South Africa to obtain recent studies of irrigation reform and handover in the African context.

2.2 Formal Irrigation

Sites: Villages along the Domasi, Likangala and Naisi Rivers in the Lake Chilwa Catchment.

Malawi's new irrigation policy calls for existing government-run irrigation schemes (most of which are in a state of collapse) to be renovated and turned over to users. This strategy reflects the conjunction of government's lack of resources to maintain these schemes and the new philosophies of stakeholder participation and local ownership of resources promoted by international environmental and donor organizations. In the Lake Chilwa Catchment, the Domasi Irrigation Scheme is undergoing renovation with support from IFAD. The scheme produces rice. We are examining how the new land and water reform policies will affect rights to and uses of these resources on the scheme, focusing on how scheme residents negotiate rights of access and use in the new institutional setting.

In mid-2001, the Malawi team members met with officers of the Likangala Irrigation Scheme and observed a meeting of current irrigators, called to discuss the changes envisaged by the Government of Malawi. Since the shift from a Government-run scheme to one that is to be handed over to the irrigators themselves is in process, the researchers

focused on fundamental organizational and institutional activities in the first year.

Questions and activities for the first year included:

1. What farmers' organizations are set up to manage irrigation? What are the processes for forming these organizations? Who initiates the processes? Who are designated members?
2. How are these new organizations related to the current set of irrigators who reportedly (from an initial inquiry in late 2001) include both registered plot holders and others (borrowing or renting from holders)?



In Malawi, formal, Government-run irrigation schemes are being turned over to the irrigators. BASIS examines the emerging institutions that now have responsibility for irrigation. The research also targets the small gardens along streambeds and in wetlands—*dimbas* and *dambos*—that are an important source of income and food for many people. Such “informal” irrigation is technically illegal, yet these areas are extremely valuable and prone to conflicting ways of use. BASIS will help create a more complete picture of informal irrigation in Malawi.

(Photo by Pauline Peters.)

3. What is the role of the Government Scheme officers (who are still in place) in the transition to a farmer-managed scheme?
4. What forms of management for the scheme are formed by the new farmers' organization and how do they differ (or not) from the previous Government-run scheme rules?
5. Interviews with a sample of irrigators and ongoing observation will seek to establish the relative importance of irrigation plots in their

family and individual strategies of labor allocation, income, food supply, and the manner in which management of the scheme shifts to the farmers.

Two BASIS research assistants are stationed on the irrigation schemes (one at Domasi and one at Likangala) and carry out daily observations and key informant and other interviews designed to address the above questions. Mulwafu and Nkhoma met frequently with the research assistants at the schemes and held monthly meetings where research results and directions were discussed. Based on the literature review and the field assistant reports, a draft baseline farmer survey was developed in July and circulated to researchers for comments and revision. The survey was translated into Chichewa and pre-tested. It was administered in November/December 2001, when scheme plot holders returned to their regular plots after the winter season rotation.

2.3 Informal Irrigation: Streambank and Wetland Cultivation

Sites: *Dimba* and cultivated *dambo* areas in the Chilwa Basin, particularly along the Likangala and Domasi Rivers.

While the government has turned to small-scale irrigation schemes as a significant part of its plans to improve agricultural productivity, food production and farmers' income, there is a dismaying silence about an existing pattern of what we call here “informal” irrigation. By this, we refer to the use of gardens made in the dry season along streams and in wetland areas. In Malawi the gardens along streams are called *dimbas*; the gardens in wetland areas are *dambos*. There is a dearth of information on these at a national level and of detailed investigation of their use in particular sites throughout the country. Studies conducted by Peters since 1986-87 in the land-pressured areas of the Shire Highlands near the BASIS research sites have documented the significance of *dimbas* in farmers' income and food strategies. The garden sites are valuable and highly desired but only one-third of Peters' sample of families had access to them. This relative scarcity appears to be increasing as a result of several processes. First is the general increase in population

and pressure on existing resources, even though there is net-migration from these research villages to other parts of Malawi. Second, the streambed gardens are especially valuable for the production of vegetables for which urban and peri-urban demand from neighboring towns has been increasing over the past few decades. Third, the opening of burley tobacco growing to smallholder farmers since 1990 led to a new demand on streambed gardens. One result has been the rise in incidence of borrowing/lending and of renting *dimba* gardens (the terms used range from “loan” to “rent” for transfers involving an exchange of money and/or crops), and the increase in the amounts of money exchanged.

In light of the above, the first year’s research included: (a) documenting the relative significance of *dimba* gardens in the two river basins selected as sites, (b) analyzing the types of rights claimed over such gardens, and (c) creating a baseline for monitoring the effects on the rights and use of these valuable resources as the new land and water policy measures are put in place.

A census was taken to obtain estimate of the number of *dimba* gardens and users and their geographic locations in the two river valleys. Based on the census, a selection of a sample of gardens and users was made according to these criteria: (a) proximity to the formal irrigation sites to identify whether different categories of farmers use riverine gardens and formal irrigation (for example, by level of assets including dryland fields, non-agricultural sources of income, gender, age, etc), and (b) distribution along the rivers.

Sampled garden users are being interviewed and observed regularly over time to document: (a) types of claims/rights over the gardens—how and when they were obtained, (b) patterns of use—types of crops grown, labor use, disposition of the crops and income, and (c) collection of dispute cases—where conflicts over rightful use of gardens can provide a window on the types of rights claimed since “informal” rights are not articulated except in cases of dispute.

On the basis of the above methods and any existing data, the project plans to provide an estimate of the relative significance of gardens for food production and income, and to describe the pattern of availability and use over the past decade or more.

These activities establish the baseline necessary to identify the effects of the new land and water policy implementation. The most critical question here is how *dimba* gardens are to be treated by the new policies, laws and legislation. At present, streambed *dimba* are treated by residents in an area close to the research sites as family property and are passed on in the same way as dryland fields (in this area, according to matrilineal principles), despite the fact that all land is legally designated as under “customary” tenure. However, under existing legislation carried forward from colonial times, streambed gardens are technically illegal, although in the research area, at least, such a provision has never been enforced. Finally, the streambeds themselves and the waters are treated either as common property or as open access, although legally state property. Research completed under BASIS I identified sand-mining and gravel removal from streambeds as activities important as income sources for local people but as initiated by outsiders, mostly business people from the urban areas near the sites. There is a lack of clarity about the conditions under which such people use the river resources—some users refer to licenses given by the District or Town authorities, others merely say they asked no one for permission.

This research began in July/August as winter season gardens are planted at that point in time. In early July, one field assistant was stationed along the Likangala River in an area where there are numerous streambank and wetland gardens. He collected information on ownership and access to *dimba* gardens along the river and on land conflicts over them.

As noted earlier, food shortages appear to have resulted in opening up of new wetland areas for cultivation, more intensive use of existing gardens and land claims and disputes. A reconnaissance carried out by Anne Ferguson of winter gardens and wetland use in other areas of the southern and central region supports these findings.

B. Problems and Issues

Many key donors withdrew or reduced assistance during 2001-02 due to alleged corruption and failure of the Malawi government to comply with IMF and World Bank policy mandates. Malawi’s economy continues to deteriorate as revenues from tobacco sales slide. Poor weather conditions

(droughts and floods) contributed to a shortfall in maize production during the 2001-02 growing season. The food shortage was made worse by the sale of the strategic grain reserves to Kenya early in 2002. As a result, government has made little on the ground progress in implementing the new water policy or the local government policy and law. The DANIDA Lake Chliwa Wetlands Project was the major supporter of the Lake Chilwa Basin Management Authority. When DANIDA withdrew from Malawi in early 2002, funds slated for the development of the Management Authority plus funding for small-scale irrigation and for local government capacity building in natural resources management came to a virtual halt. Zomba Municipal and District Assemblies met only once and briefly, again due to lack of funds. The District Executive Committee continues to hold occasional meetings but little progress is being made in the area of water reform locally at this point in time. Grace Chilima and Mulwafu continued to meet regularly with the District Commissioner to update him on the progress of our research in Zomba district.

C. Collaboration

The teams in Zimbabwe and Malawi have engaged in collaborative meetings and exchange of information with WARFSA and IUCN, and have been successful in obtaining parallel funding for BASIS-related research, permitting us to expand our support for graduate students beyond that possible under BASIS funding. This year we added one BASIS fellow as part of the Zimbabwe team. Ferguson and Gonese served on the selection committee. We also collaborated with WaterNet and the IWMI office in South Africa by discussing our research findings at workshops sponsored by these organizations and in one-on-one meetings with personnel from these groups.

D. Key Findings

1. Zimbabwe

The CASS BASIS research team presented its findings and results to multiple international and regional audiences through presentations, lectures and writings. We presented our views in Catchment and Subcatchment Councils. We postponed this year's Stakeholder Workshop due to delays in

resuming fieldwork. Some of our views on the links between land and water reform are not welcome due to the highly politicized nature of land policy. Most documentation of the current state of land reform virtually no attention has been paid to the importance of irrigation on large-scale farms and the complicated systems of water management (including dam building and maintenance) that characterized these farms.

1.1 Household Surveys

A new survey was carried out partly under the auspices of WARFSA to assess knowledge of the water reform process, local water management institutions, willingness to pay for water and other related issues. Data analysis is currently under way. The older household survey has just been restored and will be more fully analyzed in terms of the relationships between wealth status, investments in water, kinds of water sources, local capacity to manage water, etc. We will be able to compare subcatchments rather than the very large unit of catchments. Surveys were carried out where there were active dissemination campaigns and other areas where there was none.

We have been carrying out a village and household study of garden and wetland cultivation in order to find out how important irrigated gardens are to rural livelihood strategies. In interviewing 12 households in two villages we found that virtually everyone has a garden. There is concern that the shallow wells that provide the bulk of the water will run dry in September. Villages have boreholes but these are not permitted to be used for irrigating gardens and are restricted for home domestic use. In a number of interviews, men and women considered garden income crucial for keeping children in school and for purchasing clothes for them. Garden income supplements sale of maize or cotton, and takes on even greater importance in a drought year. Poorer households, especially female-headed, have had difficulty obtaining money for seeds. In addition, households without cattle have difficulty obtaining manure for their gardens.

We completed a draft instrument, a semi-structured interview schedule for new settlers. There are two formal types of resettlement: the A1 model is approximately 5 hectares of arable land, .5 hectares for the house and homestead and grazing areas. This is the classical model used by the Government since 1980. The A2 model is either 20 or 40

hectares of land for cultivation. We focus on how the settlers deal with water for domestic use and agriculture.

1.2 Institutional and Policy Review Findings

At the national level, the shift from a government funded and operated water sector to a new user-funded parastatal under the current economic context, donor withdrawal and land invasions has become increasingly problematic. The complex funding arrangements for ZINWA will be difficult to achieve since the major payers for water had been commercial farmers. Those commercial farmers still on their farms are reluctant to pay for water since they are not sure if they will be able to continue their agricultural activities. ZINWA is now engaged in informing new settlers that they will have to pay for water used for commercial purposes. In interviews with water bailiffs in two catchments they expressed difficulties in collecting water use measurements and payments.

At the Catchment and Subcatchment levels there had been the expectation that a Water Fund would be in place to fund Catchment Councils. This has been put in place but monies have not yet been allocated. Subcatchment Councils are to collect their own levies and this has been working only in a few subcatchments. It will not work in those subcatchments without commercial water users. In short, the rapid land reform has jeopardized the activities of the new stakeholder institutions.

There is also disagreement about paying for water. In interviews with Chiefs and headmen they assert the notion that water is everyone's right to use without interference. In addition, the new settlers have many difficulties in finding resources to obtain necessary inputs. For them to be able to pay for water immediately will be difficult. In addition, few settlers are aware of ZINWA, Catchment Councils, etc. Commercial farmers have little incentive to meet their bills under the current conditions of insecurity.

More broadly, ZINWA's role, responsibilities and operational framework are largely ill understood by both Catchment and Subcatchment councils, and client water users—especially regarding levies, budgets or finances in general. To many observers the Authority simply represents a reconstituted top-down state bureaucracy expanded to operate at each of the seven Catchments instead of the old

Provincial Offices headed by Provincial Water Engineers.

The institutional difficulties have been multiplied by the withdrawal of donor funding for the various Catchment Councils. The Mazowe and the Manyame Councils were funded by GTZ, and the Sanyati Council by the Royal Netherlands Embassy. Only the Dutch remain in place since ZINWA was supposed to have taken over by now. To address issues of sustainability, organization, and relations with ZINWA the idea that a Catchment Council Association should be formed has been mooted.

Funding delays and the slowing down of Catchment business in general has led to only few permits being issued and Catchment plans to be delayed. The only plan to be completed is for the Mazowe. The one for the Sanyati is in process while the Manyame and Runde are further delayed. In order for Catchment Councils to receive permission to issue permits, they need their Catchment Plans to be approved by ZINWA and the Minister of Rural Resources and Water Development.

1.3 Equity and Access

The setting of levy rates at the Subcatchment level will produce conflict between those with permits and those who want to continue broader representation at the Subcatchment Council level. Those who pay for permits may not want to subsidize those Subcatchments without permit holders and therefore no means for paying for meetings. Here the cooperation between smaller-scale black farmers and their developmental needs conflict with large-scale farmers seeking to lower or minimize their costs. In addition, there are significant equity issues. There are many Subcatchment Councils that have little or no permit/rights holders and therefore no sources of revenue to permit them to hold meetings. Currently donors are funding them. This question will have to be resolved at the Catchment Council and ZINWA levels to ensure greater participation by those in subcatchments without revenue sources.

The Water Act specifies nine defined stakeholder categories who are to be represented on Subcatchment Councils: large-scale commercial farmers, indigenous large scale commercial farmers, small-scale commercial farmers, communal farmers, resettlement farmers, large-scale miners, small-scale miners, industrial, urban

authorities, and any other identified by Catchment Council. These categories were defined by the Act and the stakeholder representatives are expected to participate in Catchment and Subcatchment Council business in terms of the functions stipulated for these institutions under the Act. Some of the specified stakeholder sectors/categories have been either passive or uninterested participants in the process, attending Council business only when their specific interests are at stake—particularly when under threat—or out of call of duty even though they might not effect any meaningful participation. In the absence of most commercial farmers it is unclear how the agendas will be changed.

One of the objectives of the water reform was to remove the Priority Date System (first in, last out) as a basis for water allocation. There were many discussions over the past three years as to how best replace this allocation system. To date, no Statutory Instrument has been put in place to allocate water. It seemed that there had been acceptance of the Mazowe Catchment's version of proportional allocation. However, that kind of system requires very detailed and accurate hydrological information which does not exist for either the Manyame or Sanyati Catchments. It is unclear how this issue will be resolved given much greater uncertainty surrounding water use. This issue will become very important if, as predicted, there is a drought. After several years of reasonable rainfall it remains unclear how a drought will be handled and how principles of equity and access will be sustained.

While greater access has been introduced, policies have not been introduced to insure greater access and equity for women. For example, women or rural women could have been introduced as one of the key stakeholders, thereby insuring their representation but this has not been done.

1.4 Gender Dimensions of Water Reform

Representation on the Catchment Councils is by economic sector. To date, in our study areas, few women have been selected to serve on these councils. Those that have are older and/or widowed, a social status which permits women greater freedom of movement and public voice. Observations at Catchment Council meetings and review of notes from other meetings suggest that male sectoral representatives rarely make reference to women's water-related needs. Observations and interviews at the Sub-Catchment level in communal

Key Findings

Policy considerations—Zimbabwe

1. *Create a deliberate strategy* for resource mobilization and allocation that strengthens the water management institutions' capacity to effectively implement the reform process. Dependence on large-scale farmers has been put into doubt along with donor funding. Alternative resources need to be found to sustain the stakeholder participation process. This will need to be emphasized by a government that is giving away land. It will not be an easy task. To achieve a capital resource base that can effectively sustain the reforms envisaged in the Act, it is essential to broaden and reinforce the financial base within the process itself, particularly through engendering stakeholder ownership of it and facilitating greater private sector funding.
2. *Rationalize boundaries* in terms of water management and administrative and political functions so as to minimize conflicting accountability among stakeholders and reform support institutions. While the new boundaries are designed to be based on watersheds, compromises will need to be made with preexisting administrative and political boundaries to enroll policymakers in the reform process.
3. *Intensify training and education* of Catchment Council and Subcatchment Councilors to insure that they know the legal frameworks in which they work and the technical dimensions of issuing permits and collecting monies.
4. Help ZINWA become more transparent and responsive. This will generate local-level support, which in turn will make ZINWA a more effective institution. To date it seems to be reproducing an older style of centralized management rather than what was intended by the architects of water reform.
5. *Review pricing strategies* of national and local water management institutions in order to make it possible for new farmers to enter into the previously designed permitting system.

areas indicate that women's opinions are often not polled at meetings where water reforms are discussed. The new SADC protocol which recommends a 30% representation by women on policymaking bodies might provide leverage to improve women's representation.

1.5 Irrigation

In many instances the irrigation systems are resettled commercial farms are not maintained. This can be for a variety of reasons including theft of irrigation equipment, destruction or sale of equipment, or inexperience in operating it. In some instances the irrigation is being carried out.

In interviews with Catchment Council leaders and water bailiffs we are finding that those who are continuing irrigation or new farmers who have taken over an entire commercial farm do not know about water permits and payments. This process of enrolling new settlers in the reform process will be a major challenge to the stakeholder institutions. It will also be a challenge for ZINWA to convince stakeholders that they are providing important services.

2. Malawi

The following preliminary findings provide a basis for further, more structured or in-depth research during 2002-03. They are drawn from a review of policy documents and other material, key informant interviews, and fieldnotes. Analysis and write up are not yet complete.

2.1 Formal Irrigation—The Handover of the Government Run Smallholder Irrigation Schemes in Malawi

Field assistants' discussions with farmers and key informant interviews with the Scheme Managers suggest that the proposed transfer of the irrigation schemes to farmers ignited lingering land disputes on both the Domasi and the Likangala schemes. At the Likangala scheme, for example, farmers from one of the surrounding villages "invaded" sections of the scheme, chasing away the current users, many of whom are town residents. The village headman and the farmers claim that this area originally belonged to them and they are reclaiming it because their children have no land to farm. At the Domasi scheme a similar issue has arisen as traditional authorities take advantage of the scheme transfer to reassert their rights over what was once

customary land. The tenure status of the irrigation schemes under the new land policy is ambiguous. It appears at the schemes will remain government land but that leases will be granted to user groups.

When the schemes were established, the intent was to provide smallholder farmers with access to irrigated plots for food and cash crop production (mostly rice). Villagers whose lands were taken to establish the schemes were given plots to farm. Most scheme farmers thus were local residents. Although sale of plots is technically not permitted, over time various renting and lending practices have resulted in town dwellers and other outsiders gaining access to plots, and the increasing concentration of land in the hands of a few (original settlers, outsiders and scheme management personnel). Some "farmers" reportedly have more than 20 plots. At the same time that land concentration has occurred, it appears that a similar process of fragmentation has been underway as parents leave plots (or portions of plots) to their children or rent them out to other farmers. At this point, it appears that the schemes will be handed over to the present users with little attention paid to this issue of land concentration or fragmentation—in other words, there appears to be no effort to redistribute land on the schemes prior to the handover.

The physical rehabilitation of the schemes is underway but has provoked accusations of corruption and theft of materials. Work has been slowed due to the weather, theft of cement and other materials, shoddy work by contractors, unwillingness of farmers to participate in the physical work of rehabilitation when they were given little voice in design, and lack of agreement on the parts of farmers, scheme management committees and government/donors about what actually should be rehabilitated. The Domasi scheme was to be handed over to farmers in June but they have refused to accept it in the state it is in.

Fieldnotes and farmer interviews indicate that many farmers depend on "informal" credit sources to purchase inputs and seeds. People from town and from the irrigation scheme management reportedly lend farmers cash for inputs which is repaid at harvest in bags of rice worth two or three times the loan. Farmer clubs have been established but apparently have failed to work. This year, the hunger many people experienced in the January-

March period lead to widespread borrowing of food and money, again with high interest rates. The issue of credit will need considerable study. In particular, we will need to determine what plans and training have taken place related to sourcing inputs in the handover process.

Farmers at Domasi Scheme have rice processing equipment donated by the Chinese and are able to sell dehulled rice at a higher price. It appears that they also are successful at marketing collectively to

2.2 Informal Irrigation—Streambank and Dambo Cultivation

The majority of this research took place in August and September. Observations indicate that streambank and wetland gardens are being intensively cultivated this year, in part due to the food shortages. In these small gardens, farmers are planting maize, beans, rice and a wide assortment of vegetables for consumption and sale. Along



A river changes course. When a river changes its course, some plots that once were on one side are now on the opposite bank, blocking access to water for plots that had bordered the river. Land alongside rivers and streams is highly sought after by smallholders, who often have different and incompatible ways of using the land. In Zimbabwe and Malawi, where policies governing land, water, and irrigation are being decentralized, there can exist overlapping and conflicting rights. BASIS documents the uses and systems of rights in both formal and informal irrigation sites.

(Photo by Bill Derman.)

private traders. At Likangala, in contrast, farmers are being offered low prices for rice this year by private traders and by ADMARC. Many are not able to wait to sell until the prices rise later in the season because they have loans they must repay. IFAD, the donor assisting with the renovations of the Domasi scheme, has contracted with the NGO Concern Universal to train and empower farmers to run the scheme on their own.

streambanks, most watering is done by hand using watering cans. In *dambos*, shallow wells are dug and watering cans are used to irrigate the crops. In the one area along the Likangala River surveyed by the field assistant in July, almost half of the plot owners were related to the village headman. In this area, a land dispute over streambank gardens was underway caused by a change in the course of the river. As the BASIS I research described, the Likangala riverbed is highly silted, causing the

river to flood and sometimes to change its course. As a result of this process, some owners of streambank gardens have found their plots literally transported to another village on the opposite side of the river, where they block off other farmers' access to streambank gardens. Some of these disputes have apparently laid dormant for years until developments like land reform and food shortages provoke people to take action to claim their lands.

2.3 National Applications

The new Irrigation Policy and the new Land Policy do not recognize the matrilineal and matrilineal descent and residence patterns practiced in parts of southern and central Malawi. Instead of taking actual practice into account, they contain generic "boiler plate" statements about the importance of considering women—statements which overlook actual ways in which inheritance is practiced in these areas and which fail to examine how policies might be written to strengthen women's access to land and other resources. The gender clauses of these new policies are examples of the totalizing, global dimensions of reform processes inspired by internationally derived rhetoric. These statements may well result in further marginalization of women's rights.

E. Capacity Building

The BASIS Malawi project supports two M.A./M.S. level graduate students at Chancellor

College, University of Malawi. Grace Chilima, who had registered for a Master's degree in Environmental Economics, resigned in July. She took courses in the Department of Economics as part of her training until February 2002. In August, we advertised for a new graduate student in the social sciences or economics. Bryson Nkhoma, a junior instructor on leave from at Mzuzu University, is enrolled in a Master's degree program in Environmental History. He is making good progress and is planning to focus his research on the history of irrigation in Malawi. University capacity building is extremely important in Malawi where AIDS has taken a large toll of university personnel at all levels.

The project also employs three field assistants: one living at Domasi Irrigation Scheme, another at Likangala Irrigation Scheme and the third along the Likangala River at a site where there are many *dimba* gardens and wetland areas under cultivation. One field assistant passed away in February from AIDS. The three field assistants receive periodic training in participant observation techniques, field note taking and report writing.

BASIS researchers in Malawi hold monthly meetings throughout the year with field assistants and graduate students with the aim of promoting interaction on observations in the research area. Field assistants share their experiences with BASIS researchers and the latter provide updates on the status of the research.

II. WORKPLAN 2002-03

A. Research Plan

1. What are the implications of the disjunctions across the new water, irrigation and land policies for improving smallholders' access to and use of irrigated lands?
2. Are newly enacted land, water and irrigation policies broadening disadvantaged groups' access to land, water and other resources needed in formal and informal irrigation?
3. Do newly established water users associations on formal irrigation schemes incorporate the voices and views of poor farmers and other marginalized groups? In Malawi, the new irrigation policy specifically mentions women and encourages their participation in the process of transfer of irrigation schemes. Does the policy statement get translated into action? How might the research findings provide information and techniques to ensure more adequate representation of women in the "formal" schemes?
4. Until very recently, as noted, the economic importance of informal irrigation (in wetlands and along stream banks) has been neglected by government and donors. The documentation of their contribution to livelihoods, in comparison with formal irrigation and the dominant dry-land farming, will provide information to inform decision-making.
5. The current situation for use rights on wetlands is one of overlapping types of claim (including "customary" tenure, family-held property, and government-issued licenses) as well as de facto situations of partial open access. The research will provide information and analysis to help guide more appropriate tenure and property rights over these resources.

The above questions/issues will be addressed by focusing on the Likangala and Domasi watersheds in southern Malawi which form part of the greater Lake Chilwa Basin. We will carry out a baseline study of two smallholder irrigation schemes—the Domasi and the Likangala—that have been designated for renovation and handover to the users as part of the new irrigation policy. We also will document the significance of streambed gardens (*dimba*) located adjacent to the irrigation schemes

for farmers' income and food strategies with particular attention to how tenurial security on these lands can be improved within the context of Malawi's land, water, and irrigation policies.

We shall continue to follow the evolving policy context related to land, water and irrigation reform. Continuing the practices established under BASIS I, the researchers will have regular meetings with key actors, including the Zomba District Commissioner, members of the District Assembly, District technical officers, particularly those in charge of irrigation, and relevant NGOs and citizen groups. Periodic meetings will be held with policymakers at the national level in the Ministries of Agriculture and Irrigation, Water Development, and Lands, as well as with USAID and other donors.

B. Policy and Institutional Reform

Malawi has recently revised most of its environmental and agricultural policies and laws, thus redefining ownership, use and management of its resource base. The Water Policy has been approved by Parliament, but the new Water Law has yet to be enacted. The policy and draft law contain contradictions regarding stipulations for water permits, stakeholder participation and the composition and functioning of new water management institutions. Researchers will follow all debates and actions concerning these issues and, where possible, provide recommendations based on our research findings to the relevant Ministries and other agents. In 2000, the government enacted a new Irrigation Policy, including the guidance for transferring schemes to farmers. The new Land Policy was approved in December 2001. Researchers will examine the implications of these policies for providing equitable access to and authority over the formal irrigation schemes and informal irrigation sites selected for research. In particular, as these new policies and laws were developed independently of one another, we shall identify areas where harmonization is needed to clarify directions and to broaden the access of marginalized groups (such as poor households, and women) to key resources.

The Local Government Act of 1998 has transferred administrative, management and fiscal authority for land, water and other resources to Districts and Municipalities. Researchers will attend meetings of the District and Municipal Development Committees in Zomba District, where our research is based, to observe how decisions regarding access to land and water resources are made at this level. If Catchment Management Authorities (called for in the new water policy) are established, we will track how they relate to the local government committees dealing with water and irrigation.

