2002-3 BASIS CRSP Project Work Plan
August 2002

I.   **Research Project Title:** Rural Markets, Natural Capital and Dynamic Poverty Traps in East Africa

II.   **Collaborating Institutions and Researchers: Cornell University** (Ithaca, NY): Dr. Chris Barrett(principal investigator), Dr. Larry Blume, Dr. Bart Minten, Dr. Ben Okumu, Dr. Alice Pell; **FOFIFA** (Antananarivo, Madagascar): Mr. Victor Rakotoniaina, Mr. Jean Claude Randrianarisoa, Dr. Jhon Rasambainarivo (co-principal investigator); **International Centre for Research in Agroforestry** (ICRAF, Nairobi, Kenya): Dr. Frank Place (co-principal investigator), Mr. Justine Wangila; **Kenya Agricultural Research Institute** (KARI, Nairobi, Kenya): Dr. Festus Murithi (co-principal investigator), Mr. Collins Obonyo, Mr. Martins Odendo, Ms. Judith Oduol, Mr. James Ouma; **University of Nairobi (Department of Agricultural Economics, Kabete Campus)**: Dr. Willis Oluoch-Kosura.

III.   **Dates Covered by Work Plan:** October 1, 2002 – September 30, 2003

IV.   **Completion Date:** Tentatively expected to complete September 30, 2004.

V.   **Support:** Core BASIS CRSP funding with matching funds from Cornell University and the Rockefeller Foundation. Supplemental funding (about $35,000 over the coming year) provided by the Rockefeller Foundation and by IDRC(Canada) to the University of Nairobi and by USAID-Madagascar's Ilo project with Cornell for qualitative research and training, and (about $1.688 million over five years) by the National Science Foundation's Biocomplexity in the Environment special competition on the Dynamics of Coupled Natural and Human Systems to Cornell University and ICRAF for biophysical research in three of the Kenya sites and more in depth bioeconomic systems modeling.

VI.   **Program Overview:** 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 the poorest populations in the world 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.

Furthermore, those caught in a poverty trap may have strong incentives to degrade 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 today in Kenya and Madagascar and in discussions among policy makers, donors, and NGOs as to how best to design poverty reduction strategies.

The project "Rural Markets, Natural Capital and Dynamic Poverty Traps in East Africa," is being 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 engaging in active discussions with policy makers involved in the Poverty Reduction Strategy Program (PRSP) processes in each country, with the most senior levels of the agricultural research communities in each country, and with local communities about 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.

VII.   **Annual Work Plan:**

A.   Integration of Activities with Long-Term Project Research Plan: The 2002-3 work plan revolves around four classes of activities – data collection, data analysis, stakeholder consultations and training – that are each instrumental to the longer term objectives of the project.

In the coming year, 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. These data are essential to the project.

The second major 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 but is expected to continue well beyond the 2002-3 project year. Data analysis will generate a regular stream of written outputs in the form of policy briefs, papers submitted for peer-reviewed conference presentation and publication, and student theses. Our analysis will also provide the foundation for active discussion with communities, donors and policymakers about appropriate poverty-reduction strategies for rural Kenya and Madagascar.

This leads naturally to the third major class of project activities: consultations with stakeholders in the communities we are studying as well as 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 takers 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 for their use and feedback. We will continue the series of annual stakeholder meetings we have begun as well as the annual team meeting.

The fourth major class of activities revolves around degree and non-degree training. The project is investing in or leveraging degree (MS and PhD) training for students at Cornell (1 Kenyan, 1 Ethiopian, 1 American, 1 Canadian and 1 Norwegian as well as 1 Malagasy who plans to start in January 2003) and the University of Nairobi (2 Kenyan PhD candidates). We are also 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 successfully begun this year. Finally, the PI 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.

B. <u>Detailed Description of Planned Activities:</u> As described previously, our 2002-3 work plan encompasses four classes of activities: data collection, data analysis, stakeholder consultations and training. The ensuing descriptive addresses these in order. The accompanying table maps out the timeline for the work plan by activity class and the fiscal year quarter in which we expect to conduct the work.

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 over a bit into the first quarter of 2002-3. But at present we anticipate having the panel data collection in all sites other than Embu completed by Sep. 30, 2002. Data entry and cleaning will continue through the first several months of the 2002-3 project year.

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 project's 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 (Canada) 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. The basic design of the qualitative work follows the "sequential mixing" design of integrated qualitative-quantitative poverty analysis, and is described in the general terms of reference reproduced in Appendix 1 to this work plan. 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

2002-3 Project Work Plan, by Fiscal Quarters

	First Quarter (Oct 1 – Dec 31, 2002)	Second Quarter (Jan 1 – Mar 31, 2003)	Third Quarter (Apr 1 – Jun 30, 2003)	Fourth Quarter (Jul 1 – Sep 30, 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 Two-week course @ Cornell	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

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. <u>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.</u>

Data analysis: As indicated above, the first data analysis task (after data cleaning) will be estimation of transition matrices for each site. These will be used for selecting households for the qualitative data collection exercise. But they also provide the first early 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 (2001 *World Development*) in studying chronic and transitory poverty in South Africa, Lybbert et al. (2001 Cornell working paper) in studying wealth dynamics among Ethiopian pastoralists and by Barrett et al. (2001 *Food Policy*) 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 Crops, Livestock, And Soils in Smallholder Economic Systems (CLASSES) model, we are developing under this project. This will involved 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 (described below).