Sites: Zomba District, Lake Chilwa Catchment, Southern Region.

Researchers: Wapu Mulwafu, Bryson Nkhoma, Anne Ferguson, one other MA student.

Methods:

- Review policy documents and laws; interview key policymakers in Ministries in charge of irrigation, land and water resources; interview Zomba District and Municipal authorities.
- Attend and take notes at District and Municipal meetings related to irrigation, land and water resources.
- Do qualitative analysis of notes to determine representation of different interests, and women's participation and activity.

Timeline:

- Continue review of policy documents and interviews with policymakers initiated during 2002.
- Attend meetings in Zomba District as they are scheduled throughout the year.
- Prepare reports on these activities September 2003, for inclusion in the BASIS annual report.

C. Formal and Informal Irrigation

One of the goals of the water, land and irrigation reforms is to provide water for improving agricultural production and productivity, and, thereby, the incomes and welfare of small-scale farmers in Malawi. Hence, the research focus is placed on small-scale irrigated agriculture. This focus is particularly significant in light of two new developments. First, the Government of Malawi has decided to "hand over" the formal schemes to small farmers as part of its irrigation and decentralization programs, and is largely reliant on donor funds to

carry this out. Second, informal irrigation, long neglected, now has captured donor and government attention. The recent droughts and the serious food crisis in the past two years are an impetus for government, donors, and researchers to take informal irrigation more seriously. Thus, experts from Bunda College of Agriculture have been investigating the contribution of small-scale "appropriate" technologies, such as treadle pumps, to enable farmers to extend the growing season. In addition, for the first time this year, the Government/DFID program directed a small inputs package to dry season *dimba* farmers to increase the production of maize (plus some beans).

Formal irrigation schemes have captured most of the attention in Malawi till recently, as they have in the literature. Yet cultivation on wetlands and streambanks is widely practiced and constitutes a major source of smallholder food and cash earnings in the form of vegetable production, smallholder tobacco and seed nurseries. Thus, these are among the most valuable agricultural lands in areas legally under "customary" tenure. Moreover, they are coming under increasing competition because they are used for different and often incompatible purposes—livestock grazing, agricultural production, brick-making, mining for sand and gravel. Some are also being designated as protected areas for fisheries and other wildlife. The aim of the surveys and ethnographic analysis is to document the current uses and systems of rights in both formal and informal irrigation sites; to monitor the transfer or "handover" process of the formal irrigation schemes from government to farmer organizations; and to document the relative importance of formal and informal irrigation in relation to each other and to dry-land farming and other income sources to smallholders. On the basis of the findings and analysis, we will provide up-to-date and accessible information to policymakers and other relevant actors.

Questions and activities will include:

1. Baseline surveys of users of formal and informal irrigation: information on family structure, income sources, assets (proxy for income), fields cultivated, crops grown, sources of income. Monthly surveys will be conducted February-June, 2003, to collect information on use of plots/gardens, and income.

2. For the formal irrigation sample, information on farmer knowledge of and participation in the transfer process will be gathered in a separate survey. This will provide baseline information for the ongoing qualitative analysis throughout the rest of the year. Questions for the latter will include: (i) What farmers' organizations are set up to manage irrigation, who become members, who is excluded, how do they function? (ii) What is the role of the Government Scheme officers (who are still in place) in the transition to a farmer-managed scheme? (iii) What management organization is set up by the new water-users organization, and how do they differ (or not) from the previous Government-run scheme practices.

Working hypotheses/questions:

1. Preliminary information on the discrepancies between the lists of irrigation scheme plot-holders and those actually using the plots suggests a likely outcome of the formation of a Water User Association and the farmer management of a scheme is to benefit the better-off and politically connected families more than the poorer and less well connected.
2. Existing literature on small-scale, farmer-managed irrigation schemes suggests that the poorer families either do not manage to get included in the formation of such schemes or are sloughed off over time. Has, or will this happen in the Malawi sites?
3. The ability to maintain the irrigation infrastructure will require considerable capital as well as technical expertise and labor organization. Preliminary information suggests that the first (capital) is extremely scarce and is likely to be the cause of considerable difficulty and possible breakdown in the schemes' handover to farmers. Will this be the outcome? If so, what measures might be identified to mitigate or remove the difficulty? If not, how will farmers manage to overcome the difficulty?
4. The new land policy assumes that "customary" land is under the command of chiefs. In practice, in densely settled areas such as the south, including the research sites, much of so-called customary land is de facto family property. As the new policy is implemented, the effects for the valuable streambed gardens may be to a) exacerbate competition over their disposition

among extended families, and b) undermine existing rights that are generally accepted locally. The research is designed to provide information that may direct the authorities' attention to such dangers.

5. A very specific question this year is what have been the effects of the GOM/DFID inputs program to *dimba* (streambed gardens)? The distributed package is of maize seeds plus some beans and top dressing of fertilizer. Since the main use of *dimba*, at least in areas close to markets, such as those of the research sites, is to produce vegetables for sale, and for some/most of that income to be used for purchasing maize, it is likely that the program will have displacement effects. Thus, even though the overall maize harvest may well be larger as a result of the program, it will displace income sources and dynamics (sales of vegetable along a chain of sellers and buyers, purchases from local maize growers) that might have longer-term negative effects.

Sites: Villages along the Domasi and Likangala Rivers in the Lake Chilwa Catchment.

Researchers: W. Mulwafu, B. Nkhoma, P. Peters, A. Ferguson.

Methods:

- A census was completed by late September 2002 of *dimba* gardens along a stretch of the Likangala river, which had been identified as a suitable site from the BASIS I research. The census provides the information for the sample for informal irrigation.
- Baseline surveys of two formal irrigation sites (schemes) and one informal irrigation site; monthly surveys. Samples for the irrigation schemes were selected during September-October 2002.
- Qualitative information to be collected by field assistants resident in each of the three sites, directed by the senior researchers, and to be used, along with field interviews and observation by the senior researchers, to provide an ethnographic analysis of the sampled farmers.
- Interviews with Ministry of Agriculture and Irrigation personnel in charge of Domasi Irrigation Scheme and interviews with IFAD personnel (the donor), and Concern Universal personnel who have been charged with some of

the training for handover; interviews with donors and NGOs in charge of the Likangala handover will take place as these are identified.

Timeline:

- Baseline surveys: *formal irrigation*—dry season user baseline in September 2002; wet season scheme plot holders baseline and scheme handover questionnaire in December 2002-January 2003; *informal irrigation* baseline in October-November 2002.
- Monthly survey February through June 2003.
- Qualitative/ethnographic analysis throughout the year.
- Interviews with stakeholders throughout the year.
- Data inputting programs set up by October 2002; data inputting from November onward. Analysis will run throughout the period but the survey data analysis should be completed by May 2003; writing will take place June-September.

D. Anticipated Outputs

- M. Phil in Sociology from the University of Zimbabwe for Mr. Sithole.
- *BASIS Briefs*, with one drawing lessons from Zimbabwe and Malawi.
- Several papers in scholarly venues such as conferences, working paper series, and journals.
- Concise summaries of the key research findings that communicate the range and importance of the conclusions to different targeted stakeholder groups that include district councils, government ministries, irrigation scheme management, faculty at Chancellor College and Bunda College of Agriculture, donors, NGOs, and citizen groups.
- Stakeholder workshops and continued participation in regional and international professional meetings.
- Meetings with women's NGOs in Malawi to discuss BASIS findings.
- Posting materials on regional websites such as African Water Page (<http://www.africanwater.org>) and WaterNet (waternet@africaonline.co.zw).
- Annual BASIS planning workshops that will include key policymakers.

III. RESPONSE TO BOARD OF DIRECTORS

The BASIS Board of Directors asked for clearer links between the policy debate and the research, its methodology, dissemination, and theoretical framework. The Board also wanted clarification on how this project builds on what has been done before. Specifically, the Board requested the following:

- *summary of the research findings and policy impact of the BASIS I research;*
- *substantiation of the theory of institutions as instruments of policy implementation;*
- *clarification on the current research methodology; and*
- *description of what impact the expected research findings will have on current or future policy initiatives (local, national, or international) or on the disadvantaged groups participation in resource management.*

Our response follows.

A. Introduction

First, the problems addressed are the lack of good information on current practices of irrigation needed for guiding the process of hand-over of schemes to farmers; the serious underestimation of the importance of “informal” irrigation; the current and likely increase in competition over water sources for agricultural and other uses; the disjunctures and contradictions across the bodies of legislation and policy on water, irrigation and land affecting use of watered lands. Second, each of these perceived problems is directly affected by current policies and practices: the relatively sudden turn by government and donors to seeing irrigation as a key answer to the country’s problems of food deficit suggests that action may be taken without sufficiently good information to guide it; the handover process is focusing on upgrading the physical infrastructure and helping organize “water user associations” but pays less attention to the equally important issues of assuring technical expertise for maintenance, access to credit and to marketing; the land policy assumes land in rural areas to be under “customary” tenure, ignoring both the extent to which farm holdings are actually family property and the status of the waters that feed the family-owned streambed gardens. Third,

the research design will provide information that seeks to answer these and related questions (see below for more detail). Fourth, the types of policy recommendations are likely to vary from very specific issues regarding a particular irrigation scheme (such as how to deal with the fact that despite lists of registered plot-holders, there appear to be numerous “contractual arrangements” allowing others to gain access to the plots”, to more general issues such as the importance for land policy to recognize types of private property in the so-called customary system, and for land and water policy to deal more precisely with current competition over water sources (for example, upstream-downstream conflict) and with situations of de facto open access (for example, to water, gravel and sand in streams).

B. Research Problems

1. The government and other agencies in Malawi (as well as other Southern African countries) are currently engaged in efforts to revise policy and administration on water resources. However, there is a dearth of documented information on the existing practices of different water users and the relations among these practices. Clearly, this is not a good basis for policy formation and implementation. Hence, one task for the research is to provide such documentation.
 2. Within the general policy attention on water resources, a central concern is with providing water for improving agricultural production and productivity, and, thereby, the incomes and welfare of small-scale farmers in Malawi. Hence, the research focus is placed on small-scale irrigated agriculture. This is divided into two types: “formal” irrigation that refers to the smallholder irrigation schemes originally set up by government and depending on gravity and/or pump-driven water; and “informal” irrigation that refers to the use of gardens made along streams or in seasonally wet lands (respectively, *dimba* and *dambo*).
- Particular urgency for this focus derives from two factors: First, the GOM has decided to “hand over” the formal schemes to small farmers as part of its decentralization program but is reliant on donor funds to make this feasible. Thus, not all schemes

currently have identifiable funds to allow them to be handed over. In addition, the relative pressure being placed by government on the hand-over is focusing on physical infrastructure and membership organizations without sufficient attention to the need for strong institutional means to allow the new associations access to credit, markets, and technical advice. Second, informal irrigation has been relatively neglected by government, even though it constitutes a much larger sub sector than formal irrigation and the most valuable part of smallholder land-holdings. Since the mid 1990s organizations like the FAO and DANIDA have started to pay more attention to it. The recent droughts and the serious food crisis in the past two years have been a further impetus for government, donors, and researchers to take informal irrigation more seriously. Thus, Dr. Wiyo and others at Bunda College of Agriculture have been investigating the contribution of small-scale “appropriate” technologies, such as treadle pumps, to enable farmers to extend the growing season. Also, this year was the first for a GOM/DFID program to direct a small inputs package to *dimba*.

The field research is thus designed to do the following: a) establish a baseline situation in two formal irrigation schemes before they are handed over; b) monitor the process of handover; c) document basic information on the use of informal irrigation by comparison with formal irrigation and the predominant dry-land farming.

3. Access to and control over formal and informal irrigation sites depend both on water and land. The intersection of water and land is a focus of the research. One major problem lies in the lack of connection between policies and administrative practices on land and those on water and irrigation. In BASIS I Ferguson and Mulwafu drew the attention of policy-makers to disjunctions between the new water and decentralization policies which needed to be addressed and some action was taken by the respective departments. In BASIS II we are extending this analysis to the intersections between the new land, irrigation, and water policies in order to identify areas where “harmonization” is necessary and to provide recommendations on “broadening access” based on field research. The government of Malawi has recently finalized the new water and irrigation policies and (almost) finalized a new land policy, but there is next to no

relation between these policies, and little has been done to reconcile recommendations in these documents. The research takes this problem as another focus, asking what effects this lack of connection has on the access of smallholder farmers, women and other user groups to water and land, in particular, to the irrigated sites identified; and how might any negative effects be mitigated or removed.

This part of the research is pursued through the fieldwork, but more particularly through senior researchers, aided by the junior researcher, analyzing relevant policy documents, interviewing key figures in the policy process, and interacting regularly with the latter.

C. Field Research Design

The research team has selected Domasi and Likangala rivers as the primary site. These are two of the main rivers in the Chilwa basin, which is an important water basin in Southern Malawi, and also the focus of past biological and ecological research and of policy attention. Two irrigation schemes to represent “formal” irrigation have been selected - one at Domasi and one at Likangala (the names are the same as the rivers). The rationale for their selection out of several in the area is on their stage of “handover” to farmers from government, which is a key part of the government’s plan for small-scale irrigation. Domasi is at the most advanced stage of transfer in our area, while Likangala is at least a year behind. They also contrast in a number of significant ways that include the productivity of the scheme (measured in yields), the effectiveness of marketing arrangements for the sale of crops, the degree of organization of scheme farmers, including the formation of a water users’ association (WUA) and the development of procedures, by-laws, the legal and accepted status of the land on which the schemes lie, and the presence of a donor to support the handover.

Baseline surveys of a sample in the *irrigation schemes* are to be conducted in the dry season (September 2002) and in the wet season (December-January). This is in order to identify the users of the irrigation plots who differ seasonally. From preliminary information, it appears that during the dry season, a minority (less than 15%) of the plots are used by non-registered farmers, whereas during the rainy season, most plots are

used by the registered plot holders. The main, wet-season, baseline includes information about the family of the plot user, how the plot was obtained, how many plots are owned and used, what crops are grown, and how the food and cash income from the plot(s) compare with those from dry-land fields, *dimba* or *dambo* gardens, and from other income activities. From February, 2003, a monthly survey will collect information on plot/garden use, inputs, crop sales, food supplies, and income.

Information on “*informal*” irrigation along streambeds and in wetlands will be collected through the following: (1) An area along the Likangala has been selected for its high concentration of “informal” irrigation (established from the BASIS I research). A census of gardens along this stretch of the Likangala was completed in early September and used as the basis for a sample for survey and ethnographic analysis. (2) In addition, information will be collected from the irrigation scheme samples: the plot holders do not farm only on the scheme but also have dry-land gardens and some of them have streambed and wetland gardens.

Information on wetland (*dambo*) gardens, which are the least common of the three but which appear from several reports to be increasing across the country, will be collected through the formal and informal irrigation samples.

The monthly survey used for the irrigation schemes will also be used for the *dimba* sample.

In addition to the surveys, ethnographic or qualitative information is collected by field assistants who are resident in the three sites. The methods used are those classic to anthropology, namely, participant observation, informal interviews, conversations, oral histories, dispute case analysis, observation of ongoing events. The topics on which the assistants focus are selected by senior researchers: these include the relationships among farmers and others (e.g., irrigation scheme staff, Chinese technicians, NGOs), types of informal contracts or agreements among farmers over irrigation scheme plots and *dimba*, and disputes. This has been underway for some months. In our experience, the combination of survey and ethnographic analysis—the quantitative and the qualitative—is much more powerful than one alone. In this, we follow Bardhan (1989) who discussed the pros and cons of surveys and economic

analyses, on the one hand, and ethnography and anthropological analyses, on the other.

Samples: The formal irrigation scheme samples are based on lists of plot holders stratified by place in the scheme (head, middle and end of the canal), village, gender, and number of plots. The Likangala *dimba* sample is a sample of villages randomly selected from those censused for the total number of streambed gardens (maps and field identification are used to determine locations).

D. Data Analysis

During August-September, a consultant, Dr Peter Walker (Department of Geography, University of Oregon) prepared the data inputting programs for the surveys, and instructed a member of the University of Malawi in data programming for the remainder of the surveys. Dr Walker has considerable experience both with such programming and with social research in Malawi.

The plan is for the junior researcher (Bryson Nkhoma) to check the questionnaires in the field, then for Dr Mulwafu to do sampled checks before the data are entered into the data inputting programs by the data clerk. The University consultant on data inputting will help with this process. The data will be analyzed using SPSS and Minitab programs. It is hoped that this will start by the beginning of 2003. The tables and other data runs will then be shared with the US collaborating researchers (Ferguson and Peters +/- Kerr).

The qualitative information is regularly collected by the junior researcher and brought to the University for entering into Word programs. The resulting files are then available for all the senior researchers (Mulwafu, Ferguson, Peters) to review for comment. In addition to the qualitative information collected by the field assistants, the senior researchers will each be conducting interviews (Mulwafu and Ferguson with policy and other persons at district and national levels, Mulwafu and Peters with farmers in the three field sites).

The resulting data and analysis from the quantitative and qualitative sources are expected to provide information on a) current modes of access to and use of irrigation plots and streambed gardens; b) the significance of irrigation gardens in small farmers’ production and consumption

strategies; c) current and potential complementarities and competition among the different types of irrigation; d) current understandings and practices of rights to water and land (the “tenure” issue); and e) the process of handover of irrigation schemes to farmers. This information will be the basis for assessing the current and likely effects of policy change on water and land. Both the research findings and policy analysis will be the basis for making presentations and recommendations to key change agents and for interacting with them regularly.

E. Policy Interaction

The research findings and analysis will be used for several types of activities: papers, reports, and briefs, and oral presentations. The team has already formed good working relations with key actors in policy analysis and formation at district and national level, with relevant donors, including USAID/Malawi, and with organizations such as IWMI (Pretoria) and regional water resources groups. These will provide the necessary ground from which to launch the research findings and recommendations.

We shall follow a strategy similar to the one used in BASIS I to engage policy makers and to influence policy directions. We shall continue to meet regularly with relevant government officers as well as with members of the Malawi USAID mission (particularly with the ADO, Dr Larry Rubey) to keep them informed of the research and, where relevant, to make recommendations drawn from our research on how marginalized groups’ access to and abilities to manage irrigated lands can be broadened, and on how disjunctions in new land, water and irrigation policies which limit access can be addressed. In particular, in line with Malawi’s new decentralization program, we shall strengthen new actors’ abilities to develop and implement policy at District and local levels.

In this sense, our strategy to influence policymakers does the following:

1. It takes into account an expanded definition of who these people are. While interactions with officials in Ministries and international donor organizations are critical, confining interactions to this level ignores the potentially democratic transfer of authority currently underway, and the need to build capacity. By meeting with officials

at the local levels (District Assemblies, Environmental Development Officers, District Commissioners, and NGOs), we have consciously set out to strengthen the knowledge and skills of these actors for policy making and implementation.

2. It promotes continuing engagement and interaction between researchers and decision-makers. In the context described above, a linear model whereby researchers define the problems, undertake studies and then synthesize their findings into policy briefs for final presentation to officials in Ministries and international organizations is by itself insufficient and likely to privilege the already advantaged. It is particularly inappropriate in light of the collaborative form of BASIS research and the need for host country researchers to develop working relations with their policymakers. If the aim is to have an impact, continuous interactions at various stages of the research process, and with a broad array of policy actors, are necessary.

As many policies influencing access to land and water resources originate at national and international levels, we have been and will continue to be active in these forums as well. PIs from the project have recently presented papers at WaterNet and WARFSA conferences – both important forums for policy making in the water sector in Southern Africa. We have also presented research findings at the International Association for the Study of Common Property, American Anthropological Association, Institute of Development Research in Copenhagen, Peace Research Institute in Washington D.C., etc. In early September, we presented a paper at the Anthropology and Environment Policy Conference at the University of Georgia on the policy dimensions of our BASIS research. We have been invited to participate in a planning conference at the School of American Research, Santa Fe, New Mexico, in preparation for the Society for Applied Anthropology Plenary Session on Water, Globalization and Health in April 2003. Our session on anthropology and public policy has been accepted for the November, 2002 Annual Meeting of the Anthropological Association. We have sought and gained additional funding from various organizations in the region – IUCN and WARFSA

– as a means to supplement limited BASIS funds and to broaden its impacts by bringing our concerns with access to the attention of other funders/policy makers in the region.

This strategy has produced several notable results. From the period of BASIS I to date, the team has held consultative workshops and briefing sessions for key agencies and actors at national and district levels. The researchers have presented plans and findings, and have engaged in regular discussions with the key stakeholders. At the end of BASIS I, for example, the senior researchers were invited in September, 2001, to present their paper on decentralization and the water reform process to the Permanent Secretary and technical officers of the Ministry of Water Development in Lilongwe. As a result of the ensuing discussion, the Ministry officials decided they wished to take action on several of the team's recommendations regarding their ongoing policy process: one issue concerned the need for the Ministry to take more systematic account of the current decentralization of government in the formation and implementation of its water policy reform; another concerned the poor level of supervision of water provision and the decision to reallocate resources to that end. Early in 2002, the team was invited to present their analysis (funded by an IUCN consultancy as well as the BASIS research) of water demand management to the Ministry of Water Development. In addition, there was considerable media coverage of the team's work, and they were called by the Chairman of the Parliamentary Committee on Agriculture and Environment to brief the Committee on this topic. Recently, in early August 2002, the team was invited by the Ministry to provide input to the Ministry staff and the Consultant engaged to advise on strengthening the Water Resources Board (part of the Ministry). These, and other examples of interaction with key actors at national level, clearly reflect that the team has already achieved acknowledgement of its expertise and that they have already had influence over ongoing policy formation and implementation.

Similar achievement is clear at the district level, which is all-important in light of the current decentralization of government functions to that administrative level. Many of the contacts with various change agents at district level were, again, established under BASIS I and are continuing.

Already, by 2000, the team's efforts at conveying their research findings to key agents and agencies had led to the following. First, the relevant officials in the Ministries of Water Development and Health responded to the researchers' presentations by taking action regarding the sources of major pollution in the Likangala river and in village water sources in the Chilwa Basin. These included fining several polluters, a situation reviewed in the media, and providing renovations to a dilapidated sewage system in a health center serving many of the Chilwa sample households. These decisions directly benefit some of the poorest families in Malawi and, because water management and health care are disproportionately the charge of women, they also benefit women.

Second, officials of the District's Department of Agriculture were briefed on the research that showed severely detrimental effects on small producers downstream from upstream users including tobacco estates, brick makers and urban-based sand miners. The Department recognized the implications of the findings for small producers' practices and achieved yields, a recognition the team hopes will lead to a more systematic appreciation of basin-wide effects on specific categories of users. An important aspect of the findings on upstream-downstream uses is that for historical and other reasons, the downstream users include precisely the "disadvantaged" small producers of concern to BASIS.

In all the examples provided so far of the team's efforts to interact with and influence policy and other change agents, they have systematically brought the "disadvantaged" small farmer to the attention of powerful authorities. Another connection made by the team is with the District Assembly that was established in late 2000 as part of the decentralization process. This group comprises people who are highly influential in the district and, to date, the team has established a very good working relation with them. The team regularly briefs the Assembly and individual representatives, and seeks to ensure that their research is understood and that they understand the aims and problems of the Assembly. The recent withdrawal of DANIDA has hit the district environmental sub-sector hard so that some of the plans developed by the Assembly in concert with the team have been aborted for now. Nevertheless,

the team ensures communication channels remain open between them and the Assembly. One recent outcome of their interactions is that Chief Mwambo, the most senior chief (Traditional Authority) in the region of our research, expressed great interest in the ongoing research findings on land disputes, especially in the irrigation scheme, and invited the team to attend his weekly court meetings where he deals with such disputes.

Finally, the Malawi team has established a similar foundation for the communication and discussion of research to key “change agents” at the most local level of our research, namely, scheme and villages. During this first year of BASIS II, despite a late start due to delays in the transmission of BASIS funds, the team has established an ongoing relationship with the irrigation scheme management, with the farmer groups being formed, and with representatives of the donors and NGOs working with the farmers. The handover process is fraught with considerable tension and ambivalence: for example, many of the scheme managers deride the ability of farmers to run the scheme without government involvement and also are angry about the change in their employment (including many hidden “perks” from managing the site of a valuable crop, rice). Then, too, many farmers are

skeptical about their ability to manage the scheme without the kinds of resources available in the past to government. Hence, it is often tricky to maintain good working relations with the various stakeholders, some of whom are opposed to others. Nevertheless, the team has managed very well so far and is in a good position to monitor and analyze the critical process of “handover” over the next few years and, on the basis of their analysis, to work with the new farmers’ groups to develop sustainable management procedures. Insofar as the “informal” irrigation sites are concerned, there are no equivalent categories of “managers”, apart from the local farm extension agents, or of farmers’ associations, apart from much smaller maize and tobacco credit clubs. It seems likely, however, that the government’s current donor-financed program of supplying inputs for *dimba*/streambed gardens—the first ever such program—will provide one basis on which *dimba* farmers may organize. One of our working assumptions at this juncture is that an effect of the current water policy reform and the emergent land policy along with the new official interest in streambed gardens is likely to be the development of new farmers’ groups. Research on such institutional development is a key element in the Malawi research.

RURAL MARKETS, NATURAL CAPITAL, AND DYNAMIC POVERTY TRAPS IN EAST AFRICA

Global Constraint 2: *Unsustainable Use of Degradable Resources*

Global Constraint 3: *Poverty and Food Insecurity Traps*



Boys playing outside their home in Baringo District, Kenya
(Photo by Chris Barrett)

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Andrew Mude, Ben Okumu, Alice Pell, Amare Teklu

PROJECT PROFILE

One fifth of the world's population lives on less than a dollar a day, and most of those ultra-poor live in rural areas and work in agriculture. So world's poorest populations rely disproportionately on the natural resource base on which agricultural productivity depends. Recent empirical studies using longitudinal data find that a disturbingly large share of these people suffers chronic rather than transitory poverty. Many appear trapped in a state of perpetual food insecurity and vulnerability because their poverty and poor market access preclude efficient investment in or use of productive assets.

Those caught in a poverty trap may have no option but to overwork the natural resources, particularly the lands they cultivate and graze, in the course of their ongoing struggle to survive. Partly as a consequence, nearly two-fifths of the world's agricultural land is seriously degraded and the figure is highest and growing in poor areas such as Central America and Sub-Saharan Africa. Such degradation exacerbates pre-existing poverty traps, by discouraging capital-strapped smallholders from investing in maintaining, much less improving, the natural resource base on which their and their children's future livelihoods depend. The resulting degradation of the local agroecosystem further lowers agricultural labor productivity, aggravating the structural poverty trap from which smallholders cannot easily escape. These problems feature prominently in Kenya and Madagascar and in

discussions among policymakers, donors, and NGOs as to how best to design poverty reduction strategies.

This BASIS project is undertaken in collaboration with FOFIFA in Madagascar and with KARI and ICRAF in Kenya with the goal of identifying best-bet strategies to help smallholders escape the interrelated problems of dynamic poverty traps and on-farm natural resource depletion. Degradation of soils and access to factor and product markets are the primary foci. Empirical analysis, based on panel data collection and follow-on qualitative (oral history and ethnographic) field work in seven sites, five in Kenya and two in Madagascar, and context-driven simulation modeling will be used to determine the incidence, severity and causal linkages behind poverty traps, as well as to identify the most promising approaches to reducing the incidence and severity of chronic poverty, especially in ways that support agricultural productivity growth and repletion of degraded soils.

The project is actively engaged in discussions with policymakers involved in poverty reduction strategies in each country, with the most senior levels of the agricultural research communities in each country, and with local communities. The discussions regard practical, science-based strategies for improving access to productive inputs (including soil nutrients) and markets necessary for poor people to be able to improve their livelihoods over time.



Support

Core support. Matching funds provided by Cornell University and the Rockefeller Foundation. Supplemental funding by Rockefeller Foundation and International Development Research Centre to the University of Nairobi, by USAID/Madagascar for qualitative research and training, and by National Science Foundation to Cornell University and ICRAF for biophysical research in three Kenya sites and more in depth bioeconomic systems modeling.

Outputs

Barrett, Christopher B., Lawrence E. Blume, John G. McPeak, Bart Minten, Festus Murithi, Bernard N. Okumu, Alice Pell, Frank Place, Jean Claude Randrianarisoa, and Jhon Rasambainarivo. 2002. *Poverty Traps and Resource Degradation*. **BASIS Brief 6**. Madison: Department of Agricultural and Applied Economics, University of Wisconsin. Online at <http://www.basis.wisc.edu/live/basbrief06.pdf>.

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Instructors: Ben Okumu (lead) and Chris Barrett.
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I. ACTIVITIES 2001-02

A. Accomplishments

1. Household-Level Panel Data Collection

(McPeak, Ouma, Oduol, Rasambainarivo, Randrianarisoa, Rakotoniaina, Hogset, Murithi, Place, Wangila, Teklu, Barrett, Okumu)

The workplan called for a new round of household surveys at each of the six planned sites, building on pre-existing data to create or expand panel data sets to be used in subsequent analysis of welfare and resource dynamics. Questionnaires were designed and pre-tested, enumerators trained, and new survey work successfully launched in all sites. At the close of the project year, survey work had concluded and data entry and cleaning was continuing in our Baringo and Marsabit sites in northern Kenya (30 households each) and in our Fianarantsoa and Vakinankaratra sites in Madagascar (123 and 315 households, respectively). The final module of the survey was in the field in our central and western Kenya sites (due to the timing of harvest following the long rains season).

2. Qualitative Field Work

(Oluoch-Kosura, Murithi, Place, Rasambainarivo, Rakotoniaina, Barrett, McPeak)

Initial meetings with stakeholders in 2001 highlighted the need to complement the planned quantitative analysis with increased qualitative social science analysis in order to understand better the processes involved in inhibiting or promoting improvements in rural households' welfare and the potentially complex relationships between welfare dynamics and those of soils and other natural capital possessed by rural households. We therefore sought and secured additional funding necessary to undertake qualitative research at community and household levels to complement the survey-based research taking place in six of the field sites: Dirib Gumbo (Marsabit), Embu, Madzu (Vihiga), and Ngambo (Baringo) in Kenya and Fianarantsoa and

the Vakinankaratra in Madagascar. In Kenya, this work is supported by supplementary grants from IDRC and the Rockefeller Foundation to the University of Nairobi, in collaboration with ICRAF and KARI. In Madagascar, this work is supported by Cornell University's Ilo project-funded by USAID-Madagascar.

3. Development of Crop, Livestock and Soils in Smallholder Economic Systems (CLASSES) Model

(Okumu, Barrett, Blume)

A first, conceptual version of the bioeconomic modeling tool was developed using VENSIM systems dynamics software. Parameterization and calibration of the model are FY2003 tasks, but the basic architecture of the model is now in place. This involved regular, extensive meetings within the team and with modelers in related agricultural sciences at Cornell and Wageningen (Netherlands).

4. Bioeconomic Modeling Course, Two-Day Introductory Session and Website

(Okumu, Barrett, Blume, Rasambainarivo, Rakotoniaina, Randrianarisoa, Wangila, Obonyo, Oendo, Ouma, Phiri, Oduol, Oluoch-Kosura)

The project considers non-degree training activities of equal importance to degree training. Professional staff at the national agricultural research institutes in each country have had little or no prior training in methods for the analysis of the coupled dynamics of human and natural systems. We have therefore invested heavily in training key staff in FOFIFA and KARI in our new bioeconomic modeling tool, the CLASSES model, in order that they can subsequently help refine the CLASSES model, who can use it for ex ante impact assessment of new technologies or policies at their home institutions, and who can subsequently help train others in use of the CLASSES tool (i.e., training the trainers).

BIO-ECONOMIC MODELING COURSE, CORNELL UNIVERSITY

Description

Offered for scientists at FOFIFA, ICRAF and KARI who have responsibilities for policy and technology analysis. Students will be trained in systems dynamics analysis and in the design and use of the Crop, Livestock and Soils in Smallholder Economic Systems (CLASSES)—an integrated bioeconomic model of east African rural systems dynamics. There will be two sessions of instruction—a two-day session in Kenya in June 2002 followed by a two-week session in the United States in October 2002. Also there will be electronic consultation between students and course staff before and after the first session, culminating in each student's design, calibration, validation and sensitivity analysis of a variant of the CLASSES model.

Objectives

- Impart skills that enable effective use and modification of the integrated bio-economic CLASSES model for policy analysis. The skills will enhance students' understanding of how the structure of rural systems affects system performance in the wake of various interventions, equip students to adapt the model structure in order to simulate unique features of their specific environment, and facilitate accurate and sophisticated ex ante impact assessment.
- Stimulate systems thinking in order for students to better appreciate the complexity of most systems that arise not from the complex subunits but rather from their intricate linkages. Such systems thinking helps policy analysts anticipate how interventions in one part of a complex system commonly result in responses from the other parts of the system, thereby helping to mitigate undesirable unanticipated consequences of policy and project interventions.

Staff

Dr. Bernard N. Okumu, (lead instructor), Dr. Christopher B. Barrett (project director), and Dr. Lawrence E. Blume.

The bioeconomic modeling course began in June 2001 with a 2-day introduction module, held on the ICRAF campus in Nairobi, and the subsequent launching of web-based instruction (<http://afsnrm.aem.cornell.edu/Bioecon/>). This was attended by nine students plus Professor Oluoch-Kosura. Dr. Okumu was the lead instructor, with Barrett lecturing one morning and backstopping Okumu. The workplan called for training two scientists each from FOFIFA and KARI, but we have managed to cut costs and train three from each institution. This course has also drawn considerable demand from others. The two-week session in Ithaca in October-November 2002 included three students fully funded by non-BASIS funds, one paid by ICRAF, one from the University of Nairobi on a grant from the Rockefeller Foundation, and one from the USAID-Madagascar Landscapes Development Initiative (LDI). There have been widespread expressions of interest in the course. At least three other scientists in Madagascar (one with LDI and two with the Université d'Antananarivo)

attempted to raise the funds necessary to participate in the course.

5. Degree Training

(Mude, Hogset, Moser, Teklu, Phiri, Barrett, Oluoch-Kosura)

The workplan called for Ph.D. training of one Kenyan (Andrew Mude). Through co-financing from host institutions and other projects, we were able to help support training for five Ph.D. candidates this year. Andrew Mude (Kenya) was mostly funded by BASIS (with co-funding from Cornell) in the Cornell Economics program. Heidi Hogset (Norway) and Christine Moser (USA), both Agricultural Economics Ph.D. candidates at Cornell, were funded for part of the summer by BASIS for work in Kenya and Madagascar, respectively (with co-funding from Cornell). Amare Teklu (Ethiopia), a Ph.D. candidate in Natural Resources at Cornell, received logistical and field data collection support from BASIS, although he was wholly funded from other sources. Finally, the

project supported the field research of Paswel Phiri (Kenya), an Agricultural Economics Ph.D. candidate at the University of Nairobi under the direction of Professor Willis Oluoch-Kosura.

6. Post doctoral training

(Okumu, Barrett)

Ben Okumu, the post-doctoral researcher on the BASIS project, is training in empirical methods while playing a lead role in the bioeconomic modeling component of the project. Barrett supervises Okumu's training, which included field visits to Kenya and Madagascar, leading the development of the CLASSES bioeconomic modeling tool and the associated bioeconomic modeling course, preparation of a manuscript submitted to a journal, and presentation at the annual meetings of the American Agricultural Economics Association.

7. Stakeholder Consultations

(Place, Murithi, Okumu, Barrett, Obonyo, Ouma, Oduol, Oendo, Minten, McPeak)

A national-level stakeholder meeting was convened at the University of Nairobi in November 2001, drawing representatives from the government of Kenya, other research institutions, and various stakeholder groups with an interest in the project. A lively discussion ensued which helped considerably in revising our field work, bioeconomic modeling and outreach strategies in Kenya. A community level stakeholder meeting was held soon thereafter in western Kenya the Maseno Regional Research Centre, at which the project's objectives and methods were likewise presented to and commented upon by local policy groups. The results of these meetings are written up in a report by Frank Place. Stakeholder consultations were held in Embu and Pekerra through the Regional Research Centers in those places, and in the Fianarantsoa and Vakinankaratra sites in August. The purposes of all these stakeholder consultations were to brief them on the purpose and design of the project and to elicit feedback on key concerns and appropriate modalities for communicating results back to end-users. Political turmoil in Madagascar disrupted the scheduled community and national-level stakeholder meetings in early February. Consultations were held with USAID-Kenya and USAID-REDSO in November, January and June, and with USAID-Madagascar in December and

May (the latter by telephone with USAID-Madagascar staff evacuated to Washington).

8. Field Visits

(Barrett, Mude, Hogset, Okumu)

Okumu traveled to Kenya and Madagascar in November-December 2001 to (i) participate in the national level and western Kenya stakeholders meetings aimed at getting input from a wide range of individuals and institutions in the Kenyan government, local communities and other research groups, (ii) gathering secondary data necessary to parameterize and calibrate the biophysical components of the CLASSES model, (iii) work with BASIS team members in both Kenya and Madagascar on survey design and methods necessary to recover the welfare and resource dynamics of interest and to insure comparability between data from the different sites.

Mude traveled to Kenya in December-January to work with BASIS team members on data collection and analysis in the northern Kenya sites, including assembly of a code book and survey description.

Barrett traveled to Kenya in January to convene a Kenya team meeting to discuss data collection and analysis issues and to meet with stakeholders at KARI, USAID/Kenya, USAID/REDSO, ICRAF and other groups. USAID BASIS cognizant technical officer Lena Heron joined Barrett in Nairobi for some of these meetings. Heron and Barrett planned to travel to Madagascar for national and community-level stakeholder meetings and a Madagascar team meeting. Political turmoil in the country closed the airport, however, and resulted in a travel ban by USAID.

Hogset spent a bit more than six weeks in the field in Kenya, in our Embu, Baringo and Vihiga field sites, helping KARI-Embu with survey preparations and doing exploratory field site visits for her dissertation work in conjunction with BASIS on social networks, technology adoption and poverty traps in rural Kenya.

9. Policy Briefs

(Entire team)

The workplan called for the release of three briefs in FY02. We released one, in both English and French. We began preparation of two others in the fourth quarter, and they will be completed and released in 2003.

10. Project Team Meeting

A team project meeting was held in June 2002, in Kakamega, near the project's western Kenya sites, to discuss data collection and analysis issues across the various sites, present the bioeconomic modeling training and work, and agree on a detailed outreach plan for the coming year. Two team members from Madagascar were able to attend despite the ongoing political turmoil there. The Deputy Director of the Kenya Agricultural Research Institute, Ephraim Mukisira, attended the first day.

11. Addition of Madzu site

(Phiri, Oluoch-Kosura, Place)

Through the efforts of Oluoch-Kosura, Phiri and Place, the project was able to add a site in western Kenya (Madzu, Vihiga District), in which the University of Nairobi had collected detailed household survey data in 1989 under a World Bank project. The project team managed to track down 89% of the respondent households 13 years later, creating an unusual low frequency (and low attrition rate) panel data set that will be available in 2003.

12. Presentation at USAID-Washington

(Barrett)

At the invitation of USAID cognizant technical officer Heron, Barrett presented a seminar on the project at USAID-Washington on 19 March 2002, which was subsequently written up and published in the Administrator's weekly newsletter.

B. Problems and Issues

The main problems concerned (i) previously unrecognized weaknesses in the existing data set for Embu on which we planned building and (ii) the political crisis in Madagascar, which caused USAID to impose a travel ban on the country. The Embu data problem necessitated significant revisiting of our objectives and field research strategy in Embu, which delayed the commencement of data collection from March to September. This set us back about six months in fieldwork in Embu and reduced our capacity to undertake the full range of welfare dynamics analysis in that one site prior to year three of the project. The political crisis in Madagascar forced postponement of the community and national-level policymakers workshops scheduled for early February and of the field data collection scheduled for March. The Madagascar

team met with the Cornell and Kenya teams in June to work out details on the survey in spite of the crisis. Community level stakeholder meetings were held and data collection began in August, shortly after the political crisis lifted and as road trafficability and fuel availability began to improve considerably in the countryside. Because national policymaker attention is presently focused on post-crisis recovery, we did not convene a new national-level workshop.

C. Collaboration

In Kenya, we have strong links to three other USAID-funded projects and to a new National Science Foundation research project. We share our Baringo and Marsabit sites with the USAID Global Livestock CRSP Pastoral Risk Management (PARIMA) project. PARIMA has enabled us to leverage data collection in our northern Kenya sites significantly, to our mutual benefit, as BASIS funding enabled expanded thematic coverage of the households being surveyed under PARIMA. BASIS project "Assets, Cycles, and Livelihoods" (PI: Peter Little) works in this same Baringo site. We keep each other informed on efforts there and cooperate in data collection and interpretation. The new USAID Strategies and Analyses for Growth with Access (SAGA) cooperative agreement includes Kenya as a core country in exploring "bottom-up" approaches to growth with access. The consortium of Kenyan collaborators under SAGA includes each of the major economic research institutes in the country and are heavily represented in the Kenya Rural Development Strategy (KRDS) and Poverty Reduction Strategy advisory processes in the government. The SAGA program in Kenya is pursuing two interrelated projects that link nicely to our BASIS project: "Reducing Risk and Vulnerability in Rural Kenya" and "Empowering the Rural Poor." Coordination has been explicit between BASIS and SAGA.

Our project is most closely linked in Kenya with our team's new 5-year \$1.7 million National Science Foundation (NSF) biocomplexity grant entitled "Homeostasis and Degradation in Fragile Tropical Agroecosystems." The NSF project augments the BASIS social science research with in depth biophysical field research and modeling in our Baringo, Embu, and Vihiga sites to pursue frontier modeling of complex dynamic systems.

This project began 1 September 2002, and will involve extensive biophysical field research over four-plus years with involvement of leading animal, atmospheric and soil scientists in addition to sociologists and economists.

The NSF project also involves four Kenyan Ph.D. candidates—a GIS specialist, two soil scientists and a rural sociologist—whose programs at Cornell are funded under the Rockefeller Foundation’s African Food Security and Natural Resources Management program at Cornell and complement the BASIS project, especially in our Baringo and Vihiga sites. This adds considerable capacity in understanding processes of ecological degradation, which addresses a concern raised by the BASIS Board of Directors.

Our project is also closely linked with two other projects directed by ICRAF. One is a DFID funded project assessing the impact of agricultural research on the poor, coordinated by IFPRI, with ICRAF directing the case study work in western Kenya, in our Siaya and Vihiga sites. ICRAF has another related DFID-funded project, “Voices of Poor Livestock Farmers,” in the greater Lake Victoria basin, which likewise includes our western Kenya sites. One of the Rockefeller Foundation Ph.D. fellows at Cornell did extensive fieldwork with that project in Vihiga this past summer.

Linkages to other projects are likewise extremely strong in Madagascar. Cornell is now in the final year of a substantial policy analysis and capacity building project (the Ilo project) funded by USAID/Madagascar. BASIS team member Bart Minten is the Ilo project chief of party in Antananarivo and Barrett, Moser and Randrianarisoa are actively involved in the research under that project.

Cornell is also a part of USAID-Madagascar’s Landscapes Development Initiative (LDI) project run by Chemonics International, and Madagascar is (like Kenya) one of the seven core countries under the USAID/Washington SAGA cooperative agreement. These projects share complementary

interests, in the case of Ilo and SAGA, in welfare dynamics and public policy and, in the case of LDI, in sustainable agricultural systems for smallholder producers. Ilo has helped fund the social analysis component of BASIS’ data collection, while LDI and Ilo have contributed background data to BASIS analysis of poverty traps and rice technology adoption. SAGA will help integrate BASIS findings into a broader policy dialogue about Madagascar’s poverty reduction strategies and into training of economic researchers in the country.

Finally, our BASIS project has been closely linked to initiatives of the Rockefeller Foundation and USAID/AFR/SD in the past year. The Rockefeller Foundation asked Barrett to organize and host a global experts’ meeting on “Markets and Policy for Increased Access and Incomes in Rural Africa,” held at Cornell University, 7-8 January 2002. This meeting was aimed at guiding the design of a major

new Rockefeller Foundation initiative on “Markets to Raise Incomes of Poor Farmers” in Africa and involved BASIS Board of Directors Chair Kanbur, two BASIS PIs (Barrett and Little), and project team members Okumu, Oluoch-Kosura and Moser (BASIS

Director Carter was invited but unable to attend) and 14 others from Africa, Europe and the United States. BASIS had considerable input into the design of this new initiative, which was approved by the Foundation’s Board this spring.

The other major initiative influenced by this BASIS project was the *Nature, Wealth and Power* strategy document released by USAID/AFR/SD for the World Summit on Sustainable Development in Johannesburg in August 2002. Barrett and Moser were invited to co-author the economics component and to participate in the discussions that shaped the final content. *Nature, Wealth and Power* is AFR/SD’s summary statement of lessons learned about sustainable development in rural Africa, has been widely distributed worldwide, and will be the topic of a major public forum 15 November 2002, featuring the heads of both EGAT and Africa Bureaus.

BASIS is linked with several development initiatives in both Kenya and Madagascar that explore bottom-up approaches to growth.

D. Key Findings

The following represent preliminary, suggestive evidence that seems material to the key issues of the project.

1. Education appears tremendously important to escaping poverty traps, for multiple reasons. Secondary school completion—or better, a university degree—appears necessary, albeit by no means sufficient, to obtain stable, remunerative non-farm employment. In areas where farm or herd sizes are shrinking due to land scarcity, one needs an alternate pathway to livelihood security. Educational attainment is strongly correlated with both the level and stability of expenditures in our northern Kenya sites.

Nonfarm employment enabled by education also provides steady cash income that can be invested in profitable agricultural intensification. It also provides a superior alternative to unskilled farm labor for households lacking sufficient land or livestock to fully employ their household's labor. We find evidence of these relations repeatedly: in semi-arid and arid sites in northern Kenya, where the educated build up their herds; in central and western Kenya, where education is strongly, positively correlated with adoption of dairy cattle and use of mineral fertilizers; and in Madagascar, where education is positively correlated with capacity to invest in and propensity to adopt improved rice cultivation practices.

Financing education is a serious constraint, however, especially in the wake of policy reforms aimed at “cost recovery” in education. In western Kenya, for example, secondary level school fees have increased tenfold in the past 13 years, to more than 200% of the average annual income of households in the poorest quartile. Although households espouse interhousehold transfers and loans to pay for education, remarkably little such informal financing of education takes place.

2. Output market structure has a profound effect on input market access and resulting welfare

dynamics where seasonal financing constraints arise due to imperfect rural financial markets. Vertically integrated systems wherein the processor contracts forward for sale of a commodity, providing key inputs (e.g., mineral fertilizer, improved seed, tea bushes) on credit, extension advice, and sometimes even invests in local road improvements, enable small farmers to transition to more remunerative livelihoods involving high value commodities. These farms appear to exhibit greater improvements in soil quality and in household income than households that do not take advantage



School children in the courtyard of a primary school in Kenya. BASIS findings reinforce the correlation of education to positive strategies for escaping poverty traps. Yet school fees in some areas of Kenya increased as much as ten times in the past 13 years.
(Photo by Chris Barrett.)

of such opportunities.

There seem to be other, positive spillover benefits for other subsectors as well due to improved soil quality, improved road infrastructure and increased farmer experience with marketing. For example, road improvements increase dairy farmers' ability to transport milk to the selling points during the rainy season.

A fascinating difference exists between tea and coffee in post-liberalization central Kenya. It seems that the credit-in-kind system of input provision has broken down considerably in coffee now that the

parastatal no longer has legal monopsony power, while the need to process tea leaves quickly creates a sort of natural monopsony for local tea processing plants, so that the input provision (seasonal-credit-in-kind) system remains in place, helping tea farmers to obtain and use fertilizers and to thereby keep productivity and soil quality up. Farmers who have the ability have shifted from coffee to dairy and horticultural production.

However, there remains a high proportion of coffee farmers who have not been able to shift to other enterprises, probably due to the initial cash



A retired school headmaster describes his profitable investment in tea cultivation. In some areas of Kenya, tea-growing may have an advantage over coffee-growing in gaining needed inputs. *(Photo by Chris Barrett.)*

investment required and lack of the necessary know-how. Similar seasonal credit-in-kind schemes exist with the Kenya Tea Development Authority and private sugar companies in western Kenya and with barley, wheat and dairy production under contract farming schemes with processors in the Vakinankaratra region of Madagascar's central highlands.

3. Size matters to farmers' ability to take advantage of emerging opportunities for agricultural commercialization. Processors look for

reasonably large consignments so as to reduce contracting and other transactions costs. Larger farmers therefore enjoy better access to vertically integrated markets in high value tea, dairy and sugar production in central and western Kenya and in high value barley, wheat, dairy and fruit production in Madagascar's central highlands.

In the sites with good market access (Vakinankaratra, Embu, Baringo), we see a positive correlation between farm size, the range of agricultural enterprises undertaken, and farm profitability. In the Vakinankaratra and in central and western Kenya, those households that have been able to invest in dairy cattle have been able to use the steady cash income to purchase more inputs, hire labor as needed on a timely basis, and have enjoyed productivity benefits due to increased nutrient content and organic matter in the soils, which has been especially beneficial for high value horticultural products.

4. Resource access is key in places where crucial inputs cannot be obtained through markets. In the extensive grazing systems of northern Kenya, we find markedly different herd dynamics between our Baringo and Marsabit sites. In Baringo (Ngambo), year-round availability of surface water from the Pekerra River, the Pekerra irrigation scheme, and Lake Baringo and the swamps along its shores reduces households' need to migrate in search of forage and water for their livestock. In Marsabit (Dirib Gumbo), Boran herders live on the northern slopes of Marsabit mountain and thus need to migrate seasonally to lowlands where their herds can find forage and water. In 2000-1, they were unable to negotiate access to grazing areas and watering points, or even rights of way through the lands of neighboring, hostile ethnic groups. As a consequence, they suffered massive herd die-offs. The Ngambo and Dirib Gumbo sites had similar rainfall over the period, but as they experienced quite different wealth dynamics, with the Baringo herds growing, on average, and the Marsabit herds falling sharply.

II. WORKPLAN 2002-03

A. Integration of Activities with Long-term Project Plan

The 2002-3 workplan revolves around four classes of activities—data collection, data analysis, stakeholder consultations and training—that are instrumental to the longer term objectives.

Our team will complete mixed methods data collection to get at the core issues of the project: welfare dynamics and how these relate to households' initial conditions and access to markets and technologies, as well as associated changes in soil quality and land and livestock productivity. By “mixed methods” we mean the combination of quantitative data collection based on structured surveys to construct repeated observations of the same households on the same variables over time (i.e., a “panel data” set) with qualitative data collection based on semi-structured focus group, key informant and individual oral histories designed both to flesh out the stories behind the panel data and to reflect subjects' perceptions of the complex, coupled human welfare and natural capital dynamics.

The second class of activities is analysis of these data. Descriptive analysis should be largely completed during the course of the year. More sophisticated inferential work, drawing on both econometric and simulation modeling as well as qualitative case study analysis, will commence this year. Data analysis will generate written outputs in the form of policy briefs, papers submitted for peer-reviewed conference presentation and publication, and student theses. Analysis also will provide the foundation for active discussion with communities, donors and policymakers about appropriate poverty-reduction strategies for rural Kenya and Madagascar.

This leads to the third class of project activities: consultations with stakeholders in the communities and with the policymaking and policy analysis communities at national level in both Kenya and Madagascar. Throughout the project, we seek to establish and maintain a productive dialogue with key decision-makers so as both to improve the quality of the design and conduct of the research and to make findings available to interested stakeholders at the earliest possible opportunity.

We will continue the series of annual stakeholder meetings as well as the annual team meeting.

The fourth class of activities revolves around degree and non-degree training. The project is investing in or leveraging degree (M.S. and Ph.D.) training for students at Cornell (one each from Kenya, Ethiopia, the United States, Canada and Norway, as well as one from Madagascar who plans to start in January 2003) and the University of Nairobi (two Kenyan Ph.D. candidates). We also are investing in non-degree training for professional staff in both countries' agricultural research communities. In the coming year, we will continue web-based instruction and hold a two-week residential course to complete the bioeconomic modeling training program. Finally, Barrett is co-organizing a learning workshop on “Analytical and Empirical Tools for Poverty Research” to be held at the triennial International Association of Agricultural Economics meetings in Durban, South Africa. The workshop is designed to bring agricultural economists from around the world up to date on methods and theories at the heart of this project, with an emphasis on (and significant external funding for) practitioners and researchers from Africa.

1. Data collection

Our original project design called for panel data collection activities to be completed in the 2001-2 project year. This has proved infeasible in our Embu (central Kenya) site, where we uncovered significant problems with the data set on which we had originally planned to build. This necessitated redesign of the questionnaire and survey methods, ultimately causing us to postpone the first round of data collection until August-September 2002 in that site. The second round of data collection in Embu will take place immediately following the harvest of the short rains season crops, in March 2003. We have surveys finishing up in our western Kenya and Madagascar sites in the fourth quarter of 2001-2 that could conceivably run into the first quarter of 2002-3, but we anticipate having the panel data collection in all sites other than Embu completed by 30 September 2002. Data entry and cleaning will continue through the first several months of the 2002-3 project year.

SOCIAL ASPECTS OF DYNAMIC POVERTY TRAPS

*Stakeholders asked for a social science dimension to complement BASIS's quantitative analysis.
This qualitative work was begun in the first year.*

Objectives

- Characterize, identify, and analyze dynamic poverty processes using social and historical methods
- Identify existing and potential strategies for households to escape from poverty traps and to understand the constraints in employing these strategies

Activities

- Focus group consultations to understand important concepts related to poverty processes
- Case studies of households to construct social-historical profiles of household types
- Key informant interviews to corroborate and expand on issues emerging from focus group and household interviews
- Data analysis on household livelihoods, vulnerability to economic and health risks, risk coping mechanisms, management of assets, investment strategies, gender relations, social capital and networks, natural resources management practices, and the role of off-farm activities
- Follow-up focus group consultations to discuss opportunities and limitations of strategies for poverty reduction

Outputs

- Detailed report for each site describing social dimensions of poverty processes at household and community level, with attention to whether/how welfare dynamics relate to changing natural resource conditions
- Brief narrative on a single family from each site in the style of the *Voices* series put out by the CGIAR's Alternatives to Slash and Burn (ASB) program

Timeline

- Social analysis will follow completion of quantitative surveys in each site and production of transition matrices necessary for the household-level oral histories. In most sites, this will be November 2002-March 2003. Reports will follow and be submitted to Cornell, ICRAF, KARI, FOFIFA and the University of Nairobi.

The basic design of the qualitative work follows the “sequential mixing” design of integrated qualitative-quantitative poverty analysis.

Experienced rural sociologists or anthropologists will be recruited. In each site, an experienced rural sociologist or anthropologist will conduct focus group interviews, followed by in depth case studies/oral histories of households selected from the poverty transition matrices computed from the panel data. This design requires that this social analysis take place following the completion of panel data collection, entry and cleaning in each site and the production by the rest of the BASIS team of the transition matrices necessary for doing the household-level oral histories. The qualitative

field work will take place November 2002-June 2003. *Our team views this combination of quantitative and qualitative methods as critical for understanding the nature and degree of poverty traps as well as evaluating alternative strategies for overcoming them.*

2. Data Analysis

The first data analysis task (after data cleaning) will be estimation of transition matrices for each site. These will be used to select households for the qualitative data collection exercise. They also provide the first glimpses into welfare dynamics in the study sites and will be analyzed as an output, not merely prepared as an intermediate input. More

sophisticated econometric analysis of poverty dynamics will then follow, including work on the relationship between intertemporal change in soil quality and in household welfare. We are still working out the details on estimation methods, but will likely follow methods such as those employed by Carter and May in studying chronic and transitory poverty in South Africa, Lybbert, Barrett, Desta, and Coppock in studying wealth dynamics among Ethiopian pastoralists and by Barrett, Reardon, Webb, and others in studying poverty traps in Côte d'Ivoire and Kenya.

The second major area of data analysis will involve parameterization and calibration of the bioeconomic modeling tool, the CLASSES model, we are developing under this project. This will involve considerable estimation of production functions, market participation equations, investment functions, etc. We are finishing the non-parameterized prototype CLASSES model in the fourth quarter of 2001-2. This bioeconomic modeling work will take advantage of our team's joint work in three of our Kenya sites (Baringo, Embu and Vihiga) with a team of outstanding biophysical scientists at Cornell, ICRAF and KARI under a new NSF biocomplexity grant.

3. Consultations

Our project is targeted toward informing debate on high-profile policy questions highlighted in the new KRDS in Kenya and the Poverty Reduction Strategy Papers (PRSP) in both Kenya and Madagascar. In both countries, the PRSP have identified agricultural and rural development as top priorities towards poverty alleviation and economic growth. KRDS has emphasized problems of risk and vulnerability, market access, and smallholder empowerment as central to agricultural and rural development. The USAID missions in each country are actively addressing these issues through their own programs of work. Toward that end, we are in ongoing contact with USAID missions and local officials and plan national policymaker workshops to be held in Kenya and Madagascar.

We will continue our program of district or community-level consultations with meetings in Embu and Vihiga in January, in Fianarantsoa and Vakinankaratra in March, and in Baringo and

Marsabit in August. We will also convene the key members of the project team from Kenya, Madagascar and the United States for our annual team meeting in Madagascar in March. *The community and national workshops are critical for validating our analyses and having future impact.*

4. Training

Degree training at Cornell and Nairobi will continue. Paswel Phiri and Justine Wangila are each doing dissertation research under the direction of Willis Oluoch-Kosura in the University of Nairobi's Department of Agricultural Economics based on fieldwork done under this project in our western Kenya sites. Andrew Mude is doing a Ph.D. in economics at Cornell, writing a dissertation on poverty traps in our northern Kenya sites. Sharon Osterloh is completing her M.S. in agricultural economics, writing a thesis on microfinance and nonpastoral enterprise investments in our northern Kenya sites. Heidi Hogset is doing a Ph.D. in agricultural economics, writing a dissertation on technology adoption, social insurance and groups and poverty traps in our central Kenya site. Marc Bellemare is beginning an agricultural economics Ph.D. project on Madagascar and Jean Claude Randrianarisoa has been accepted into the agricultural economics Ph.D. program and plans to begin his studies on soil fertility dynamics and poverty traps in Madagascar in January 2003. The Cornell students are all working under the direction of Barrett, as is Ben Okumu, the post-doctoral researcher on the project who is training in empirical methods while playing a lead role in the bioeconomic modeling component of the project.

Web-based instruction will continue in the new project year. We also will hold a two-week residential course at Cornell. This course has nine enrolled students, six of whom (three each from KARI and FOFIFA) are funded by the project, and three of whom (one from ICRAF, one from the University of Nairobi, and one from the LDI project in Madagascar) are funded by collaborating institutions. The LDI project in Madagascar is trying to pull together funding to send a second student from their Fianarantsoa site, where we also work.

“Analytical and Empirical Tools for Poverty Research”

Learning Workshop of the 25th International Conference of Agricultural Economists

Durban, South Africa, 16 August 2003

Organizers: **Chris Barrett** (Cornell University) and **Csaba Csaki** (World Bank)

- 8:15-8:30 **Introductory Remarks (Chris Barrett and Csaba Csaki)**
- 8:30-9:30 **Michael Carter (University of Wisconsin-Madison):** Poverty dynamics: An overview of theory and empirical methods using panel data
- 9:30-10:30 **Jesko Hentschel (World Bank):** Integrating quantitative and qualitative poverty analysis tools
- 11:00-12:00 **Berk Ozler (World Bank):** Poverty mapping: integrating survey and census data to generate more spatially comprehensive poverty assessments.
- 12:00-1:00 **David Sahn (Cornell University):** Welfare comparisons across different measures: concepts and methods. Explain and demonstrate different indicators used to measure well-being of households and individuals, their strengths, weaknesses and consistency. Discuss importance of looking at the entire distribution of well-being in populations (e.g., using tests of stochastic dominance), rather than relying on traditional use of subjective poverty lines or cardinal measures of inequality.
- 2:15-3:15 **Luc Christiaensen (World Bank-Ethiopia):** Dynamic vulnerability analysis using panel data. Recent advances in estimating ex ante risk of being poor in a future period and identifying which policy instruments prove most effective at reducing the risk of being poor.
- 3:45-5:30 Panel on current thinking on poverty reduction policy and rural development: **Jock Anderson (World Bank)**, Gershon Feder (World Bank), **Peter Hazell (IFPRI)**, **Kei Otsuka (Foundation for Advanced Studies on International Development, Japan)**, Tom Reardon (Michigan State University)
- 5:30-6:00 **Closing Remarks (Csaba Csaki and Chris Barrett)**
confirmed speakers in **bold**; others invited
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The final non-degree training planned for the coming project year is a learning workshop on “Analytical and Empirical Tools for Poverty Research” being co-organized by Barrett and Csaba Csaki (World Bank) for 16 August 2003, immediately prior to the 25th triennial meeting of the International Association of Agricultural Economics in Durban, South Africa. The program is intended to familiarize participants, especially practitioners and researchers in developing countries, with state-of-the-art methods and theories of poverty analysis. The program includes the BASIS CRSP Director Carter and other leading scholars in this general area of research.

B. Relationship Between Activities and Key Findings

The project’s data collection and data analysis activities are explicitly aimed at proving a sound characterization of the incidence and severity of

poverty traps in rural Kenya and Madagascar, as well as identification of key causal factors at household and community level and prospective project- or policy-level interventions that might help those seemingly trapped in poverty lift themselves beyond crucial asset thresholds. The project’s design emphasizes in particular questions of factor (e.g., interseasonal credit) and product market access as well as agroecologically appropriate technologies and natural resource management practices. Relationships between human behavior and welfare, on the one hand, and natural capital (here reflected in land and livestock *quality* as well as *stock quantities*), on the other hand, typically elude standard analytical methods.

We therefore explore these relationships econometrically and are developing an improved bioeconomic modeling approach based on systems dynamics methods in close collaboration with a team of biophysical scientists at Cornell, ICRAF

and KARI. Indicators of success in these endeavors will include peer-reviewed conference presentations and publications, citations of this work in research and policy documents, in Kenya and Madagascar or elsewhere, web site hits, attestations by local and national policymakers as to the usefulness of the work for informing the design of rural development and poverty alleviation strategies, and add-on funding received for extensions of the project's research.

The project's consultations and training activities are aimed at facilitating access of key decision-makers in the private and public sectors to emerging findings from the project and of the project's research staff to the insights and reactions of this primary audience, and at building capacity for dynamic welfare analysis and research on coupled dynamics of human and natural systems among national research teams. Key indicators of success in these areas will include the project's effective adaptation to new suggestions and opportunities, others' bootstrapping off this project's activities (e.g., NGO or other research teams' funding proposals that build on our work, documented contact with and attestations by local and national policymakers and agencies, student evaluations of training activities, website hits, and add-on funding for training.

C. Anticipated Outputs

- Policy briefs offering comparative perspectives on different sites (e.g., central versus western Kenya), on access to and ranking of livelihood strategies (building on a BASIS Phase I project), on poverty and activity/technology choice, on inter-site and inter-household variation in poverty-resource linkages, and on characterization of poverty traps and identification of their key causal factors in Kenya and in Madagascar

- "Voices" briefs based on intensive, qualitative, oral history research with households in our samples
- Applied economic theory paper on activity choice and poverty traps
- Keynote paper on "rural livelihoods, welfare dynamics and poverty traps" at the January 2003 DFID-sponsored conference in Nairobi on Rural Livelihoods and Poverty Reduction Policies
- Plenary address on "Rural Poverty Dynamics: Development Policy Implications" at the opening session of the 25th triennial meeting in Durban of the International Association of Agricultural Economics on "Strategies for Reducing Poverty"
- Paper on "Integrated soil fertility management: evidence on adoption and impact in African smallholder agriculture" for a special issue of *Food Policy* on "Input Use and Market Development in Sub-Saharan Africa: Progress Made and Challenges Remaining"
- Paper on wealth-differentiated technology adoption dynamics in Madagascar
- Paper on informal insurance, groups and technology adoption in Kenyan agriculture
- Cornell MS thesis on microfinance and nonpastoral enterprise development in northern Kenya
- Paper on bioeconomic modeling and land management in east Africa
- Trip reports

We will also have a functioning prototype of the CLASSES model, with a preliminary application to at least one site. All material will be regularly posted on the project website:

http://www.aem.cornell.edu/special_programs/AFS/NRM/Basis/.

2002-3 Project Workplan, by Fiscal Quarters

	First Quarter (1 Oct-31 Dec 2002)	Second Quarter (1 Jan-31 Mar 31 2003)	Third Quarter (1 Apr-30 June 2003)	Fourth Quarter (1 July-30 Sep 2003)
Data Collection	Qualitative field work Data entry and cleaning	Qualitative field work Round 2 survey—Embu Data entry and cleaning	Qualitative field work: Embu Data entry and cleaning	
Data Analysis	Estimation of transition matrices for each site	Estimation of transition matrices for each site Econometric work on welfare dynamics and relationship to natural capital dynamics Bioeconomic model parameterization	Estimation of transition matrices for Embu Econometric work on welfare dynamics and relationship to natural capital dynamics Bioeconomic model parameterization	Econometric work on welfare dynamics and relationship to natural capital dynamics Bioeconomic model parameterization
Consultations	Kenya policy workshop	Madagascar policy workshop Madagascar local workshops Kenya local workshops (Embu, Vihiga) Annual team meeting (Madagascar)		Kenya local workshops (Baringo, Marsabit) Kenya policymakers workshop
Training	M.S.-Cornell (Osterloh) Ph.D.-Cornell (Mude, Teklu) Ph.D.-Nairobi (Phiri, Wangila) Post-Doctoral-(Okumu) Bioeconomic Modeling: web-based instruction Bioeconomic Modeling: 2-week Cornell course	Ph.D.-Cornell (Bellemare, Mude, Randrianarisoa, Teklu) Ph.D.-Nairobi (Phiri, Wangila) Post-Doctoral-(Okumu) Bioeconomic Modeling Web-based instruction	Ph.D.- Cornell (Bellemare, Mude, Hogset, Randrianarisoa, Teklu) Ph.D.- Nairobi (Phiri, Wangila) Post-Doctoral (Okumu) Bioeconomic Modeling Web-based instruction	Ph.D.- Cornell (Bellemare, Mude, Hogset, Randrianarisoa, Teklu) Ph.D.-Nairobi (Phiri, Wangila) Post-Doctoral-(Okumu) IAAE Learning Workshop

RESPONSE TO BASIS BOARD OF DIRECTORS

The BASIS Board of Directors reviewed our project and offered a variety of comments. We were asked to respond to five specific concerns raised by the Board, which appear in *italics* below. Our responses follow the comments.

1. Is the project designed to credibly measure environmental degradation? At points, the proposal seems to let technological adaptation proxy for environmental degradation (or lack thereof). How will the project directly measure environmental damage? Can the project assess measures of long-term environmental degradation in its regions?

2. The linkage between poverty and environmental degradation is too facile. Different types of poverty and different types of poor households may have different environmental effects. Board members were not satisfied that “market access” was sufficient to categorize between all types of poor households.

3. There was concern that the relationship between livestock and environment was oversimplified. While it is true that livestock can be an environmental plus in humid areas (fertilizer), and an environmental negative in drier areas (overgrazing), the Board worries that in fact, overgrazing is often more severe in humid areas. The Board thus recommends that the project avoid making too simplistic an association between geography and the environmental benefits or drawbacks of livestock.

We respond to the first three comments as a group because each concerns the project’s incorporation of natural resource dynamics, wondering whether we are overextending ourselves, whether we can collect and analyze the data necessary to measure environmental degradation, and whether we are correctly conceptualizing key issues (the relationships between the environment and technology, poverty and livestock). These are helpful cautions and in many ways signal that we did not communicate our research design as clearly as we might have. Let us clarify these points.

One common denominator to these three concerns is our failure to define sufficiently precisely what sorts of environmental effects we will consider. Our focus is relatively narrow, focused purely on soil conservation and fertility because of their obvious,

instrumental importance of soil quality in agricultural productivity and thus rural incomes. We are *not* studying forests (with the exception of agroforests used for perennial crops and for soil nutrient replenishment), water (the SANREM project with which we are linked is studying water in Kenya), wildlife, pollution, or other environmental questions. We are investigating the dynamics of soils quality through multiple means. First, we have added questions that elicit farmers’ subjective assessment of ordinal changes over time in soil fertility, changes in soil conservation practices, plot histories (fallow, cultivation, etc.) to the repeated surveys being fielded in each site. These data can be used to reconstruct soil quality dynamics econometrically (following methods such as those in Kim et al. 2001 *Agricultural Economics*). Second, the qualitative follow-up work we are undertaking in each site will explicitly investigate soil quality dynamics in individual and group interviews. Third, the new NSF Biocomplexity grant we have won will undertake extensive fieldwork by soil scientists from Cornell, ICRAF and KARI to generate soil nutrient chronosequences supported by detailed lab measurement of soil nutrient and organic matter content and fractionation, structure, and spectral characteristics. These data, matched to socioeconomic data from household surveys, will provide an unusually rich set of data on soil quality dynamics directly linked to longitudinal data on the farming households who control the sample farm plots.

Points 2 and 3 are perhaps most easily addressed. We are not assuming what the relationship between either livestock or poverty and the environment (soil quality) looks like. Rather, these are fundamental research questions at the heart of our program. Does the addition of livestock necessarily improve soil quality, even in the sub-humid highlands areas? In particular, we hypothesize that the crop productivity net gains (mediated by soil erosion and fertility effects of livestock) shift along a two-dimensional gradient defined by rainfall and market access. Overgrazing of forage lands (especially of erosion-prone slopes), crop trampling or pre-harvest grazing, and soil compaction may have countervailing effects that reduce or reverse

the soil fertility enhancing effects of manure-based nutrient cycling. In drier areas, like our two northern Kenya sites, herd size conditions mobility. Small herds may be unable to migrate to take advantage of ample forage and water availability, resulting in localized range degradation where many small herds co-exist. Larger herds, by contrast, can take advantage of spatiotemporal variability in rangeland carrying capacity, minimizing or eliminating any adverse environmental effects. Two of our team are animal scientists (Pell and Rasambainarivo) who are very aware of and attentive to these issues in the sub-humid highlands sites, two of our team (McPeak and Barrett) are doing related research on the drylands sites under the Global Livestock CRSP (PARIMA project), and an Ethiopian Cornell Ph.D. candidate in Natural Resources (Amare Teklu) is doing dissertation research on this hypothesis across all the sites, as well as southern Ethiopian sites, under the PARIMA project and BASIS jointly. The hypothesized livestock-environment linkages are not being assumed but, rather, being investigated.

Similarly, we have made no prior assumptions as to the nature of the underlying relationship between poverty and the environment. Indeed, this is another area of exploration. By modeling livelihood choices as a function of market access and resulting cost and price incentives, a household's asset endowments, and available production technologies, we hope to establish when poverty does and does not contribute to degradation of soils on agricultural lands and if and how appropriate interventions vary across agroecologies and by market access and livelihood strategies (e.g., semi-subsistence farming or wage labor).

4. Concerns were expressed that the 2x2 matrix presentation of research design (rainfall x market access) was too crude. Differences, for example, between northern and western Kenya extend well beyond the level of rainfall experienced. The Board seeks assurance that the project will not attribute all cross-zonal differences to its 2x2 scheme.

The 2x2 research design is purely for the purpose of sample stratification. This is not a control-and-treatment design, as the Board seems to worry. Indeed, the purpose of this design is precisely the Board's concern, or rather its corollary, that variation observed in key dependent variables

(poverty, soils degradation) not be assumed to be solely due to either within-zonal variation (the reason we stratify) nor to between-zonal variation (the reason we establish a wide range of other household-level correlates within each sample stratum).

5. The Board felt the policy impacts as presented are diffuse and sometimes contradictory. They would like to see potential policy impacts expressed more clearly within the policy debates of the region.

The PRSP processes in each country and Kenya's new KRDS are all focused squarely on poverty reduction in rural areas and explicitly emphasize the linkages between poverty and natural resources degradation, including soils degradation on farm. This is one reason why our bioeconomic modeling course has elicited considerable interest in both national governments and why our stakeholder meetings and annual team meeting draw senior level government decision-makers. They plainly see our project as offering analysis and capacity building of value to the major current and prospective policy debates in their countries. There is rapidly increasing awareness that poverty problems may be better couched in terms of welfare dynamics and associated issues of helplessness and investment rather than in terms of conventional cross-sectional measures. Our project has already contributed to that evolution through repeated dialogue with key government stakeholders and leading researchers in both countries who have been actively involved in the KRDS and PRSP processes. We committed ourselves early on to regular stakeholder consultation at multiple levels. Through this process of interaction every several months by various members of our team, we are able to learn what issues policymakers struggle with and to prompt them to think about issues that do not yet seem to be on their radar screens.

Policy impact is necessarily opportunistic. We therefore cannot predict or promise precisely where or with whom our project will ultimately have impact. Our strategy is to maintain regular interactions with key stakeholders across a variety of government, donor and local-level institutions in both Kenya and Madagascar, to work at helping them shape and take advantage of our research and at advancing their thinking on issues of poverty traps and resource degradation in east Africa.

ASSETS, CYCLES, AND LIVELIHOODS:

Addressing Food Insecurity in the Horn of Africa and Central America

Global Constraint 3: *Poverty and Food Insecurity Traps*



Farmers using horses to thresh wheat, South Wello, Ethiopia
(Photo by Peter Little)

Principal Investigators

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Collaborating Institutions and Researchers

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PROJECT PROFILE

The Horn of Africa includes some of the world's poorest rural populations, most volatile political conflicts, and extreme cases of food instability. In these and other impoverished regions, including parts of Central America, natural disasters, such as droughts and floods, can further devastate the lives of rural people by depleting already meager assets and savings and creating conditions of severe food insecurity.

This research program examines the ways that households and communities cope with and attempt to recover from climatic "shocks." The key roles that assets, as well as market and non-market mechanisms play in the coping and recovery processes are highlighted. During particularly harsh natural disasters when severe asset depletion occurs, prices for remaining assets, such as livestock, labor and land often decline, while food prices and credit costs often skyrocket. This pattern further hurts the disaster-impacted poor. In post-disaster periods, markets often move in opposite directions: assets often increase in price as do the costs of labor and land, which inhibits recovery for asset and land-poor households.

The goal of the study is to identify policies that help poor households retain assets during disasters

and improve their access to markets in the recovery period, thus allowing them to avoid relief dependency. Without an understanding of how factor markets relate to cycles of poverty and asset depletion, policy interventions have tended to be restricted to targeted, short-term efforts, such as food aid relief and highly subsidized credit schemes that neglect long-term development and sustainability.

The research project, which builds upon work done under BASIS Phase I in Ethiopia, includes three different research sites—South Wello/Oromiya, Ethiopia, Samburu/Baringo, Kenya, and rural Honduras—that provide very different market and policy conditions. The research design allows comparisons and assessments under different policy frameworks.

The major research site is South Wello/Oromiya, where the greatest data collection effort is focused, followed by Kenya and Honduras, where the project is building on existing studies and databases. In contrast to Ethiopia and to some extent Kenya, Honduran households have relatively good access to factor markets and are able to pursue relatively complex mixes of farm and non-farm activities, and land rentals and purchases.



Support

Core support. Matching provided by Institute for Development Anthropology, Institute for Development Research, Organization for Social Science Research in Eastern and Southern Africa, and University of Wisconsin. Add-on from USAID/Ethiopia.

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ACTIVITIES 2001-02

A. Accomplishments

Research activities were undertaken in all three research sites—Ethiopia, Kenya, and Honduras—yet the bulk of work focused on South Wello/Oromiya, Ethiopia.

1. Ethiopia

In Ethiopia, continuing earlier work under BASIS Phase I, the fourth and fifth round surveys of the household study were conducted in October/November 2001 and March 2002, respectively. The data collected during both surveys have been cleaned and entered. The sixth round (closing inventory survey of assets, food stocks, and other recovery variables) was carried out in June/July 2002, and the data collected were cleaned and verified during August and September 2002.

In addition, complete geo-referenced data for each of the 427 households were collected and preliminary analyses of these data were conducted. Because of the poor road infrastructure and the dispersed nature of settlements, this was an extremely difficult and time-consuming activity. The Geographic Information System (GIS) tools from these data will map key socioeconomic indicators, such as areas of low income, food insecurity, drought vulnerability, and so on.

Other research activities conducted in Ethiopia during the past year included qualitative research on a sub-sample of 35 individual and household heads from our household study to explore individual histories of drought and recovery, unrecorded food and other transfers not captured in the survey, gendered responses to asset de-accumulation and recovery, and ways in which social networks and relationships are used to help individuals and households to cope and recover from shocks. The case study of non-farm activities in South Wello and Oromiya was also designed and started. It focuses on the role of micro-enterprises in supporting household food security and drought recovery strategies.

To more closely link our research programs with policy in Ethiopia, an IDR/BASIS Research and Development Liaison Committee (RDLC) was formed and two meetings were held in Dessie, Ethiopia. The objectives of the RDLC include

documentation of zone and regional policies and directives, inventorying research projects and their activities in the zones, inventorying development projects and their activities in the zones, and organizing seminars and workshops to discuss research and development issues and gaps, research outcomes and policy implications and recommendations. The committee comprises seven members: representatives from South Wello zone administration, from Oromiya zone administration, from the rural development departments of both zones, from the Dessie-Zuria *woreda* (district), from the NGO CONCERN, and from IDR. The RDLC, with the assistance of a research assistant, collected and documented the proclamations and policy directives and related documents from both South Wello and Oromiya zones, including 15 development proclamations, 8 national policies, 18 directives and regulations, five sectoral plans/programs/proposals, and 32 other development-related documents.

In 2001-2002 a new federal ministry and regional departments of rural development were formed in each of Ethiopia's regional states. Responsibilities for food security programs and rural development generally were put in these new organizations, which meant that some of the previous government entities with whom we worked (such as the Food Security Programme) were absorbed by Departments of Rural Development. In June 2002 the BASIS team gave a research seminar to the head of the Department of Rural Development, members of ARARI, and the Department of Agriculture of Amhara Regional State and established an agreement to work with the Amhara regional state through the auspices of the Director of Rural Department and with strong links to ARARI and the Department of Agriculture.

2. Kenya

An additional site in the Horn of Africa was necessary to strengthen research and general policy contributions in the region and globally and to allow a "middle" site between the chronically food insecure and poorly integrated market environment of South Wello/Oromiya and the better food and market-endowed context of Honduras. Two sites in northern Kenya (Ngambo, Baringo District and

Suguta Mar Mar, Samburu District) where chosen. An existing research program in Baringo/Samburu, Kenya (conducted under the Project of the Global Livestock CRSP: PARIMA) is working there, and Little is part of the project.

Community assessments were conducted in 8 communities (sub-locations) in Samburu District and Baringo District. To replicate the research methodology pursued in Ethiopia, community assessments that used both group and key informant interviews were carried out in February and March 2002. The broad goal of the community assessments is to provide socioeconomic and institutional information, both qualitative and quantitative, of the Il Chamus (Baringo) and Samburu (Suguta Mar Mar) communities, in order to supplement the quantitative household data that are already available.

An ancillary purpose is to provide community-based understandings about local drought (shock) coping and recovery strategies and community institutions, trends, and perspectives that cannot be easily gleaned from household surveys. An interview guideline was used that included both closed and open-ended questions. With certain modifications, it was designed to be similar to the research instrument that was utilized in Ethiopia. This tactic was taken to facilitate comparisons between the research sites.

In order to build on and expand the existing PARIMA household study, 15 households each were interviewed in the two sites during the dry (March 2002) and wet seasons (June/July 2002). These are in addition to the data from 60 households in the sites that were collected during June 2000 to June 2002. With some important differences these data are comparable to the information that has been gathered in Ethiopia by BASIS during approximately the same period.

3. Honduras

In Honduras, work was carried out to assess the extent to which communities have recovered from the devastation of Hurricane Mitch. Marco Castillo was there in July and August. (Yigremew Adal was unable to join as planned due to visa problems.) Castillo's trip was preceded by a December 2001

trip by Castillo and Michael Carter in which the basic plans for the research were laid out and tested.

After pre-testing the research instrument in communities in the Tegucigalpa area, the field work began in late July. A total of 30 communities were visited in the Departments of Coymagua, Intibuca, Ocotepeque, Santa Barbara and Colón. Using data from the 2001 Wisconsin-ESA survey of rural Honduran households, a map was



Project enumerator interviewing a farmer in Ethiopia. BASIS participated in six rounds of surveys of more than 400 household in the South Wello and Oromiya Zones of Ethiopia. Smaller samples of individual and head of household interviews allow for more detailed pictures of how people cope with and recover from environmental "shocks." The study sites in Ethiopia are especially prone to devastating droughts. Data from there will be compared to those from Honduras, where many families had to find ways to cope with the impact of Hurricane Mitch.

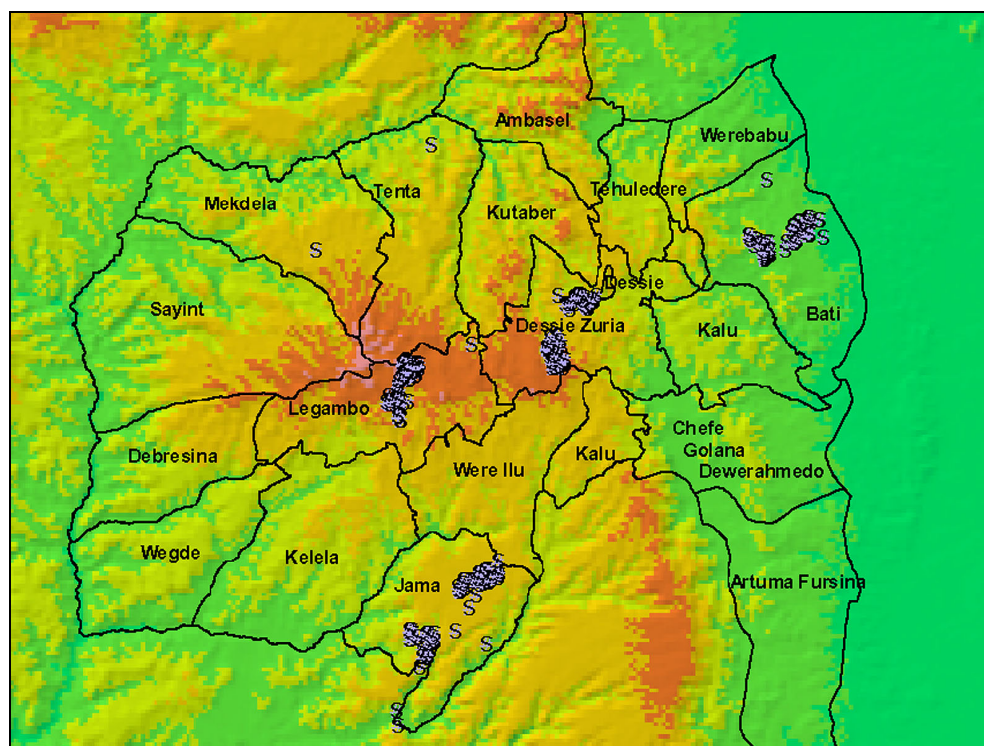
(Photo by Peter Little.)

constructed that shows the percentages of households in each of these areas that suffered asset losses as a result of the Hurricane Mitch. In all cases, the 30 communities visited were sites of household clusters from the 2001 survey. In 10 of the 30, detailed key informant interviews were carried out by Alams Espinal. Informants in each community included religious leaders (Catholic and Evangelical), leaders of civil society groups, as well as local representatives of municipal governing bodies. Espinal currently is compiling and

interpreting the notes on the key informant interviews.

4. Specific activities

1. Three additional rounds conducted of Ethiopia household study (427 households), including a final round that measured ending stocks of assets, household composition, savings, and other indicators of drought recovery or non-recovery.
(Adal, Little, Negatu, Roth, Tadesse)
2. Qualitative data collected on household experiences with drought coping and recovery in Ethiopia over the past 18 years; includes detailed interviews with 35 individuals, stratified to represent different types of households (female-headed, oxen-less, wealthy, etc.).
(Castro, Stone, Debela, Little)
3. Ethiopia data entered and cleaned and preliminary analysis and write-up accomplished of first three rounds of data, June 2000-June 2001. (Cleaning and entry of the final round of data collection planned to be complete by November 2002).
(Aredo, Little, Mogues, Petrie, Negatu, Roth, Tadesse)
4. Qualitative Community Assessments made of 8 communities (sub-locations) in Samburu/Baringo, Kenya.
(Little, Smith)
5. Household data collected in Samburu/Baringo, Kenya; an additional 30 households were added to a study of 60 in the area.
(Little)
6. RDLC in Ethiopia formed.
(Adal, Negatu, Tadesse)
7. Two policy and research seminars conducted in Dessie, Ethiopia and one in Bar Dahr, Ethiopia;



Survey sites in South Wello and Oromiya Zones, Ethiopia. The map shows the *woredas*, or districts, where the household survey occurs. The 427 households cover the agroecological zones found in the area. Dessie Zuria and Legambo are *dega*, or highland, or *woina dega*. The lowland, or *kolla*, is represented by Bati. Historical data show that Dessie Zuria, Legambo and Bati *woredas* tend to experience food deficits. Only Jama is considered a food-surplus location.

(Figure by Michael Shin.)

seminar on drought coping and recovery strategies in the Horn of Africa given to an audience at USAID/Washington.

(Adal, Little, Negatu, Roth)

8. Literature review conducted of drought recovery strategies of pastoral communities in the Horn of Africa.
(Ahmed, Azeze)
9. Data analysis of rural household survey in rural Honduras on the effects of Hurricane Mitch, and follow up field work that looked in more detail at asset and livelihood recovery strategies in a sub-sample of the survey (30 communities).
(Carter, Castillo, Espinal)
10. Addis Ababa University graduate student of M.A. thesis project on Household Livelihood Strategies in South Wello, Ethiopia started and completed (M.A. Degree in Anthropology awarded June 2002).
(Tesfaye)
11. Preliminary analysis and report on spatial characteristics (GIS) of income and food security vulnerability, using geo-referenced data from 427 households.
(Shin)
12. Case study research and report on resource tenure and the role of local organizations in South Wello, Ethiopia completed.
(Pankhurst)
13. Field research and data entry begun for case study on the role of non-farm activities and enterprises in South Wello/Oromiya; (add-on funded by USAID/Ethiopia; final proposal completed and approved during 2002).
(Gebre-Egziabher, Demeke, Little)
14. Additional policy efforts and meetings were carried out that were not in the workplan, including attendance at a regional policy conference sponsored by IFPRI/ILRI and seminars and meetings at AID/W.

B. Problems and Issues

Certain logistical and administrative problems delayed the research program.

1. Visa Problems

It has become extremely difficult and time-consuming to obtain visas for our Ethiopian colleagues. After repeated attempts, it was not

possible to obtain the necessary visas for one of our senior Ethiopian colleagues to travel to Honduras for joint research. This hampered the comparative work between the Horn of Africa and Honduras and pushed back his travel until FY2002-2003. We were told that USAID/Ethiopia also has experienced difficulties obtaining visas for training personnel, but we are hoping to work with them more closely this year in obtaining visas (Little met with the new Agricultural Development Officer at USAID/Ethiopia regarding additional USAID assistance in obtaining visas). At present one of our Ethiopian graduate students still has not acquired the necessary student visa to attend the Ph.D. program at Syracuse University. He planned to begin his program in Fall 2002 but that has been postponed until January 2003 pending approval of his student visa.

2. Reorganization of Ethiopian Ministries and Organizations

There was a major government reorganization in Ethiopia this past year, which delayed case study research and formation of the policy liaison committee. One of our key collaborating government offices—the Food Security Programme of the Department of Agriculture—was placed in a new ministry, Rural Development. At the regional level we are now working through the Department of Rural Development and have forged links with another new government research organization, ARARI. Based on communications between our IDR colleagues and regional and zonal officials, a policy workshop planned for January 2002 was postponed until March 2002. We also postponed case study research on non-farm employment until the summer 2002. The delays due to reorganization pushed much of our data collection and key meetings until late spring and summer 2002, which forced us to push the follow-up community assessments work until FY 2002-2003.

In retrospect this was a prudent decision, because the community assessments now will benefit from the preliminary analyses of the household data and from the analyses of the qualitative interviews and household case histories that were conducted in the summer 2002.

C. Collaboration

During the past year the project collaborated with the Global Livestock CRSP PARIMA project in data collection efforts in a few sites in Kenya. Collaborative arrangements also are in place with IFPRI, which under its East African Highlands Program, is working in the Amhara Region, Ethiopia. During the past year, Little visited IFPRI in Washington, DC and met with the IFPRI Researcher (John Pender) who directs the East African Highlands Program. They discussed modes of collaboration, including exchanges of data and reports and participation in meetings and seminars. During April 2002 Little and Negatu participated in an IFPRI/ILRI/ICRAF/UNECA sponsored Regional Conference on “Policies for Sustainable Land Management in the East African Highlands,” held at the UNECA headquarters in Addis Ababa.

At the meetings Little and Negatu met with several important policymakers from the Amhara Regional State (including ARARI) and the federal ministries in Ethiopia, and established collaborative arrangements with other members of the East African Highlands program, including the Agricultural University of Norway and the International Centre for Research in Agroforestry (ICRAF). Little and Negatu met with Brent Swallow of ICRAF about collaboration with a new ICRAF effort looking at natural resource policies in the Amhara Region in collaboration with ARARI. (Little had met earlier with Swallow while in Kenya during March 2002.) Since tree planting and sales are such an important drought coping and recovery strategy in South Wello/Oromiya, BASIS welcomes the ICRAF collaboration and ensured Swallow that we would exchange research materials and invite him to BASIS seminars and meetings.

The project will make additional efforts to forge linkages with agencies working on rural

development in the Amhara Region. At present the project has held talks with several NGOs in the region (including Save the Children-UK and World Vision International). The project’s recently formed RDLC has a formal arrangement to disseminate research findings and provide policy recommendations to the NGO, Concern International. At the June 2002 meeting of the RDLC a summary set of research findings on selected topics were disseminated to NGO personnel and policymakers in the region.

D. Key Findings

During the past year several findings resulted from the research program. These findings are very preliminary and were obtained prior to final cleaning of the data. Tentative results include the following.

1. Reaccumulation of Assets from 1999-2000 Drought, Ethiopia

Preliminary analysis of data from rounds 1-4 (June 2000 to December 2001) of the household study revealed some preliminary recovery of households from the drought of 1999-2000. This trend mainly is reviewed in herd reaccumulation, but shows a distinct gender pattern whereby male-headed households are reaccumulating larger numbers of animals than female-headed households, although the latter are accumulating herds at a faster rate. Table 1 shows the pattern of landholdings by gender of household head, while Table 2 documents the pattern of livestock holdings and reaccumulation of herds by gender of household head. Not only are herds smaller among female-headed households but landholdings also are considerably smaller—more than 40 percent of female-headed households are found in the bottom quartile of farm sizes.

Table 1 Household Characteristics by Landholding, South Wello/Oromiya

	Bottom Quartile Farm	Lower Middle Quartile Farm	Upper Middle Quartile Farm	Upper Quartile Farm	Overall Average
1. Total Farm Size (timad)	1.40	3.11	4.46	6.86	3.86
2. Gender (% Female HH head)	41.2%	26.5%	15.7%	12.0%	24.1%
3. TLU holdings/HH	1.10	2.44	3.03	4.41	2.69
4. Association membership* – None	28.9%	17.1%	5.2%	4.0%	14.1%
5. Association membership* – All	18.4%	36.8%	61.7%	62.0%	44.4%

*Membership in different credit, savings, and labor groups.

Based in part on tables constructed by Ragan Petrie and Tewodaj Mogues.

Table 2. Herd Reaccumulation, June 2000-December 2001 (post-drought period)

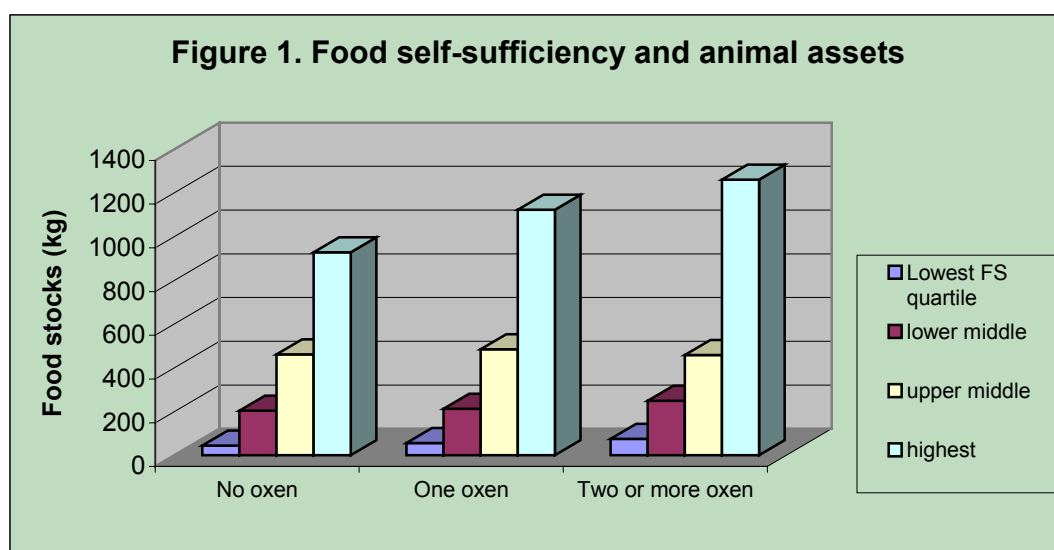
Livestock species	6/00	12/00	6/01	12/01
Oxen	276	268	305	305
Total cattle	954	965	1,068	1,077
Sheep	710	719	943	1,118
Goats	232	276	359	433
Avg. TLU per male HH	—	3.27	3.94	4.37
Avg. TLU per female HH	—	1.62	2.49	2.67

Based on Little, n.d.

Table 3. Household Characteristics by Food Security Status

	Food Security (FS) quartiles:	Lowest FS	Lower Middle FS	Upper Middle FS	Upper FS	Overall Average
1. Land Access	Total Farm Size (timad)	2.9	3.56	4.14	4.94	3.86
2. Gender	Male headed HH	51.20	210.32	472.23	1144.26	531.92
	% of HH's	19.7%	25.0%	27.1%	28.2%	75.9%
	Female headed HH	37.95	204.28	455.06	1057.92	290.37
	%. Of HH's	44.4%	27.8%	16.7%	11.1%	24.1%
3. Oxen Access	No oxen	43.55	202.82	461.12	927.3	276.18
	No. of HH's	100	79	52	22	253
	1 Oxen	55	211.54	484.04	1121.8	615.76
	No. of HH's	13	26	42	45	126
	2+ Oxen	75	248.3	458.06	1260.06	893.11
	No. of HH's	2	10	16	41	69

Based on tables constructed by Ragan Petrie and Tewodaj Mogues



Based on data analysis by Tewodaj Mogues.

2. Oxen Ownership, Poverty and Food Security

Most previous studies of rural Ethiopia highlight the significance of oxen ownership as a key to food security and as the most important measure of rural wealth differentiation. Our preliminary data show that access to oxen does affect food security and poverty but that the issue is more complex than originally perceived. Table 3 shows the effects that oxen ownership has on food security in South Wello.

In looking at individual cases of oxen ownership and access, the issue appears more complex than what is noted in the table. In her draft output Stone (2002: 15-16) points out that:

Female heads of household may be more likely to sharecrop their fields out to male farmers with their own oxen, reducing their harvests by 50%. To accommodate the lack of male labor for plowing, and the fact that many of them do not own two oxen, these female heads we interviewed do employ a wide range of different strategies to secure access to these assets.... Out of 15 interviews, we recorded 9 different ways to get a field ploughed only one of which involves owning two oxen. These include:

- a. Own two oxen, provide own plowing labor.
- b. Own one oxen, match it with the one oxen of another (*macamada*). Provide own plowing labor. Have the obligation to loan your oxen for use on your partner's field. If not, may have to pay the owner of the second oxen some grain.
- c. Own no oxen but hire someone with a team of two oxen to plough your field. Reported as fee of 3-4 birr a day by one female head.
- d. Own no oxen but ask neighbors or relatives for help. You are then obligated to assist them on their farm when they need help.

Stone describes other mechanisms by which poor households can obtain both oxen and the labor required to use them. In short, while lack of access to oxen may be associated with the poor, especially female-headed domestic units, there is some question whether it is the primary cause of food insecurity and poverty in the area.

3. Non-Farm Activities and Food Security

The nature of non-farm activities and waged employment shows the overwhelming importance of food-for-work schemes in the area, a form of food aid widely utilized in Ethiopia. In Table 4 more than 80 percent of what is labeled 'Work off-farm for cash/in-kind' is food-for-work (FFW) employment and more than 50 percent of households during the first-half of 2001, after the drought had ended, were still involved in FFW activities. FFW activities even are important for farmers in the upper quartiles of income earners (see Figure 2), while self-employment ("petty trade") is especially important for the poorest households. Female-headed households show a greater proclivity to engage in diversified income activities, such as petty trading, than do male-headed households. The latter activity also is most important during the most severe periods of food insecurity ("6/00-12/00" column in table 4), when the poor are especially dependent of small sales of food, firewood, and local beer. Note that in figure 2 the poorest quartile of households had negative income, which meant that costs of farm inputs and trading activities actually exceeded their revenues. Once again, the preliminary nature of these analyses should be emphasized.

Table 4. Non-Farm Work and Self-employed Activities (% of households)

	6-12/00	1-6/01	6-12/01
Work off-farm for cash/in-kind	41.8%	53.9%	46.8%
Trading/Self-employed	33.6%	24.9%	23.2%

Based on Little n.d.

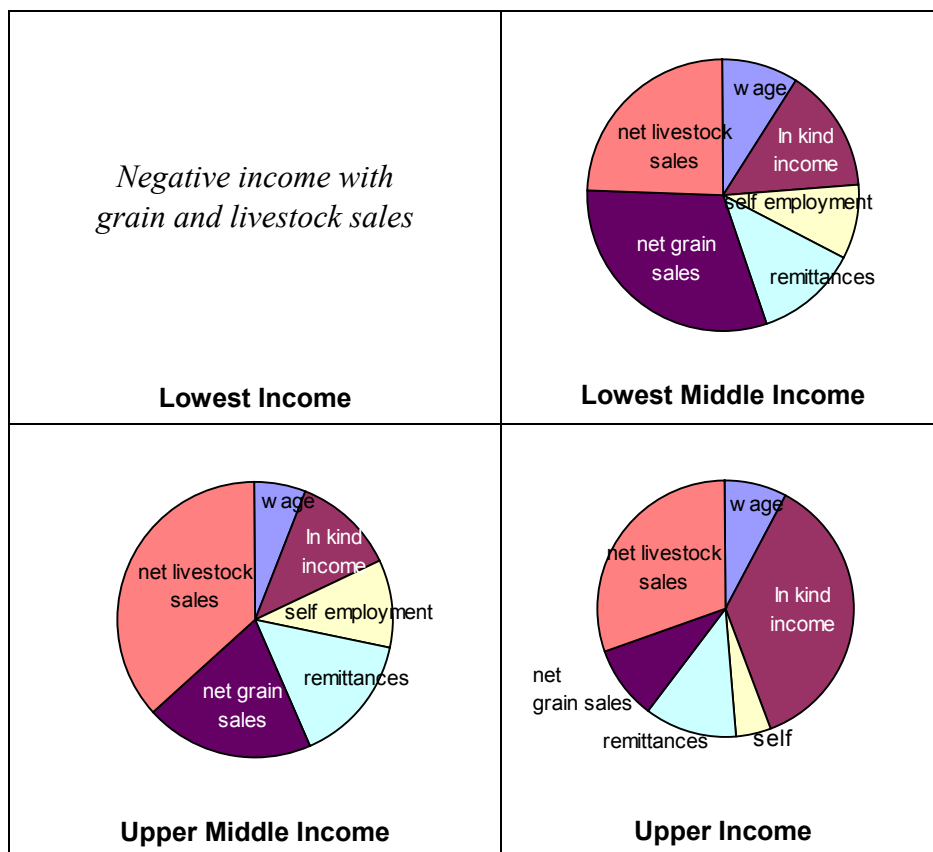
4. Poverty and Social Support Mechanisms

Surprisingly, the household survey data generally show that the poorest households—those in the lowest income quartiles and farm size categories—

are least likely to be members in reciprocal labor groups, informal savings groups, or other local social groups. Table 1 shows that 62 percent of households in the upper farm quartile are members in reciprocal labor (*wonfel* and *debo*) and informal savings/credit groups, while only 18.4 percent of households in the smallest farm quartile have this status. Although the latter are the most vulnerable

to the vagaries of drought and other economic “shocks,” they apparently lack sufficient resources to participate in certain local support institutions. Some food and money transfers between wealthier and poorer households take place, which assists the latter during periods of hardship, though the amounts are miniscule compared to what is provided by public assistance (food relief).

Figure 2. Income Earning Activity by Income Quartile



Based on data analysis by Ragan Petrie

WORKPLAN 2002-03

A. Research plan

The research program for this year will include data analysis, an annual repeat round of data collection in Kenya and Ethiopia, additional qualitative research at the community level in Ethiopia and Kenya, analysis and write-up of the different research sites (Kenya, Ethiopia, and Honduras) in anticipation of the required comparative analyses to be conducted in Year 3 (comparative write-up will begin in this planning year), and research and policy seminars.

Specifically, this year's research plan will comprise five key components:

1. one repeat round of data collection in South Wello/Oromiya, Ethiopia (427 households) and Baringo/Samburu, Kenya (90 households) on livelihood, income, and asset recovery since the 1999-2000 drought,
2. data cleaning, entry, and analysis of South Wello/Oromiya household data set and write-up of five key research papers,
3. follow up interviews in South Wello/Oromiya communities where original community assessments were conducted in 1999,
4. analysis and write-up of Honduran data collected during the past year,
5. joint meeting of Honduran research team and Ethiopian team and visit by Ethiopian researcher(s) to Honduras (if visa formalities can be overcome).

Much of this year will be devoted to data entry, analysis, and write-up of the Ethiopian household study, where the last repeat round of data collection was completed in June/July 2002. Since the original baseline was conducted in June 2000, six rounds of data collected have been completed. For the Ethiopian sites, data analysis and papers will focus on identifying the roles that factor markets play in shock recovery and coping, the role that non-farm activities play in household recovery, the role of policy (including food aid) in recovery strategies, and the effects of shocks on different elements of the population—female-headed, landless or near landless, remote/isolated, and stockless households.

1. Ethiopia

The intensive household data collection (three times per year) in South Wello has ended, and now data on assets, food stocks, and other recovery indicators will be collected only on an annual basis. These annual updates are critical to gauge where communities and households are on the recovery/non-recovery cycle. Final data cleaning and data analysis of the household data set will take at least six months.

The repeat study of the community assessments that were conducted during the 1999-2000 drought will be conducted in the coming year to see how community-level variables and perceptions have changed. Work on GIS analysis and the qualitative studies of individual and household recovery strategies will continue.

South Wello/Oromiya comprises the primary research sites for the project and for the designated regional and national policy work. It includes the bulk of the primary data collection activities, the national and regional policy work, and the training activities under the project. While the Honduran and Kenyan sites will contribute to global policies and frameworks for understanding the effects of different policy scenarios, the Ethiopian program is heavily oriented to regional (Amhara State) and national policy concerns and actors, in addition to global policies for alleviating disaster vulnerability and assisting the poor with recovery.

Policy efforts will continue during the year and bi-annual meetings of the BASIS-RLDC will be held in Dessie and the regional capital of Bar Dahr. During the coming year a series of policy briefs that address both national and international development issues will be produced from the study's research findings. At least two policy workshops in Ethiopia are planned during the year.

For Ethiopia, this year's activities will focus on:

- data cleaning, entry, analyses, and write up of the South Wello household data,
- annual repeat round of sample households to assess where they are on the shock recovery cycle,

- follow up on Community Assessments, conducted in June 1999, to assess community perspectives and strategies on recovery,
- research seminar held either in Dessie or Bar Dahr, and a policy workshop held in Bar Dahr,
- funding US and Ethiopian graduate students and Ph.D. training for one Ethiopian social scientist.

2. Kenya

To bolster the sample size (60 households) of the PARIMA project in Kenya, create a more representative rural sample, and allow for added longitudinal analyses, BASIS added an additional 15 households in Suguta Mar Mar and 15 non-randomly selected households that were part of Little's original 1980-81 study in Ngambo, Kenya. BASIS carried out a baseline and one repeat round survey of these households to complement PARIMA's ongoing data collection.

Annual updates on a very limited number of households (30) will be conducted. Efforts to do comparative analyses with the Ethiopia research sites will be started.

For Kenya, this year's work will include:

- data cleaning, entry, and analyses of Baringo/Samburu household data,
- annual repeat round of sample households to assess where they are on the shock recovery cycle,
- follow up qualitative data collection on sample households.

3. Honduras

Data collection in Honduras is complete and the task of conducting comparative analyses with the Ethiopian study will be initiated. Meetings between the Ethiopian and Honduran researchers are planned for this year.

BASIS analyzed data from the earlier survey of 800 households in order to identify household and communities hard hit by Hurricane Mitch (especially as evidenced by asset losses), or had interesting reported strategies for having dealt with the losses. Qualitative data collection was carried out in approximately 16 of those communities in August and September 2002. Combined with the already existing household data and a planned follow-up visit to the communities (Fall 2002) to gather additional qualitative data using the

community assessments methodology developed by the project in Ethiopia, the goal during this year will be to write a Honduran-specific paper on disaster recovery after Hurricane Mitch and its policy implications, and to write a comparative paper on similarities and differences in strategies between how households and communities cope with and recover from disasters in Honduras and the Horn of Africa.

For Honduras, this year's work will include:

- data entry and analysis of 2002 surveys and interviews additional fieldwork in Fall 2002,
- write-up of final report on fieldwork conducted in 2002 that explores the coping and recovery strategies from Hurricane Mitch.

4. Cross-Regional and Comparative Work

During the coming year it is hoped that the Ethiopian researcher, whose visit has been delayed due to visa problems, can follow up on the qualitative work in selected communities. Other planned activities include a meeting in Ethiopia of Ethiopian and Honduran researchers to discuss research findings and a strategy for conducting comparative analyses. A joint paper will be written that pays particular attention to differences in market (especially factor markets) and policy environments, the role of non-markets organizations, mechanisms, and strategies for coping and recovery, and factors that inhibit recovery and cause poverty traps for poor households.

Activities include:

- participation by Ethiopian researcher in Honduran field research,
- meeting of African and Honduran researchers in Ethiopia (to be held in Addis Ababa, Dessie, or Bar Dahr),
- joint report on "Comparisons in Disaster Coping and Recovery Strategies between the Horn of Africa and Central America."

B. Key Indicators and Policy Impact

1. Regional

During the past year and through the efforts of IDR, the project formed the RDLC in the study region.

The RDLC is chaired by a senior government official from the South Wello administration. Through the formation of this eight-member committee, the project has forged strong links to several government departments and private development agencies and a collaborative arrangement with a major international NGO (CONCERN International). It also has met with other NGOs, including Save the Children-UK and World Vision International. The formation of RDLC will contribute to the capacity of our local partners to carry out policy-oriented analyses of poverty and factor markets, ensure that research results will be disseminated to key policymakers and agencies, and provide an important policy lobbying group for the BASIS research program. The RDLC will meet twice in the coming year.

2. National and regional

The Amhara Regional Government's recent "five year plan" has among its top priorities increased regional food security, improved access to credit by rural populations, and growth in rural employment. The research and workshop activities in this year will complement these objectives and be in a position to assist regional and zonal policymakers in understanding the constraints to improved food security and income growth. Because of the complexity of the decentralization program in Ethiopia, a related policy working group is being formed at the regional state level (Amhara Regional State) under the coordination of the Rural Development Department. In 2001-2002 a new federal ministry and regional departments of rural development were formed in each of Ethiopia's regional states. Responsibilities for food security programs and rural development generally were put in these new organizations, which meant that some of the previous government entities—such as the Food Security Programme—that we worked with were absorbed by Departments of Rural Development.

In January the project will hold a joint seminar with members of the RDLC and the regional state and the preliminary findings from the South Wello/Oromiya household studies will be presented. (This venue will help to establish the groundwork for a larger policy workshop to be held in Ethiopia during the summer 2003.) It was agreed that BASIS would present preliminary findings on

four strategic topics: (1) identification of the most vulnerable households in the region and the causes of their poverty and food insecurity, (2) the role that government policies have played in local drought-coping and recovery strategies, (3) the effects of food aid on coping and recovery strategies, and (4) the role of non-farm employment in recovery strategies and its scope for expansion. Because some of these issues will require analysis of all six rounds of household data, the January presentations would only be preliminary and based on the first three rounds of data (June 2000- June 2001) and the Summer 2003 presentations would be based on preliminary analysis of all six rounds (June 2000-June 2002).

3. Global

International development agencies and policymakers increasingly recognize the difficult problems of disaster coping and prevention, poverty and asset loss, and identifying the means of sustained disaster recovery. Our approach of addressing the linkages among asset cycles, factor markets, food insecurity, and poverty is consistent with USAID's programs globally, in the Horn of Africa, and in Ethiopia. The project will continue meetings with AID/Washington, the Bureau of Disaster, Conflict, and Humanitarian Assistance, the Office of Foreign Disaster Assistance, the Africa Bureau, the Greater Horn of Africa Program, and REDSO/East Africa. Because this year's activities will begin to make comparisons across sites under very different market and policy regimes, the project will be in a position to contribute to policies for sustained development following severe economic shocks whether climatic-, conflict-, or domestic policy-induced.

In 2001 the United Nations designated the Horn of Africa as a global priority area because of its ongoing conflicts and long-term food security problems. The Secretary General formed a task force, headed by the Executive Director of the World Food Programme, to develop an accelerated program to alleviate poverty, food security, and social conflict in the region. BASIS research here will be of direct relevance to this new initiative, as well as ongoing work of other international agencies (such as the World Bank and IGAD) focused on disaster recovery and poverty alleviation in the Horn of Africa and elsewhere.

The project will build local capacity in the Horn during FY2002-2003 through Ph.D. training for African graduate students, supporting local publication series, and supporting participation in international meetings and writing projects by national and regional collaborators. Grants for field research and thesis write up will be provided to one African graduate student from Addis Ababa University, while graduate student assistantships will be provided at BASIS institutions (including the Institute for Development Anthropology and the University of Wisconsin).

Syracuse University is providing a scholarship and assistantship fellowship to an Ethiopian graduate student who worked under BASIS to pursue a Ph.D. in Anthropology. Another Ethiopian student who worked on BASIS is attending the Ph.D. program in Anthropology at the University of Kentucky. During FY2002-2003, a third Ethiopian graduate student (an IDR staff member) will be attending a US Ph.D. program in Development Studies/Public Administration, with BASIS funding. (The Syracuse University and University of Kentucky graduate students were awarded competitive university scholarships and assistantships and no BASIS funds have been allocated for their training.)

C. Anticipated Outputs

During this year emphasis will be on cleaning the large household data set from South Wello/Oromiya, preliminary papers and research briefs from the Ethiopian data set, publication of a Honduran report, comparative paper on Honduras/Horn of Africa on disaster coping and recovery strategies, and seminars and workshops.

Specific outputs:

1. Research/policy seminar in Bar Dahr or Dessie, Ethiopia
2. Research meeting of Honduran and Ethiopian researchers in Ethiopia (and a possible reciprocal meeting in Honduras)
3. Research and policy brief on “The Role of Assets and Factor Markets in Disaster Coping and Recovery Strategies”
4. Policy workshop in Ethiopia
5. Ethiopian Household Data Set
6. Research reports:
 - “Agricultural Policy Framework as it Relates to Food security and Poverty Alleviation in South Wello/Oromiya, Ethiopia”
 - “Land Redistribution and Policy Framework in Amhara Region”
 - “Food Self-Sufficiency or Income Security? Managing Labor and Assets to Secure Livelihoods and Food Security in South Wello, Amhara Region, Ethiopia”
 - “Non-Farm Employment and Wage Rates: An Analysis of Livelihood Strategies, non-Farm Income and Expenditures”
 - “Food Production, Technology and Marketed Surplus”
 - “A Case Study of Non-Farm Activities and Employment in South Wello/Oromiya, Ethiopia”
 - “Comparison of Livelihood and Disaster Recovery Strategies in Northeastern Ethiopia and Northern Kenya” (journal submission)
 - “Retrospective Accounts of Responses to Drought by Female and Male Headed Households of Bati and Dessie Zurie Woredas, South Wello and Oromiya Zones, 2002” (research paper and journal article based on summer 2002 field research)
 - “Methodological Lessons from Qualitative and Quantitative Research on Food Insecurity and Poverty in the Horn of Africa” (journal submission)
 - “Drought Coping and recovery Strategies among Pastoralists in the Horn of Africa: A Review of the Literature”

Schedule of Activities

	Year 2: Oct 2002 to Sept 2003			
Cross Regional Activities and Synthesis				
Research visits to Honduras and write-up of Honduran research results				
Central America/Horn meeting in Ethiopia;				
Comparative paper and analysis between Ethiopia and Honduran experiences				
Ethiopia				
Data entry, analysis, and write-up of South Wello household survey				
One repeat (annual) round of household data collection				
Qualitative research—repeat of community assessments				
Policy and research seminars				
Completion of Report on the Role on Non-Farm Activities and Enterprises in Food Security in South Wello/Oromiya				
Ph.D. training for Ethiopian social scientist				
Comparative Horn of Africa Site (Kenya site):				
One repeat round (annual) of household data collection and qualitative research				
Data analysis and write-up of Kenya data				

III. Response to BASIS Board of Directors

The BASIS Board of Directors raised four areas where they wanted clarification and assurance that concerns would be addressed. Below are the Board's issues and the project's responses.

1. The Board would like assurance on how the data collected from the three sites will be compared. This is an issue that needs to be addressed prior to collecting the data. The time and energy invested in insuring this comparability will greatly strengthen the impact of the research analysis.

There are at least three levels in which comparability in data collection and analysis are being achieved: (a) these are data collection and comparisons between the different sites within Ethiopia, with the goal of contributing to regional and national development policy in Ethiopia; (b) comparisons within the Horn of Africa between Ethiopia and Kenya, with a goal of contributing to understandings of food insecurity and disaster recovery in that multi-country region; and (c) comparisons between the Horn of Africa and Honduras, with a goal of contributing to global understandings and policies aimed at improving coping and recovery strategies from disasters. Although the Ethiopian work is described as "one site," it actually entails 8 different locations spread across four distinct administrative *woredas* (districts). The study used a sampling system that stratified communities by agroecology and distance to market centers, as well insured that at least one of the *woredas* was a food surplus area. The South Wello/Oromiya area is large enough that there is significant cultural, ecological, and infrastructure differences within the study region itself. The household survey, community assessments, and household and individual case histories have been designed to compare differences between the different locations in terms of a number of variables, including (1) agroecology; (2) market access; (3) susceptibility to drought and food insecurity; and (4) demographic factors. Because the study was designed to capture the diversity of the South Wello/Oromiya area, a zone that is similar to other areas of Amhara Regional State and Ethiopia, the comparative work will have general applicability to large parts of Amhara and other disaster-prone areas of Ethiopia.

As was originally stated in the proposal, for cost and logistical reasons and in order to capture a longitudinal perspective—which is important for understanding disaster/recovery cycles—the project in two countries (Kenya and Honduras) is building on already existing studies and data sets. Therefore, it was not possible to reach agreement on all aspects of data collection prior to research. However, during the past year agreement was reached on replicating some of the Ethiopian methodologies in the Kenyan and Honduran sites, especially qualitative work at the community level, to increase data comparability. In Kenya, the same methodology and interview guidelines (with some modifications) that have been used in Ethiopia were applied in Kenya during the past year, and would have been used in Honduras had the Ethiopian researcher been able to attain the necessary visas. Hopefully the qualitative research in Honduras will benefit from input from the Ethiopian team during the next year.

Because two of the project's researchers directing work in the other country sites (Little in Kenya and Carter in Honduras), also are part of the BASIS project, a general agreement has been reached on what variables we will look at specifically. These include measurements related to assets, land holdings and land rights, land acquisitions, human capital (education levels), credit access and use (both during disasters and recovery periods), household income levels and diversification, agricultural and livestock production, and access to social capital (informal labor and savings groups, church and religious groups, kin and clan-based mutual help groups, etc.). Measurements of factor market access and use among households in all three country sites will be important: percentage of households who have access to credit during disasters and recovery periods, percentage of household income from non-farm employment, and so on. The two studies of drought and drought recovery in Kenya and Ethiopia cover almost exactly the same time period (March 2000 to July 2002, with planned annual updates in 2003 and 2004). While the study of Hurricane Mitch (Honduras) and its recovery period covers a slightly different time period, follow up data also were collected in 2001 and 2002.

It should be noted that we never anticipated under this project to create an integrated data base that incorporated data from all three study sites, as has been done for the different sites in Ethiopia, as well as within Kenya and Honduras. Instead, the project will compare the different sites in terms of a range of measurements that were discussed in the previous paragraph. As noted above, a second level of comparison will be within the Horn of Africa between the Kenya and Ethiopian sites, where drought is the key natural disaster and the end result can be serious food insecurity problems that can result in famines (such an extreme outcome is unlikely in the Honduran case). Because the Horn of Africa is among the poorest and most food-insecure regions of the world, this comparative work will inform regional policies and programs aimed at breaking the food aid and disaster syndrome, and moving communities toward more sustainable development paths. This comparative work will begin this year but will not be completed until Year 3.

Finally, the third level of comparison will be aimed at addressing larger theoretical and global policy issues and mainly will involve comparison between the Honduran and Ethiopian research. This work will take place and be completed during the current planning year. This comparative work will document how asset-use strategies and livelihoods vary under different market regimes; how social capital and organizations are mobilized to substitute for markets in coping and recovery strategies; and the interaction between factor market policies and disaster coping and recovery strategies and cycles. This comparative work will be of direct relevance to the growing literature on poverty and natural disasters, the interaction of market and non-market institutions in disaster coping and recovery, and the differential impacts of disasters on different social groups and sub-populations; and to the donor community who are increasingly allocating scarce development resources to disaster and emergency assistance and seeking solutions to the perennial “crisis” situations that they confront.

2. The Board would like greater clarity on how social networks were being defined and operationalized through the research, specifically when households are not enduring institutions and are themselves dynamic.

The project recognized early on that the standard ways of measuring social networks and social capital through statistical means/frequencies were inadequate to fully capture the importance of different organizations and networks both for the individual and household, and for disaster coping and recovery strategies. Strictly measuring the number of organizations and networks that households and individuals count among their social capital only partially captures the importance of these organizations. These data can also be biased by the presence of an active church, NGO, or grassroots organizer in the area. Statistical measurements also do not capture how these social networks and organizations actually operate and whether or not they really buffer households and communities against the effects of disasters and assist them in recovery. For these reasons, the project has engaged in a series of individual case histories in the study sites to collect qualitative data on how individuals and households have utilized social networks during disasters and recoveries (i.e., not just whether they are members of such groups) dating back to the mid-1980s; and developed a series of interview guidelines to capture these kinds of social data. This research will help to identify which of the different networks and organizations still provide insurance functions and are vitally important; those which operated in the past but are no longer effective; and those new forms of social capital that have emerged in the past decade and substitute for indigenous forms of social networks. In Ethiopia, for example, we have learned that some female-headed households who have lost oxen in a drought participate in at least eight different social networks by which they can gain access to oxen for plowing after droughts.

These ethnographic data provide good contexts to the statistical data generated by the household surveys and will provide “case studies” in reports to inform both academic and policy audiences about how social networks and social capital operate during disasters and recoveries; how social networks interact with market institutions and processes; and how programs and policies can build on their positive roles in certain circumstances.

The individual case histories that have been conducted during the past year looked specifically at the issue of how households were defined locally; their endurance and fragility; and how they

were embedded in extra-household networks of support. This research was especially important in rural Ethiopia where periodic land redistribution and chronic food aid programs have generated a very high proportion of very small and unsustainable domestic units, often headed by females. Many of these units really do not operate as independent economic units but depend on networks of married kin and in-laws for support. The extent to which their survival (and perhaps creation) is a function of land redistribution programs—which gave land to every household head—and food aid programs is a research question that the project should be able to answer. In fact, it is possible that land redistribution and food aid programs may actually allow some nonviable households endure longer than would have been possible otherwise. The work that we are doing on social networks and organizations addresses the BOD’s concern that households may not be enduring institutions.¹

3. The Board was concerned about the use of factor market depth (which itself is a loose definition) to contrast the differences between Ethiopia and Honduras. The differences between the two countries are more complex and beg for a more refined definition.

The project fully agrees that the differences (cultural, historical, political, and so on) between Honduras and Ethiopia are immense. Since we are addressing in part the role that factor market access (land, labor, and capital) plays in disaster coping and recovery, we used a very crude measurement of factor market “depth” to rank the Ethiopian, Kenyan, and Honduran sites. It was based more on what we knew intuitively and from the literature, than on a rigorous definition of factor market “depth.” A more refined definition will be used that distinguishes the sites by the importance of different factor markets in household coping and

¹ Interestingly the longitudinal data collected in Baringo, Kenya shows that households can be very enduring organizations and many have persisted since the 1970s. A considerable amount of research by the late economic anthropologist, Robert Netting, showed that households often are enduring forms of social organization, even in contexts of widespread social change and disaster (Netting, R. 1993. *Smallholders, Householders: Farm Families and the Ecology of Intensive, Sustainable Agriculture*. Stanford: Stanford University Press).

recovery strategies. This definition of factor “depth” will include: the proportion of households who participate in different land markets, waged/labor markets, and/or credit markets. It will allow us to understand the extent to which market institutions (as opposed to non-market mechanisms) organize how households access and allocate land, labor, and credit. Already preliminary analyses of the Ethiopian data show that the “depth” of formal factor market development is very low in South Wello/Oromiya: less than 5 percent of households lease or rent land and no households sell/purchase land and less than 20 percent of households earn income from “selling” labor. In fact, private land markets are illegal in Ethiopia and until the past decade the hiring of rural labor for cash also was not allowed. By measuring the frequency with which Honduran and Ethiopian households gain access to land, labor, and credit through market institutions in their coping and recovery strategies will provide a good measurement of the extent (“depth”) of factor market development in the two countries.

4. The Board felt that the research has a great deal to offer toward numerous policy debates in the region (moving from relief to development, coping mechanisms w/shocks, w/poverty). The relationship between the research and current policy debate needs to be more carefully expressed.

The project appreciates this comment and has come to recognize the powerful policy implications of its research not only for development policy in the Horn of Africa, but in other shock-affected regions (Central Asia and South Asia) where moving from “relief to development” is a major development concern. During the past year, the project has attempted to more carefully link its research to policy:

1. This is being achieved at the country-specific level through the creation of the RDLC in Ethiopia and holding three different policy seminars/workshops in the country to establish means for insuring that research results are accessible to policymakers. Policy and research Briefs will be produced this year for January and June meetings to be held in Ethiopia.
2. In the Horn of Africa region policy links will be strengthened by working with other regional organizations, such as USAID/REDSO and IFPRI, who are engaged in policy work related

to food security and rural development. As noted earlier in the workplan, the BASIS PI and Co-PI participated in a Regional Policy workshop, held at UNECA, and will continue to work collaboratively with regional policy projects and organizations in the Horn. The comparative work between Kenya and Ethiopia will result in a policy Brief that addresses ways by which Horn of Africa communities can break the “food aid” syndrome and move toward more sustainable development.

3. The project will make further attempts this year to articulate our work with larger global policies concerned with disaster prevention and recovery. The comparative work between two different

regions—Horn of Africa and Central America—will provide an opportunity to link our research with global policy issues. During the past year project researchers gave seminars at AID/W and met with members of central AID bureaus concerned with disaster programs and policies. Along with the BASIS project “Rural Markets, Natural Capital, and Dynamic Poverty Traps in East Africa,” we have been asked to help organize the 2004 *BASIS CRSP Lessons Learned Policy Conference* titled “Combating Persistent Poverty in Sub-Saharan Africa.” Planning meetings in 2003 for this major conference will create further linkages between our research and larger policy concerns.

Research on Rural Financial Markets: Projects Beginning in 2002

PROFILE

In July 2002, BASIS announced a request for proposals focused on rural financial markets in Latin America and Asia. Proposals put forward innovative research plans that promised to add significantly to our knowledge about rural financial markets and their linkage to other factor markets. The theme and geographic foci were determined jointly with USAID in order to address priority areas for the Agency and gaps within the BASIS CRSP research portfolio.

As with all BASIS research activities, proposals also formulated plans to build research capacity with host country researchers through collaborative interaction in the design and implementation of the research and in their targeted and effective dissemination.

Proposals demonstrated the capacity to engage with local policymakers and work toward the adoption of policies that emerge from the research findings.

Ten proposals were submitted and the following three were selected for funding:

1. "Credit Reporting Bureaus and the Deepening of Financial Services for the Rural Poor in Latin America." PIs: Alain de Janvry, Elisabeth Sadoulet, and Craig McIntosh (University of California-Berkeley, USA), Bruce Wydick (University of San Francisco, USA), and Martin Valdivia (GRADE, Peru).
2. "The Structure and Performance of Rural Financial Markets and the Welfare of the Rural Poor: A Comparative Study in Peru and Mexico." PIs: Steve Boucher and J. Edward Taylor (University of California-Davis, USA), Carolina Trivelli Avila (Instituto de Estudios Peruanos, Peru), and Antonio Yunez Naude (El Colegio de Mexico).
3. "The Long Run Effects of Access to Financial Services on Asset Accumulation, Economic Mobility, and the Evolution of Wellbeing: Revisiting Agricultural Commercialization in Bukidnon, 1984-2003." PIs: Agnes Quisumbing (International Food Policy Research Institute) and Linda Montillo-Burton (Research Institute for Mindanao Culture, Philippines).

CREDIT REPORTING BUREAUS AND THE DEEPENING OF FINANCIAL SERVICES FOR THE RURAL POOR IN LATIN AMERICA

Global Constraint 1: *Ineffective Agricultural Resource Use in Post-Reform Economics*

Global Constraint 3: *Poverty and Food Insecurity Traps*

Principal Investigators

Alain de Janvry: Department of Agricultural and Resource Economics, University of California-Berkeley, USA

Elisabeth Sadoulet: Department of Agricultural and Resource Economics, University of California-Berkeley, USA

Craig McIntosh: University of California-Berkeley, USA

Bruce Wydick: Department of Economics, University of San Francisco, USA

Martin Valdivia: Grupo de Análisis para el Desarrollo, Peru

Collaborating Institutions and Researchers

University of Central America, El Salvador: Alvaro Trigueros

FAO Office for Latin America: Gustavo Gordillo

Economics Department, Princeton University, USA: Dean Karlan

PROJECT PROFILE

Access to credit for the rural poor in support of their agricultural operations is one of the largest remaining frontiers in using financial services to combat poverty. Many rural poor have control over collateral that they could pledge in accessing credit through formal lenders. Because this may place collateral at risk in case of negative shocks in their agricultural operations, most smallholders refrain from leveraging their assets in gaining access to capital.

We propose to analyze how the emergence of credit reporting systems can break this deadlock in helping the rural poor obtain formal loans for their agricultural operations. This can occur on the basis

of the reputation they established as borrowers from microfinance institutions for their non-agricultural operations. We will focus on the impact of emerging credit bureau systems in Guatemala, El Salvador, and Peru.

Three sources of information will be used: an internet census of credit bureaus, administrative data from cooperating microfinance institutions, and an entry survey among formal lenders to agriculture. Rapid development of credit bureaus will provide a living laboratory in the course of the project. Policy implications will be on the design of effective credit reporting systems for the rural poor.

THE STRUCTURE AND PERFORMANCE OF RURAL FINANCIAL MARKETS AND THE WELFARE OF THE RURAL POOR:

A Comparative Study in Peru and Mexico

Global Constraint 1: *Ineffective Agricultural Resource Use in Post-Reform Economics*

Global Constraint 3: *Poverty and Food Insecurity Traps*

Principal Investigators

Stephen R. Boucher: Agricultural and Resource Economics,
University of California-Davis, USA

J. Edward Taylor: Agricultural and Resource Economics,
University of California-Davis, USA

Carolina Trivelli Avila: Instituto de Estudios Peruanos, Peru

Javier Escobal D'Angelo: Grupo de Analises Para el Desarrollo, Peru

Antonio Yunez Naude: Center for Economic Studies, El Colegio de Mexico

PROJECT PROFILE

The project will investigate the degree to which recently liberalized rural financial markets in Peru and Mexico meet the needs of the rural poor. Both countries have reduced the role of the state in financial markets in hopes that vibrant private markets for credit, savings and insurance will emerge. The terms of access to these markets afforded to rural households will determine, to a large extent, the success of broader programs of economic reforms. The research proposed here will answer the following broad question: *Do post-liberalization financial markets promote efficient resource use and enable asset accumulation by the rural poor?*

The project will create a household level panel data set containing information on production, income, expenditures, asset accumulation, and participation in financial and other factor markets. Approximately 500 households will be interviewed at six-month intervals in each country. Panel data econometrics will allow us to assess the impact of financial market access on household welfare, production decisions and the ability of households to accumulate assets over time. These data will also permit us to identify factors contributing to rationing in credit markets and trace the evolution of credit market structure over time. The research will be of interest to the region as

a whole because most of the countries have undertaken similar market-oriented reforms. As Latin America struggles to redress rising inequality, it becomes urgent to understand factors that may prevent resource-poor households from participating in and contributing to economic growth. This project will help by contributing to understanding of the inter-connections between financial and other market reforms and the links between market development, poverty and vulnerability.

The research will utilize an established methodology for capacity building. The Program for the Study of Economic Change and Sustainability in Rural Mexico is a unique institution recently founded by the Colegio de Mexico and UC-Davis that is designed to promote and facilitate research on Mexico's rural economy by local researchers. Through this program, local researchers will participate in the implementation of the study and facilitate the rapid dissemination of results. In Peru, the research will be supported by the Instituto de Estudios Peruanos and Grupo de Analises Para el Desarrollo—the country's two leading social science research institutions. Dissemination of results will be facilitated by these institutions' close ties with policymakers. The Office of Agricultural Information in the Ministry of Agriculture will be involved in research design and dissemination.

<http://www.basis.wisc.edu/finance.html>

THE LONG-RUN EFFECTS OF ACCESS TO FINANCIAL SERVICES ON ASSET ACCUMULATION, ECONOMIC MOBILITY, AND THE EVOLUTION OF WELLBEING:

Revisiting Agricultural Commercialization in Bukidnon, 1984-2003

Constraint 3: *Poverty and Food Insecurity Traps*

Principal Investigators

Agnes R. Quisumbing: International Food Policy Research Institute

Linda Montillo-Burton: Research Institute for Mindanao Culture, Philippines

PROJECT PROFILE

The research program aims to understand how access to rural financial services affects patterns of physical and human capital accumulation, economic mobility, and well-being over a long period of time, and to assess how these patterns differ between commercialized and food crop oriented agriculture. The research will involve resurveying original respondents and their children from a sample of agricultural households in the Mindanao region of the Philippines previously surveyed by the same collaborating institutions in 1984 and 1992. Using a quasi-experimental design, the study will identify the differential effects of credit constraints on households exposed to commercial agriculture and those relying

on food crop production. The study involves a qualitative study in all survey communities, focusing on changes that have taken place since 1984, the growth and relative importance of financial institutions, and perceptions of poverty and changes in wellbeing over time. The qualitative study will be followed by a quantitative household survey which will collect detailed information on access to and use of financial services, consumption, production, assets, and indicators of well-being. The research program includes training and capacity building activities for host-country collaborators as well as a series of policy seminars for host-country policymakers.

Outreach: Conferences and Workshops 2003

PROFILE

BASIS CRSP helps USAID address emerging opportunities in economic growth, agricultural development, and trade through (1) competitively awarded, cutting edge, policy relevant research, and (2) outreach to policymakers at multiple levels.

Outreach activities include hosting policy workshops and conferences for audiences of USAID and other global donor agencies. Delivering development strategies, these workshops and conferences are based on the findings coming out of the research projects.

Beginning in 2004, BASIS will inform the broad policy community through the comprehensive *Lessons Learned Policy Conferences*, which will integrate themes and findings from the projects in the BASIS research portfolio.

- *Combating Persistent Poverty in Sub-Saharan Africa, 2004*
- *Property Rights for Productive Land Use, 2005*
- *Agricultural Policy Reform Sequences for Transition Economies, 2006*

These conferences will focus in turn on each of the global constraints that structure the BASIS research agenda. By drawing on expertise gained from the projects, the conferences will serve as the primary vehicle for cross-regional synthesis and learning.

A second mechanism by which BASIS delivers policy information is through targeted policy conferences and workshops, solicited directly by USAID, on topics of BASIS expertise. Two such targeted conferences/workshops are scheduled for the coming year:

1. *Workshop on Land Policy, Administration and Management in the English-speaking Caribbean, March 2003*
2. *Paving the Way Forward: An International Conference on Best Practices in Rural Finance, June 2003*

These two outreach activities are detailed in this section.

Acronyms this section

DFID	Department for International Development
IMF	International Monetary Fund
MFI	Microfinance Institution
NGO	Nongovernmental Organization
WOCCU	World Council of Credit Unions, Inc.

WORKSHOP ON LAND POLICY, ADMINISTRATION AND MANAGEMENT IN THE ENGLISH-SPEAKING CARIBBEAN

March 2003

Principal Investigators

J. David Stanfield: Land Tenure Center, University of Wisconsin-Madison, USA

Collaborating Institutions and Researchers

Land Tenure Center, University of Wisconsin–Madison, USA: Christine Elholm,
Don Esser

Terra Institute, Ltd., USA: Lynn Burns

ACT Consulting Associates, Trinidad and Tobago: Allan N. Williams

PROJECT PROFILE

By bringing together donors, program implementers, civil society and government representatives, the Workshop will help identify key policy issues and means for addressing land administration and management issues of particular interest to countries in the Caribbean. The importance of land policies as a basis for securing property rights and access to land, as well as establishing the basis for the functioning of land

and other factor markets for assuring sustainable development in Caribbean countries is well recognized. Land continues to be a key household asset, particularly for the disadvantaged sectors. Land is also in short supply and under pressure from growing populations for providing employment as well as for assuring safe water supplies and healthy environments.



Support

Add-on from USAID/Latin America and Caribbean. Matching provided by InterAmerican Development Bank, and the Department for International Development/UK.

Anticipated Outputs

- Provide an experience of learning, information exchange and outreach/training which will involve both applied academic researchers and activists engaged in “learning by doing” through engagement in the implementation of land management and administration programs.
- Facilitate linkages among professionals in the public and private sectors, academia, and non-

government organizations, to tap into and influence the Caribbean Region discussion of these issues, and in the design and implementation of programs to deal with land administration and management problems.

- Produce a Proceedings of the discussions, which will provide a common resource base for subsequent outreach and training through publications, short courses for professionals, web-based distance learning, host-country training activities, and a data base of personal and institutional contacts knowledgeable from experience and analysis about the theoretically grounded practice of land policy design, debate, experimentation and implementation.

I. WORKPLAN

A Coordination Committee will be established, composed of representatives from participating countries as well as from USAID, the Inter-American Development Bank, and the British Department for International Development. This committee will be responsible for the content, planning, and organization of the workshop. The Land Tenure Center, University of Wisconsin-Madison, and ACT (a Caribbean NGO) will support the committee in the logistics of planning and implementing the workshop.

General objectives are:

- share practical experiences between stakeholders in the region to assist the development of more effective land policies and investment programs;
- develop a Caribbean perspective on land administration and management in order to ensure that the policies of international agencies reflect the realities of the region;
- discuss ways in which broadly agreed principles of land policy can be translated into feasible national policies and programs that respond to specific problems confronting the countries and the region.

The majority of the participants will be invited from the public and private sectors in the following countries: Suriname, Guyana, Jamaica, Trinidad and Tobago, Belize, Barbados, The Bahamas, Grenada, St. Vincent, St. Lucia, Montserrat, Dominica, Antigua, St. Kitts and Nevis.

Participants will include representatives from the organizations providing support to the workshop, from the Inter-American Development Bank, the United States Agency for International Development, the British Department for International Development, and the Government of Trinidad and Tobago.

The workshop will include the following activities:

Presentations and discussion: To ensure that objectives can be achieved, the following papers

will be prepared: (1) an initial “framework” paper that will summarize land administration and management issues initially, (2) a more complete background paper by key experts in the field that will identify key regional land administration and management policy issues and their origins and impacts on the development of the Caribbean region, and (3) nine case studies by regional specialists that will analyze and present specific country experiences and issues in land administration and management. These papers will be prepared and distributed to participants for discussion at the workshop. Representatives from the public sector and practitioners will present their views and experiences in land policy design and administration and the challenges they face.

Moderated sessions with panelists: Panel discussions will be organized to debate further the issues of relevance to the Caribbean countries. Panel discussions will consist of 3-4 panelists who will present their opinions on specific topics leading to a question and answer session and debate among panelists and participants. Panelists will provide written inputs that will confirm or refute hypotheses advanced, provide more detail on specific issues of relevance, and aim to summarize pertinent policy implications.

Working/Discussion groups: To allow further interaction and in-depth discussion on critical issues, working groups will be formed and led by participants with practical experience in the issues. Groups will draw conclusions and recommendations to be reported back in a plenary session.

Panels of policymakers: One of the concluding sessions will include a panel of government policymakers who will summarize key lessons from the discussion, identify areas of emphasis, and propose possible next steps to address the land policy and administration issues at both the country and regional level.

PAVING THE WAY FORWARD:

An International Conference on Best Practices in Rural Finance

June 2003

Principal Investigators

Brian Branch, Lucy Ito, Curtis Slover: World Council of Credit Unions, Inc.

PROFILE

Rural financial markets in developing countries and economies in transition are characterized by low and decreasing availability of financing for both agricultural and non-agricultural activities. In developing countries and transitional economies, very few people in the rural populations have access to financial services. Often characterized by a paucity of viable financial institutions and by lack of variety, breadth and range of financial services available, rural communities often do not have access to savings services, credit products, insurance, or transaction services. There also is limited access to long-term financing needed for agriculture, land, and other rural enterprises.

The shallowness of rural financial markets in part reflects weak integration of rural markets into broader economic markets. Also, a number of features of rural economies place rural families further down the risk continuum than urban households:

1. agricultural enterprises are high-risk, susceptible to the shocks of weather and market conditions; agricultural crops or sectors are characterized by high geographic risk concentration;
2. small operations that characterize rural enterprises are prone to high transactions costs;
3. households lack traditional collateral assets;

4. there often is an inability to enforce contracts;
5. rural markets suffer from inadequate infrastructure, which results in a low return on capital; for private investors, the relatively low return and marginal profit on rural activities amounts to a poor use of capital.

Previous experience provides lessons for developing robust financial markets. These lessons emerge from three notable experiences. The first is expansion and then retreat of *agricultural finance*. The second is the *liberalization of financial sector policy*. The third is expansion of largely urban-based *microfinance*. This effort will review the lessons and will initiate a structured dialogue towards donor and practitioner guidelines for rural financial market development.

Policy and programming recommendations generated by this project will provide input for USAID's agricultural strategy and future programming guidance. At the end of the year-long review effort, there will be a conference for the international community of donors, practitioners, academicians, and government representatives on the way forward for rural finance development policy. This conference will include donors, key practitioners who have demonstrated success, and government policymakers who have articulated a vision for rural finance services.



Support

Core funding. Matching provided by WOCCU.
Add-on funding USAID/OMD.

<http://www.basis.wisc.edu/rfc/index.html>

I. PAVING THE WAY TOWARD POLICY

A. Lessons

The lessons in improved agricultural sector and fiscal policy as well in Central Bank and financial sector policy can provide a stimulus to rural finance development. The lessons from agricultural credit in “bad” pricing and from microfinance in “good” pricing suggest the need for more aggressive market based pricing in rural finance in order to build longer term sustainable institutions. The experience of microfinance in elevated lending interest rates is not completely transferable to the agricultural production portion of rural finance where longer term crop cycles and thinner production to sale margins place limits on how high interest rates can be raised but the core principles of market pricing and institutional sustainability apply. The same products developed in microfinance may not provide transferable products to rural finance; group lending may not fit many types of agricultural producers. Yet, the same type of energy observed in the microfinance sector can be applied to product innovation and the identification of who in the rural sector is applying successful technologies that can advance the rural finance sector in spreading innovation.

What remains unanswered from most previous experience is how to carry out financial institution restructuring and reform. Despite the success in moving most institutions to market pricing, there are limited success stories of restructuring the accounting, policy, products, costs and governance of insolvent financial institutions to achieve transparency, profitability, scale, and sustainability as is needed for success in rural finance.

The rural sector has its own characteristics which have to be addressed: geographic spread, heterogeneity of population, seasonality of economies, lower profits, higher risks, insecure loan collateral, and deficient or absent financial institutions. Therefore, previous experience can provide lessons but advancement of the rural finance sector will require dedication to its own characteristics and development of its own lessons. This will require cross-cutting themes and integration of the policy environment, infrastructure complementarity, institutional sustainability and outreach, and innovations in technology.

B. Key Themes

The success of experiences in rural finance has often depended upon the successful simultaneity of four key strategic themes. The *policy environment*—legislation and regulation—provides the incentives for production and investment in the sector. Where producers are unable to ameliorate risk, acquire inputs or distribute product, financing is not enough to produce profitability.

Consequently, *infrastructure complementarity* or co-location is an important part of rural finance feasibility and investment returns. Perhaps the greatest challenge today is to fill the vacuum of financial institutions which can be created or restructured to achieve *sustainability and outreach* in rural sectors. Experience has suggested that *innovations in technology*, practice, products, and services are required to address the risks, cycles and information characteristics of rural finance.

Each theme is examined individually as success of the whole can be impaired or blocked by the failure of one of the four. Each will be a discussion center for the research preparation and paper presentation on an international conference on rural finance. The first two (policy and infrastructure) will be dealt with in less detail than the latter two (institutional sustainability and technology) which are focused upon financial services.

The conference is expected to produce general guidelines for policy framework that supports rural finance development and for infrastructure complementarity that maximizes the return on rural finance development. Yet, the conference is expected to produce more in depth operational conclusions and guidelines on achievement of financial institution sustainability and outreach as well as innovation in technologies for rural finance services.

C. The Program

Much has been learned that can be applied constructively to address today’s rural finance challenges. USAID has documented much in rural finance and microfinance guidelines, best practices, and case studies. To assist USAID in its review of rural finance, the World Council of Credit Unions, Inc. (WOCCU) will capture and disseminate

lessons from past and current rural finance experiences and practices to formulate both practitioner and donor guidelines for rural financial market development.

Key elements will include a review of rural finance literature and rural finance programs, preparation of theme papers, and presentation of the experiences of recognized best practitioners. These will be presented at an International Conference on Best Practices in Rural Finance in 2003.

For USAID, WOCCU will manage the steps to input information, identify success cases, prepare research and organize the conference. WOCCU has hired a full-time Rural Finance Project Coordinator to carry out the following project implementation steps over the period of one year. Working in cooperation with BASIS Director Michael Carter, senior WOCCU staff (Brian Branch, Lucy Ito, and Curtis Slover), will assume the responsibility of summing up the final lessons and guidelines in rural finance. WOCCU will review what has been learned and what can be applied as well as what remains to be addressed in today's rural finance challenges. WOCCU will present donor-practitioner guidelines on the way forward for rural finance development.

Project implementation steps include:

Literature Review of key works in development finance since 1972, yielding a synthesis of major initiatives, findings of recent strategies, and lessons to the present.

Program Review in consultation with African Development Bank, Asian Development Bank, CABFIN, Consultative Group for the Alleviation of Poverty, Enterprise Development Innovation Fund of the Department for International Development, Inter-American Development Bank, International Fund for Agricultural Development, International Finance Corporation, USAID, the World Bank, and others. Each donor will be asked to submit a review paper on *Rural Finance Lessons Learned and Best Principles & Practices*. The scope of the program review will not be limited to donor submissions.

Identification of Best Practitioners in rural finance to be presented at the International Rural Finance Conference. This review offers an opportunity to explore lessons “under the radar screen.” This effort is intent on identifying the

“quiet gems,” whose instructive lessons have not been widely known or available until now.

Principal Theme Papers to be written by consultant writers. Theme papers will be the keystones for the panel sessions. These include:

- Key Elements to Getting the Policy Environment Right.
- Interface between Rural Finance and Goods Production and Marketing.
- Successful Elements in Rural Financial Institutions Achievement of Sustainability and Outreach.
- Technology Innovations in Rural Finance.

Planning Meeting with consultant writers and BASIS project implementing partners, including USAID, to make preliminary presentations, confirm conceptual framework, review preliminary research and coordinate plans for implementing the International Rural Finance Conference.

Focused Solicitation of Papers from successful practitioners and donors to write case studies of institutional options and performance and to participate in conference panels on themes of:

- Policy Environment,
- Infrastructure Complementarity,
- Financial Institution Sustainability and Outreach,
- Product Innovation,
- Practitioner Case Studies.

International Conference on Best Practices in Rural Finance to be held for donors, practitioners, researchers, and government representatives in Washington, DC. Several panels will address getting the policy environment right, rural finance-infrastructure complementarity, achieving financial institution sustainability and outreach and technology innovations in product and service design and delivery. Consultant theme writers will lead panels with a general presentation; other panel participants will include solicited donors and representatives from practitioner institutions.

Input to USAID Agricultural Strategy—a document specific to USAID policy and programming needs will be presented to USAID. Recommendations will be geared toward USAID's strengths and objectives and will be developed as an input to USAID's Agricultural Strategy.

Rural Finance Program Guidelines for Donors and Practitioners/International Rural Finance Conference Proceedings—WOCCU has received funding from USAID/OMD to broaden the scope of practitioners invited to the conference and to publish and distribute post-conference a summation of the lessons and experience generated by the rural finance activity along the lines of a Conference proceedings, and Rural Finance Program Guidelines for Donors and Practitioners.

The role of donors is one piece in the rural finance development puzzle. There is an array of development mechanisms (loans, grants, private sector) that donors are beginning to tap. This effort will capture “donor best practices” and will consider questions such as: How far should donors go in directing implementation? What are the comparative advantages and strengths of various donors? Can donor coordination take advantage of comparative strengths? Is it time for donors to show leadership by moving from the battle cry of “poverty alleviation” to “trade-led export growth” that more effectively reducing poverty levels?

Rural Finance Website

<http://www.basis.wisc.edu/rfc/index.html>

WOCCU developed the site with BASIS CRSP and it will be maintained beyond the project period. The website will post the rural finance literature review, synthesis of recent rural finance strategies, donor portfolio review papers on rural finance lessons and best principles and practices, commissioned principle theme papers and case studies, conference proceedings, and the final post-conference learning product: “Rural Finance Program Guidelines for Donors and Practitioners.” Availability of these resources on the website prior to the conference will facilitate access by regional participants. Advance use of the website will increase the likelihood of deeper and better-informed discussion at the conference itself. After the conference, the website—linked to appropriate donor, practitioner and academic websites—will continue to provide access to all background papers and will offer extensive dissemination channels for the conference outputs and recommendations.

Annex: Phase I Projects and Activities 2001-02

PROGRAM PROFILE

In September 1996, USAID awarded the Broadening Access and Strengthening Input Market Systems (BASIS) Collaborative Research Support Program (CRSP) to the Land Tenure Center, University of Wisconsin–Madison, lead organization for a consortium of 16 institutions.

In September 2001, BASIS Phase I formally came to an end, though some Phase I projects extended into the 2001-2002 planning year. These projects are described in this section. As with ongoing work under Phase II, BASIS I focused on land, water, labor and financial markets and their interactions as they relate to economic growth, food security, and sustainable resource management.

Accomplishments of BASIS I include:

Economic planning and financial initiatives in El Salvador. Outlined ways to help alleviate rural poverty and contributed to the Plan de Nación. Provided information on the dynamics of poverty and financial market segmentation, which will help broaden access by the rural poor to microfinance.

Policy engagement in Russia. Engaged Russian and US researchers and policymakers in dialogue on Russia's agricultural policy and market reform.

Market development in Eastern Europe and Former Soviet Union. Brought together representatives from 7 transition countries and US scientists and donor representatives to generate national and regional statistics on the degree to which marketable titles have been distributed to private owners and legally registered.

Farm competitiveness in the Kyrgyz Republic. Monitored and evaluated net farm returns by farm type during land reform.

Applied research and synthesis and training in the Horn of Africa. Promoted interregional trade and economic stability by informing policymakers about the positive effects crossborder trade of livestock and grain on food security. Organized international symposium of 57 participants from 6 African countries and the United States to enhance policy, health, and nutrition linkages among agricultural policy and nutrition scientists and practitioners.

Institutional reforms in Tanzania. Documented inequalities in access to water and offered policy options on the need for increased stakeholder participation in local and regional policy formulation.

Finance reform and poverty strategies in South Africa. Explored how to help historically disadvantaged farmers and farm workers access private sector loans to finance land and equity-sharing projects.

Land reform in Zimbabwe. Participated in a multi-donor effort to help Zimbabwe design its land reform and resettlement program.

Workshops, training and collaborative partnerships worldwide. Organized 11 regional workshops, supported 32 students, and established formal research partnerships with 28 institutions.

Acronyms this section

ALDEV	African Land Development
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CASS	Centre for Applied Social Sciences
LAC	Latin America and the Caribbean
LTC	Land Tenure Center
MIS	Mwea Irrigation Scheme
NIB	National Irrigation Board
SAP	Structural Adjustment Program
UZ	University of Zimbabwe

ALLEVIATING POVERTY AND FOOD INSECURITY:

The Case of Mwea Irrigation Scheme in Kenya

Investigators

Wilson Nguyo, Betty Kaunga: Tegemeo Institute, Egerton University, Kenya

Mesfin Bezuneh: Department of Economics, Clark Atlanta University, Atlanta, USA

PROJECT PROFILE

The Mwea irrigation scheme (MIS) started in the 1950s as a settlement project for landless and unemployed ex-detainees of the pre-independence freedom struggle and others. It has become the largest and most efficient irrigation scheme in Kenya. It played a pivotal role in the 1980s when the cost of food import skyrocketed with respect to the value of the domestic currency. It is expected to continue important contributions to the economy.

A drastically increased demand for irrigation water has resulted in conflicts between farmers within and without the scheme. Conflict also has emerged on price/cost, marketing and revenue sharing between scheme farmers and the National Irrigation Board (NIB). Conflict threatens the existence of MIS as a tenant-based settlement scheme.

The main purpose in this study was to assess the impacts of the irrigation scheme on the welfare of tenant farmers. The driving force was the question: *Are these farmers better off than their counter parts who do not participate in the scheme?* Comparing farmers within (participants) and without (non-participants) the scheme highlights the impacts of

the irrigation system, allows for exploration of policy alternatives, and identifies steps to take to facilitate the stakeholders' objectives.

Irrigation agriculture must have an efficient form of cost recovery for the provider, and revenue generation for the participant farmers. These are in conflict at Mwea. This study sought to better understand these issues by not only quantifying the benefits and costs to the farmers, the state and/or any other provider, but also by assessing and examining the present data quantitatively.

MIS plays a pivotal role in the Kenyan economy by producing a staple food, rice. As a result, there is an immense interest in all dimensions of the scheme (technical, environmental, as well as social). This study primarily focused on the economic arguments for or against having such a system. Presently, the scheme is owned and managed by the state/NIB, and farmers deliver produce to NIB and receive what NIB calculates as the difference between cost and revenue. What form should MIS take in the future? Are farmers better off "within" or "without" such system?



Support

Core funding. Add-on from USAID/REDSO.

Outputs

Nguyo, Wilson, Betty Kaunga, and Mesfin Bezuneh. 2002. *Alleviating Poverty and Food Insecurity: The Case of Mwea Irrigation Scheme in Kenya*.
<http://www.wisc.edu/lrc/live/bashorn0209a.pdf>.

"Food Security, Policy and Environmental Interface in Africa." Presentation at the annual meetings of the American Agricultural Economics Association, August 2002, Long Beach, CA.

ACTIVITIES 2001-2002

Data for this research was obtained through a household survey, interviews with key informants and reference to published and unpublished documents about MIS. A major source of secondary information was the Egerton University reports. Results show crop production mainly rice has been the major source of income (80 percent) for Mwea farmers. When water is available, total incomes for MIS farmers could be up to Ksh. 197,432. Households outside the scheme earn on average Ksh. 65,784 of which 49 percent is derived from crops and 50 percent from off farm sources, including employment and informal business (18 percent), mainly small scale rice milling. Food security is relatively higher among the Within MIS households than Without MIS. Irrigation agriculture allows high productivity and hence is a good source of food and income.

Primary qualitative data were obtained from interviews with key informants while quantitative data were collected through a household survey using a formal questionnaire. The sample was taken from the list of 36 villages (within and outside the scheme) that was provided by the chief of Thiba Location. Then, 28 villages were selected from the three sub locations of Thiba. Then, the 'in charges' or village elders provided the list of names of households within the selected villages. A total of 218 households were selected (198 from within the scheme and 20 households outside the scheme) in proportion to the population of each village. Additional data and information were obtained from secondary sources, principally from Egerton University Policy Analysis for Participatory Poverty Alleviation (PAPPA). Other sources of secondary data used were from reports and records of the National Irrigation Board and Mwea Multi-purpose Co-operative society.

The administration of the survey instrument was conducted by five well-trained B.Sc. Agricultural Economics graduates. The survey took four weeks. The questionnaire elicited both qualitative and quantitative information on production and consumption activities, and income source. For most of the quantifiable objectives we developed and adopted various simple and easy to use, but relevant, tools of analysis. These include Income

Source Analysis (ISA), Relative Mean Income (RMI), Food security Status Analysis (FSA), and Linear Programming (LP).

Income Source Analysis. Although the major income source of most households in Mwea is rice, we observed numerous agricultural and non-agricultural activities from which households derive income. Our interest here is to identify the source, and measure the level and degree of diversification that households are using as coping strategies for minimizing the risk of food insecurity.

Relative Mean Income. We used relative mean income to describe, analyze and compare the pattern of income inequalities among participant and non-participant farmers. Increasingly, the RMI measures of income distribution for comparison among groups of individuals, regions and even countries provide widely accepted measures.

Food Security Analysis. In order to assess and compare food security (and/or insecurity), at least at the household level, we adopted the risk of food insecurity conceptual-framework of Anderson and Roumassett's (Anderson, Jock and J.A. Roumassett. 1985. *Microeconomics of Food Insecurity: The Stochastic Side of Poverty*. Unpublished MS). This framework, although originally developed for highly aggregated-macro data (say country level), its application to a household level data has been sought in recent years. In order to establish the food security status of the sample households' food production, consumption, sales and purchases as well as gifts in and out were determined. Prices of food and other marketed products also were established.

Food security is a function of food consumption, food production and purchasing power or income. To establish the food security status of the households, the Anderson and Roumassett (1985) food security equation which links food consumption requirements, food production and income was specified as the following:

$$\boxed{\text{Value of food production deficit in household (HH)}} \leq \boxed{\text{Income and liquid assets available to purchase food}}$$

The larger the income (the right side) compared to the households' food deficit or shortfall (the left side) from production the greater the degree of food security. The value of the food production deficit is

$$\left[\begin{array}{l} \text{HH food} \\ \text{consumption} \\ \text{requirement} \end{array} - \begin{array}{l} \text{HH food} \\ \text{production} \end{array} \right] \times \text{Price of food}$$

simply the amount of the deficit multiplied by the price, or consumption requirement less own production times price of food:

$$\leq \begin{array}{l} \text{Income and liquid assets available to} \\ \text{purchase food} \end{array}$$

The larger the right hand side of the inequality compared to the left, the greater the degree of household food security, and vice versa. For example, a rise in the price of food or household food requirement, *ceteris paribus*, increases food insecurity. On the other hand, a rise in the household food production or a rise in income and liquid assets increases food security. Liquid assets at Mwea were limited to livestock which could be sold for cash at short notice.

LP Mode. Since the greatest impact of the irrigation scheme is expected to be first on agricultural production, particularly rice, and hence on income, a multi-year linear programming (MLP) model was specified for each group (participants and non-participants). The MLP was modeled not only around the traditional production activities and constraints, but also reflected water by its sources (irrigation vs. non-irrigation), land by ownership (own or leased), conservation activities-as a proxy of sustainability, and minimum food requirements-as a proxy-for food security and/or safety nets. This approach allowed us to determine the impacts of the irrigation system (mostly irrigation water) on production, income and to establish shadow prices for irrigation water, and other inputs of the system. Such modeling is particularly appealing for evaluating different production and policy scenarios.

Findings

What are the opportunities to use pricing as a mechanism for allocating irrigation water, or alternatively water demand management, at Mwea? Theoretically, the price mechanism in both input (water) and output (rice) markets should be the basis of allocation and revenue sharing. This of course requires pricing reform that effectively treats

water as a commodity rather than a “communal” good or “right.” In reality, not only does such pricing not exist but also is hardly a solution in itself. In other words, increasing the price of their produce or decreasing the cost of the inputs and services they use may not in itself resolve the current crisis at Mwea.

In addition, a participatory irrigation network or a management of common property resources body that will allow participant farmers to have a significant influence on the water delivery systems, type and amount of other inputs, and most importantly on marketing their produce (which includes price, quantity, level and form) may be needed. This in-turn may assist both the authority (NIB) and the participant users to monitor, and avoid using perhaps an inherently inefficient or inappropriate delivery, pricing and cost recovery system. Such an approach that attempts to remove some of the inherent deficiencies in the State-owned and managed irrigation system by implementing a participatory approach, although in its infancy stage, is beginning to take roots elsewhere in the developing countries, referred to as Participatory Management of Irrigation Schemes (PMI). In order to undertake such steps, economics and as well as end-use “physical” databases are needed.

Any solution to the current crisis at Mwea must of necessity include a cost-reflective pricing system that allows the participant farmers to receive fair prices for their rice crop. On the other hand, if the government/parastatal remains as provider, through the NIB in this case, it too must generate sufficient revenue to pay for not only agricultural inputs but also the cost of the irrigation water, including maintenance and periodic renovation of the irrigation system. As we have observed, the MIS

households are much better off than non-MIS in all areas that we were able to quantify and evaluate. Hence, paying market prices for all the inputs provided to them will not retard productivity provided that they (farmers) in turn receive market prices for their rice.

The farmers have recognized that the current arrangements are unsustainable. They need the Government or some Government Agency with technical expertise to provide services such as management of irrigation water and road infrastructure, research and seed production. On the other hand, the farmers owe NIB a large amount of money (estimated at Ksh.264 million) for inputs and services provided in 1998 when farmers refused to deliver the rice to NIB.

The government and the NIB also realize that the pre-1998 arrangement in which NIB had absolute authority over the MIS tenants is not sustainable. There is willingness, therefore, to discuss some compromise arrangements with the farmers. The principles of the way forward will have to be discussed and agreed among the key stakeholders. Yet some elements may include:

1. an agreement regarding the current debt the farmers owe the NIB
2. a body with authority and technical expertise to manage irrigation water supply and infrastructure, including control of illegal abstraction, at a cost to the farmers. The road infrastructure may be managed by the farmers directly or by a Government agency
3. a farmers' Water Users Association that is well organized and is responsible for:
 - crop production, including land preparation, crop protection, harvesting, transportation, storage and milling
 - crop marketing

4. arrangements with appropriate institutions for financing various services
5. arrangement for research, certified seed production and farmer education or extension services
6. land tenure system that is acceptable to the farmers and the Government and that provides incentives to the tenants to invest on the land. The farmers demand freehold title to the land they hold. Other arrangements, such as a 99-year lease, have been mentioned.
7. Separation of MIS from other irrigation schemes run by NIB. NIB was responsible for several other schemes besides Mwea. Any Government body or agency providing services for MIS farmers at cost should be entirely separate and independent from any body or agency running any other scheme. At present, there is a belief among some observers that Mwea was subsidizing other schemes. If the agency providing services to Mwea is linked administratively, financially or otherwise to any other scheme, the issue of subsidizing another scheme will continue to haunt such an agency.

In conclusion, a high degree of productivity and food security has been attained owing to irrigation farming. We have observed that the MIS households are much better off than the non-MIS in all areas that we were able to quantify and evaluate. However, sustainability is threatened by problems of management. In today's environment, water must be treated as one of the essential productive resources accessible only through the market. And, in common with all other productive resources, it requires efficient allocation and proper maintenance. Failure to recognize this threatens productivity growth and food security.

CENTRAL AMERICAN GENDER ANALYSIS OF LAND TITLES

Investigators

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PROJECT PROFILE

Systematic differences in land tenure rights between men and women contribute to structural inequality and to poverty for women. Access to land and control over its use are the basis for food security and income production in rural areas and, more broadly, for educational opportunities and household well-being. Access to other productive resources such as water, irrigation systems, and forest products is tied to land tenure as well. Differences in property rights of women and men, and lack of direct access to and control of land may place constraints on women's productive roles and in their power and influence in the household and the community. Women who become single heads of household are particularly vulnerable: when their access to land is through their husbands or fathers, they often lose their property after widowhood, divorce, desertion, or male migration. Formalization of land rights not only protects women's access to and control of land but may benefit them in other ways as well. Documented

landownership may contribute to access to credit, agricultural resources, and services, as well as increasing a woman's bargaining power within the household and her status as a citizen in the community.

While there is considerable evidence that women would benefit from land policies and reforms that increase women's rights to land, little consolidated information is available on the impact of these legal and economic developments for women. Given the recent nature of the expansion of property rights in land to women, it is only now that researchers have been able to collect the kind of micro-level data that allows for the analysis of the impact of women's land rights on household resource allocation. This project makes an initial attempt to identify some of the impacts of these changes in land titling in two countries—Honduras and Nicaragua—with very different histories of agrarian reform, but facing similar challenges of rural poverty and gender inequity.



Support

Add-on from USAID/Latin America and Caribbean.

ACTIVITIES 2001-2002

The primary activities for this project were an analysis of available data for Honduras and Nicaragua and the creation of a report of this analysis. The researchers investigated gender-specific outcomes of land market reforms from a variety of perspectives. This project has significantly benefited from the fairly unique availability of data that are not only highly disaggregated by gender, but also comparable across two countries. The survey instruments and sampling frames, while not identical, allow for useful side-by-side comparisons of the descriptive statistics, as well as very similar specifications of the econometric models.

The Nicaraguan data, which are national in scope, cover 2475 rural households (corresponding to 3662 land parcels) from the year 2000. The sample frame combines a 1996 nationally representative area-based sample (n= 1360 original inhabitants and 282 new owners) with smaller samples of land titling program beneficiaries (n = 461) and another of landless and land poor households (n = 372). The survey instrument, which consists of twelve separate sections, collects gender-disaggregated data on off-farm earnings, landownership, the administration of income from agriculture and livestock sales, credit, and membership in various rural organizations.

The Honduran data, collected during 2001, combine two sample frames to cover 850 households. The first—or “panel”—sample consists of 450 households that had been originally surveyed in the mid-1980’s and again in 1994 (López and Romana 2000). The second—or “cross section”—sample consists of 400 households in municipalities identified by the European Community as potential areas of operation for a future Land Bank. The survey instrument is structured similarly to the Nicaraguan one, with the exception that information on the administration of agricultural income is not disaggregated by gender.

Key Findings and Results

Although Nicaragua and Honduras are neighboring countries that share many social, cultural, agroclimatic and economic characteristics, their divergent agrarian paths over the past twenty years—and in particular the profound impact of the

Sandinista revolution in Nicaragua—has had important implications for women’s role in their respective rural economies. The national-level data for Nicaragua illustrate that the country has undergone a significant feminization of its rural population, and that, relative to Honduras, women make up a large percentage of the economically active rural population. Moreover, economically active Nicaraguan rural women are much more likely to be employed in the agricultural sector, whereas industrial and commercial employment accounts for a greater share of rural Honduran female jobs. During the same period, the Nicaraguan countryside experienced an important redistribution of property rights, which in part enhanced women’s access to land. In Honduras, however, the 1980s and 1990s were marked by a significant slowing down of the agrarian reform, with an almost exclusive public policy emphasis on titling. Both countries have made significant advances with respect to the recognition of women’s property rights, but the coupling of greater land access with enhanced gender equity in Nicaragua may have had a larger impact in terms of increasing women’s overall stake in the agrarian economy.

In both countries, it is clear that women’s property rights in land are still the exception rather than the rule: taking male- and female- headed households together, 22% of the Nicaraguan sample and 26% of the Honduran sample reported some form of individual or joint title held by women. Inheritance is an important avenue for women’s land acquisition in both countries, but women are also surprisingly active in the land sales market, especially in Honduras, where agrarian reform has played a smaller role. The data suggest a positive correlation between women’s property rights and their overall role in the household economy: greater control over agricultural income, higher shares of business and labor market earnings, and more frequent receipt of credit.

The impact of female land rights on household welfare appears to be unambiguously positive, but very small in magnitude. Greater female landholdings are associated with modest increases in food expenditures and child educational attainment. These results suggest that advocates of

stronger rural property rights for women may not want to base their arguments solely on the short-run benefits to household and child welfare. Indeed, the same market imperfections that impede the realization of the potential benefits of land tenure regularization in general are also likely to temper the “economic access” aspects of enhanced female rights in land. In other words, while there seem to be some small immediate material gains associated with greater inclusion of women in agrarian policy, it should not be considered a panacea in the absence of other significant changes that would more fully allow women (and men) to make use of their land assets.

While the analysis of these data has begun the process of more thoroughly understanding the gender distribution of property rights in rural Central American households, and the implications of this distribution for the household economy and well-being, it may be that the most significant and interesting issues remain to be explored. This is because the most meaningful effects of enhancing women’s property rights in land may be long-run rather than short-run in nature. In this study, we have focused on the relationships between female land rights, women’s role in the household economy, expenditures and human capital investment. And while there are clearly some strong correlation between the amount of land held by women and these short-run measures of resource allocation, the true impact of enhancing female property rights might be more manifest in two longer-run phenomena: the intergenerational effects and household formation.

The inter-generational effects of improving women’s access to land may include the increased

levels of child education that appear to be associated with female landownership; the transference of the land itself to sons and daughters; and the greater claim that elderly women may have on their children’s earnings and remittances when they have inheritable land. We could then expect that the daughters of women landowners will be more highly educated and in a stronger land asset position than the previous generation, as well as that elderly rural widows will be less vulnerable than they have been in the past. A second, related long-run consequence of enhanced female property rights may lie in strengthening women’s ability to delay marriage (with further implications for fertility rates) and to form independent households with or without children. While we have treated household headship as an exogenous variable in the analysis above, it is highly likely that women with greater access to a key economic resource such as land are in a better position to assume household headship in the event of death, abandonment, neglect or abuse.

In conclusion, the analysis of the household data from Nicaragua and Honduras suggest that the advances made across Latin America with respect to the inclusion of women in land redistribution and titling and registration campaigns have the potential to enhance women’s roles in the rural economy and to reallocate household resources towards basic needs expenditures and human capital investments for the next generation. However, the true social, demographic and economic consequences of the “second wave” of agrarian reform in Latin America—or at least those aspects of the reform that have benefited rural women—may be felt most keenly in the future

IMPACT OF JOINT TITLING ON GENDER EQUITY

Investigators

Susana Lastarria-Cornhiel: Land Tenure Center, University of Wisconsin-Madison, USA

Robert Mitchell, Jennifer Brown: Rural Development Institute, USA

Hermayulis, Firlil Purwanti: Law School at the University of Indonesia, Jakarta

Sonia Agurto, Alejandra Guido: Fundación Internacional para el Desafío Económico Global, Nicaragua

Sara Elisa Rosales: Universidad Pedagógica Nacional Francisco Morazán, Honduras

PROJECT PROFILE

While there is considerable theoretical evidence that women would benefit from participation in joint titling programs, where title to land is given to both male and female heads of household, little information is available on the impact of these programs for women. Systematic differences in land tenure rights between men and women contribute to structural inequality and to poverty for women. Access to land and control over its use are the basis for food and income production in rural areas and, more broadly, for household well being. Access to other productive resources such as water, irrigation systems, and forest products is tied to land tenure as well. Differences in property rights of women and men, and lack of direct access to and control of land may place constraints on women's productive roles and in their power and influence in the household and the community. Women who become single heads of household are particularly

vulnerable: when their access to land is through their husbands or fathers, they often lose their property rights after marriage (when access is through the father) and after widowhood, divorce, desertion, or male migration (when access is through the husband).

This is a preparatory research activity, which will design and produce a plan of action for exploring two policy-oriented objectives in Nicaragua and Honduras (with established joint titling programs) and Indonesia (with beginning programs):

1. determine whether joint titling of land, when compared to titling of only household heads, improves gender equity and increases women's tenure security and their access to factor markets,
2. provide information and analysis on the implementation and effectiveness of joint titling programs themselves.



Support

Add-on from USAID/G/Office of Women in Development.

Outputs

Lastarria-Cornhiel, Susana, Sonia Agurto, Jennifer Brown, and Sara Elisa Rosales. 2002. *Joint Titling in Nicaragua, Indonesia, and Honduras: Rapid Appraisal Synthesis*. Madison: Land Tenure Center, University of Wisconsin.
<http://www.wisc.edu/lrc/live/sl0301joi.pdf>

ACTIVITIES 2001-2002

This preparatory study was proposed as an eleven-month activity; the bulk of the research was to be completed by September 2001, with analysis and dissemination activities planned through the first month of 2002. Preparatory activities in all three countries were undertaken by Agurto (in Nicaragua), Rosales (in Honduras), and Mitchell and Hermayulis (in Indonesia) during the second quarter of 2001 as contact was made with counterpart organizations in the three countries and workplans were prepared. Events in Nicaragua and Indonesia, however, delayed further implementation in those countries resulting in an extension of the project until December 2002. The USAID Mission in Nicaragua suspended funding of activities in Nicaragua in June 2001 in anticipation of the presidential elections in November 2001; the suspension was lifted in June 2002. In Indonesia, work was interrupted for the last four months of 2001 when the RDI staff was evacuated because of terrorist activity.

Sites where rapid appraisals could be conducted were selected in the three countries: Western Java in Indonesia where much systematic registration has taken place, Guayape and Intibuca in Honduras in order to compare Ladino and indigenous communities, and Chinandega and Ocotal in Nicaragua where there have been high levels of joint titles issued. The following paragraphs summarize the activities undertaken in recent months.

Indonesia: Initial inquiries on the systematic titling program found that there are low levels of joint titling: only about 1.5% of the couples jointly titled their land, and of couples who purchased their land after marriage, only 3% had jointly titled their land. This suggested that it would be difficult to find a significant amount of jointly titled their land for the impact study. The Indonesia team (Mitchell, Purwanti, and Brown) undertook an exploratory study into why joint titles are not being issued in Indonesia. These findings are relevant to the general discussion around joint titling.

Brown and Purwanti carried out desk research on laws and policies that influence joint titling or

separate titling for women and interviewed key informants, central policymakers, as well as officials working in field offices on the functioning of the titling/registration system. Rapid rural appraisal field research in two different regions on the island of Java focused on rural women, some interviews with rural men were also done; and a final report was submitted detailing the findings of the research and including possible recommendations for encouraging joint titling and enhancing women's land rights in Indonesia.

Nicaragua: Agurto and Guido reviewed titling data and studies with regard to joint titling and the number of women titled: they also reviewed the legal aspects of women's rights to property and joint titling. Agurto and Guido then held interviews with key informants in titling offices, producer groups, NGOs, and rural women's associations regarding the joint titling process. They also carried out rapid appraisals and focus group meetings with titled women in Chinandega and in Ocotal. Results from these studies and interviews were submitted, together with a transcript of the key informant interviews.

Honduras: Rosales undertook a legal analysis of land rights and gender in Honduras, particularly the changes in legislation in the recent past that recognizes women's property rights. She also carried out rapid appraisals, key informant interviews, and focus groups in the Valle de Guayape (where a concerted effort to jointly title land was carried out) and in Intibuca (where ethnic communities are present), regions in which titling of agrarian reform enterprises and titling of individual smallholders have been implemented. A report on those findings has been submitted.

This preparatory study has reviewed data sources and information in three countries on joint titling and has undertaken rapid appraisals (including key informant interviews and focus group meetings) in order to report on the status of joint titling in each country and prepare a study proposal that would determine the impact of joint titling on gender equity, more specifically on women's effective

property rights, social status, and their access to productive factors.

Results from the rapid appraisals and review of information appear to reveal that in spite of joint titling legislation and program efforts to title women, a low proportion of titles are actually being issued to women. Beyond the actual number of women who receive title to land (whether jointly or individually) is the question of whether these titles are giving women effective property rights and the benefits that accrue from these rights.

The rapid appraisals have been completed and reports on the results prepared. The final activities for this project include a workshop and the preparation of a research proposal and workplan for undertaking a study on the impact of joint titling on gender equity. The workshop will bring together the three country researchers with the PI at the Land Tenure Center (University of Wisconsin-Madison) in mid-November 2002. The objectives of the workshop are (1) to discuss and synthesize the findings and analysis from the three rapid appraisals in order to make them available for dissemination, and (2) to begin the preparation of a proposal and workplan for an in-depth study on the impact of joint-titling on gender equity. The outputs from the workshop, including a summary of the results from the three rapid rural appraisals, and a proposal and workplan for an in-depth study into the impact of joint titling, would be prepared during November and December 2002.

Collaboration

The Indonesia component of this preparatory study was done in collaboration with RDI's land-related

legal drafting project with the University of Indonesia Faculty of Law and the Indonesian National Land Agency. This three-year project is being funded by a USAID grant managed by the Partnership for Economic Growth. On the Nicaragua and Honduras front, there has been collaboration with a USAID (through the LAC Bureau and BASIS CRSP I) and World Bank funded research project in Nicaragua and Honduras on landownership and titling. Those surveys (undertaken in 2000 and 2001) collected gender-disaggregated data and the analysis of those datasets continues has been very useful for the Nicaraguan and Honduran components of this preparatory study.

Key Findings and Results

The one key finding that seems to be common among the three countries is the difficulty in actually implementing legal statutes and program objective that result in the titling of land to women. While legislation in all three countries recognizes women's equal rights to property and land, particularly wives' rights to marital property, the difficulties encountered in translating those legal rights into effective rights seems to have a very strong social and cultural basis. This seems to be the case even when there are programs (e.g., in Nicaragua) that are specifically focused on titling women's rights to land. Other key findings and results will be reported in the paper to be produced during and after the mid-November workshop. At this time, it would be inappropriate to report partial and tentative findings.

NEW AGRARIAN CONTRACTS:

Sharecropping, Out-Grower Schemes, and Community-Based Tourism in the Context of Zimbabwe's Land Reform

Investigators

Pius Nyambara: Department of Economic History, University of Zimbabwe

Eira Kramer, Edmore Mufema, Joseph Mtisi: University of Zimbabwe

David Hughes: Department of Human Ecology, Rutgers University, USA

Vupenyu Dzingirai, Yuka Suzuki: Yale University, USA

PROJECT PROFILE

In response to severe constraints on land and labor, rural Zimbabweans have devised oral and written contracts that allow commercial producers to project their influence across space and to new populations, without controlling land or labor directly. For example, during the 1990s, smallholders increasingly rented out their underused land to in-migrants on a sharecropping basis. Corporate farms (notably in the tea sector) began to recruit outgrowers in communal lands and in Mozambique. Businessmen have struck deals

with rural district councils for licenses to operate in communal lands, usually for tourism ventures under CAMPFIRE (the Communal Areas Management Programme for Indigenous Resources).

Through such novel arrangements, stronger producers are gaining access to the resources of weaker producers. The cooperation of these parties may generate mutually beneficial synergy or extreme exploitation. Outcomes will depend on the terms of contracts and the impact of wider policies, especially in land reform.



Support

Add-on from USAID/Zimbabwe.

Citizenship through the Zimbabwe Crisis,” Center for Development Research, Copenhagen, Denmark, September 2001.

Outputs

Hughes, David M. 2001. “Re-zoned for Business: How Ecotourism Unlocked Black Farmland in Eastern Zimbabwe.” *Journal of Agrarian Change* 1(4): 575-99.

Hughes, David M. 2001. “The Incredible, Shrinking Communal Lands: How ‘Development’ Betrayed Smallholders in Eastern Zimbabwe.” In *Zimbabwe: the Politics of Crisis and the Crisis of Politics*, edited by Yuka Suzuki and Eric Worby. New Haven, CT: Center for International and Area Studies, Yale University.

Hughes, David M. 2001. “The Opening of Zimbabwe: Pitfalls of Democratic and Development Liberalism.” Presented at the conference “Rethinking Land, State, and

Mtisi, Joseph. 2001. “Unequal Exchange: Pricing of Communal Tea Outgrowers’ Green Leaf in the Honde Valley.” Presented at the Conference of the International Association for the Study of Common Property, Victoria Falls, Zimbabwe, June 2002.

Mtisi, Joseph. 2001. “‘Caught Between the Devil and the Deep Blue Sea.’ Post Colonial State’s Attitude towards Squatters on Demarcated Forest Areas in Manicaland.” Presented at the conference “Rethinking Land, State, and Citizenship through the Zimbabwe Crisis,” Center for Development Research, Copenhagen, Denmark, September 2001.

Nyambara, Pius. 2001. “The Politics of Land Acquisition and Agrarian Differentiation in the ‘Communal’ Areas of Zimbabwe.” In *Zimbabwe:*

The Politics of Crisis and the Crisis of Politics, edited by Yuka Suzuki and Eric Worby. New Haven, CT: Center for International and Area Studies, Yale University.

Nyambara, Pius. 2001. "The Closing Frontier: Agrarian Change, Immigrants and the 'Squatter Menace' in Gokwe, 1980-1990s." *Journal of Agrarian Change* 1(4): 534-49.

Nyambara, Pius. 2001. "Reconstructing the Contours of Citizenship in a Closing Frontier: Agrarian Change, Immigrants and the 'Squatter

Menace' in Gokwe Villages, 1980s and 1990s." Presented at the conference 'Rethinking Land, State, and Citizenship through the Zimbabwe Crisis,' Center for Development Research, Copenhagen, Denmark, September 2001.

Nyambara, Pius. 2002. "The Closing Frontier: Immigrants, Cotton and Sharecroppers in Gokwe, Northwestern Zimbabwe." Presented at the Conference of the International Association of Common Property, Victoria Falls, June 2002.

ACTIVITIES 2001-2002

David Hughes and Pius Nyambara were awarded US\$174,029 in support of the research activity *New Agrarian Contracts: Sharecropping, Out-grower Schemes and Community-based Tourism in the Context of Zimbabwe's Land Reform*. The work was initiated by Mtisi and Hughes, who were able to undertake fieldwork in the eastern highlands of Zimbabwe. Hughes collected and analysed data on ecotourism and cash cropping from Ngorima Communal Lands and Mtisi interviewed 50 key informants with regard to outgrowing contracts in Honde, Tamandai, Chinyaduma and Gwenzi. Nyambara visited the Kwekwe and Gweru area to review the Cheziya-Gokwe post, decode tapes and analyse questionnaires.

Mtisi spent his leave at the University of Oxford, consulting comparative material on contract farming. The three presented papers at a conference hosted by the Center for Development Research in Copenhagen, Denmark, September 2001. This was followed by papers presented by Hughes, Dzingirai, Suzuki, Mtisi and Nyambara at the US African Studies Association annual meeting held November 2001, in Houston, USA. The five, also known as the "working group on new agrarian contracts in Zimbabwe" brainstormed about a number of issues pertinent to their work. Dr. Hughes served as a discussant at the "Zimbabwe in Transition" conference held at the University of Florida, Gainesville, USA (March 2002). The team ran a panel session at the IASCP conference entitled "Remaking the Reserves: New Agrarian Contracts in Zimbabwe." Four papers were presented.

A major development in the project was the recruitment of four new people courtesy of funds freed by Hughes's delayed relocation to Zimbabwe until after the March 2002 presidential election. The four additions are Eira Kramer and Edmore Mufema (UZ), and Vupenyu Dzingirai and Yuka Suzuki (Yale University). Considerable fieldwork was done informing the papers presented at the three conferences noted above as well as publications by Nyambara in the *Journal of Southern African Studies* and Hughes in the *Journal of Agrarian Change*. Preliminary findings include:

- Community-based tourism takes substantial amounts of land out of community agricultural production.
- It causes the least local antagonism when it uses previously alienated land and does not interfere with farming.
- Formal and informal contracts require smallholder farmers to trade land rights for an income stream resulting in loss of security and increased risks in a volatile international market.
- The economic potential of tourism in eastern Zimbabwe may be highly overrated as it compares poorly against other competing land uses like banana cultivation.
- Outgrower contracts increase land values and fuel land shortages.
- Outgrowers have difficulty organising themselves and therefore have difficulty negotiating contracts, resulting in their entering into "take it or leave it" contracts, both formal or informal.

ZIMBABWE MENTOR PROGRAM

Investigators

Sam Moyo: Southern African Regional Institute for Policy Studies

Phanuel Mugabe: Centre for Applied Social Sciences, University of Zimbabwe

Pius Nyambara: Department of Economic History, University of Zimbabwe

Michael Roth: Land Tenure Center, University of Wisconsin-Madison, USA

PROJECT PROFILE

Land reform and sustainable management of land and water resources are emerging challenges for Zimbabwe's economy and rural development. Consensus is forming that Zimbabwe's skewed distribution of landownership needs to be moderated to improve land use management and to better the lives of the landless and poor. Land reform that broadens the poor's access to land, water and financial capital resources can mean higher land use productivity, broad-based economic growth, and political stability. Conversely, poorly designed or implemented reform that redistributes land but fails to broaden access to capital, infrastructure or economic opportunity risks economic regress and entrapping the poor in landed poverty. Zimbabwe's present economic downturn, political unrest, and battered international image underscore the importance of finding solutions that work on behalf of, not against, the poor.

Successful land reform in Zimbabwe will require a new generation of thinkers and leaders within government, civil society and the private sector to lead the development effort. Donor funding and technical expertise will certainly be of help, but the current leadership in Zimbabwe must lay the

groundwork for moving land reform and resettlement forward. Nevertheless, as land reform programs take decades to accomplish, it will be up to a new generation of Zimbabwean development practitioners to design and implement future reforms and to ensure they are sustainable. The emphasis in the short- to intermediate-run will be on training and capacity building to both train this new cadre of leaders and to better integrate government and CSOs in the land reform effort.

The constraints occur at many levels: weakened faculty involvement and skills training at UZ, funding constraints for students that limit the depth and reach of fieldwork and applied sciences, and the relatively untapped potential for partnership between local and international organisations for the two-way exchange of knowledge and mentorship. This project seeks to provide fieldwork and training support to three second-year Masters or third-year Ph.D. students, provide a stipend to the students' major professors for their involvement in the research, strengthen field-level research in Zimbabwe on issues of land, and to create/strengthen the linkage between the university community, government and CSOs. .



Support

Add-on from USAID/Zimbabwe.

Outputs

Proposals awarded funding under the BASIS Zimbabwe Mentor Program:

Chinuwo, Trust. 2002. "Spatial and Temporal Change Analysis of Rangelands in Initial Resettlement Schemes in Zimbabwe."

Marimira, Susan C. 2002. "An Institutional and Organisational Framework for Land Reform: The Case of Zimbabwe."

Marongwe, Nelson. 2002. "A Critical Review of Land Occupations in Zimbabwe: 1998-2001."

Sithole, Pinimidzai. 2002. "Impact of Water Reforms on Women in Zimbabwe."

ACTIVITIES 2001-2002

Program inception began in the year starting with the appointment of Dr. Pius Nyambara (Economic History Department, UZ) as the Coordinator. Dr. Nyambara works with and reports to an Executive Committee made up of Drs. Roth and Mugabe (LTC and CASS respectively) and Prof. Moyo

formerly of SARIPS. Dr. Roth worked with Nyambara on establishing procedures for soliciting proposals, external reviews, mentor selection, preparation of the advertisement, and selection of students and their mentors.



Left to right: Pius Nyambara (Mentor Coordinator), Trust Chinuwo, Nelson Marongwe (two award recipients)

Zimbabwe Mentor Proposals Awarded, 2001

- Nelson Marongwe. *A Critical Review of Land Occupations in Zimbabwe: 1998-2001*, Programme for Land and Agrarian Studies, University of Western Cape
- Susan Chido Marimira. *An Institutional and Organisational Framework for the Fast Track Land Reform Program in Zimbabwe*, Department of Rural and Urban Planning, UZ
- Trust Chinuwo, *Spatial and Temporal Change Analysis of Rangelands in Initial Resettlement Schemes in Zimbabwe*, Department of Animal Science, UZ
- Pinimidzai Sithole, *Impact of Water Reforms on Women in Zimbabwe*, Department of Sociology and Social Anthropology, UZ

A call for proposals was announced in October 2001 by paper advertisement in Zimbabwe and through BASIS, CASS, and SARIPS collaborating institutions and networks within the southern Africa region. Proposals were restricted to students of Zimbabwean nationality. A total of ten proposals were received, four at the Ph.D. and six at the Masters level. Two were submitted by female applicants. Proposals were submitted to an external committee in January 2002 for review. Based on these reviews, Drs. Roth and Nyambara selected three proposals for funding in February, and a fourth was selected conditional on cost-sharing with another funding source.

Each student will be mentored by his or her major professor teamed with one of several US faculty members who have their research funded in

Zimbabwe by either the BASIS CRSP or the LTC/CASS Technical Assistance Project.

A Mentor Review Workshop was held 27 February 2002 to introduce the students to their mentors and provide a forum for student presentations and defense and debate of the proposals.

The program experienced considerable delays arising from the number of revisions to proposals, the length of time spent waiting for receipt of comments from the mentors, and the difficulty in identifying and finalising agreements with student mentors and reviewers. Some reviewers were unable to make their submissions. However, others like Drs. Ferguson, Moyo, Roth and Hughes

provided extensive comments that aided in focusing and tightening the student's research objectives, methodology, and budgeting. Final proposals have been received from all students and disbursement was made in July 2002.

On 25 April 2002, the Mentor Program Coordinator attended a seminar presented by Susan Marimira, at the Rural and Urban Planning Seminar Room. The paper was entitled 'An Institutional and Organisational Framework for Land Reform: The Case of Goromonzi District.' The paper was well-received by the seminar participants who gave her very useful feedback, which she incorporated into the final proposal.