Consultations: Our project is targeted toward informing debate on high profile policy questions highlighted in the new Kenya Rural Development Strategy (KRDS) and the Poverty Reduction Strategy Paper (PRSP) processes in both Kenya and Madagascar. In both countries, the PRSP has identified agricultural and rural development as top priorities towards poverty alleviation and economic growth. The 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 program of

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work (e.g., USAID-Kenya mission SOs 6 and 7). Toward that end, we are in regular, ongoing contact with USAID missions and local officials and plan national policymaker workshops to be held in Kenya in October and August and in Madagascar in March.

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. <u>The community and national workshops are critical for validating our analyses and for building bridges for having impact down the road.</u>

Training: Degree training at Cornell and Nairobi will continue. Paswel Phiri and Justine Wangila are each doing dissertation research under the direction of Dr. 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 Chris Barrett, as is Dr. 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. The project considers the non-degree training activities of equal importance to degree training. Professional staff 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 are therefore investing 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). The bioeconomic modeling course began during the 2001-2 project year with a 2-day introduction module, held in Nairobi in June, and the subsequent launching of web-based instruction (see the course

web site at http://courseinfo.cit.cornell.edu/courses/aemspecial/). Web-based instruction will continue in the new project year. We will also hold a two-week residential course at Cornell from October 28-November 9, 2002. 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 (for them, tenth for the course) student from their Fianarantsoa site, where we also work. A course description is attached as appendix 2 to this work plan.

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 Chris Barrett and Csaba Csaki (World Bank) for August 16, 2003, immediately prior to the 25th triennial meeting of the International Association of Agricultural Economics in Durban, South Africa. The tentative program (attached as appendix 3) 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, Professor Carter, and other leading scholars in this general area of research.

C. <u>Links to Other Projects</u>: In Kenya, we have strong links to three other USAID-funded projects and potentially to a fourth, new project. We share our Baringo and Marsabit sites with the USAID Global Livestock CRSP Pastoral Risk Management (PARIMA) project that is funded through September 2003. PARIMA has enabled us to leverage data collection in our northern Kenya sites significantly, to our mutual benefit. The BASIS project on "Building Assets for Sustainable Recovery and Food Security" also works in this same Baringo site.   We keep each other informed on efforts there and cooperate in data collection and interpretation. The new 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 KRDS and PRSP 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".   These will culminate in major, high-level policy workshops in 2004 that will significantly improve the visibility of BASIS research in Kenya. Finally, the newly funded SANREM CRSP watersheds project awarded to Cornell University (Prof. David Lee is the principal investigator) will likely include either our Baringo or Vihiga

sites in Kenya (along with sites in Ecuador and the Philippines). That team's bioeconomic modeling work is at a more aggregate scale than ours, creating a natural up-scaling complement to our work under BASIS.

Our project is most closely linked in Kenya with our team's new five-year $1.7 million National Science Foundation 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 begins September 1, 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, squarely addressing one of the concerns raised by the Board.

Our project is also closely linked with two other projects directed by ICRAF. One is a DFID funded project on 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, on 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 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 both 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.

D. <u>Relationship Between Activities and Key Findings</u>: 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 are therefore both exploring these relationships econometrically and developing an improved bioeconomic modeling approach based on systems dynamics methods in close collaboration with an outstanding 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.

    <u>The project's consultations and training activities are aimed at facilitating access of key decision</u>-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, web site hits, and add-on funding for training.

E. <u>Anticipated Outputs</u>: During the coming year, we anticipate a variety of outputs through which we will disseminate project findings. Anticipated publications include

(i)   Several more policy briefs: we plan to release 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.

(ii)   A set of "Voices" briefs based on intensive, qualitative, oral history research with households in our samples.

(iii)   an applied economic theory paper on activity choice and poverty traps

(iv)   a 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

(v)   a plenary address on "Rural Poverty Dynamics: Development Policy Implications" at the opening session of the 25th triennial meeting of the International Association of Agricultural Economics on "Strategies for Reducing Poverty", to be held in Durban

(vi)   a 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."

(vii)   a paper on wealth-differentiated technology adoption dynamics in Madagascar

(viii) a paper on informal insurance, groups and technology adoption in Kenyan agriculture

(ix)   a Cornell MS thesis on microfinance and nonpastoral enterprise development in northern Kenya

(x)   a paper on bioeconomic modeling and land management in east Africa

(xi)   trip reports from international travelers under the project

We will also have a functioning prototype of the CLASSES model, with a preliminary application to at least one site. There will be the usual complement of trip reports, evaluations of the bioeconomic modeling course, etc. We will post all these materials and regularly the project web site (http://www.aem.cornell.edu/special_programs/AFSNRM/Basis/ on which we post all project outputs.

F.   <u>Problems and Issues</u>: The main problems faced in the 2001-2 project year concerned (i) previously unrecognized weaknesses in the existing data set for Embu on which we planned on 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 has set us back about six months in the field work in Embu and reduces our capacity to undertake the full range of welfare dynamics analysis in that one site prior to year three of the project. This loss has been partly offset by the fortuitous opportunity to add a similar site in western Kenya (Madzu, Vihiga District) in which the University of Nairobi had collected detailed household survey data in 1989. Remarkably, we 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 early in the coming project year.

The political crisis in Madagascar forced the 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. Data collection began in early August, shortly after the political crisis lifted and as road trafficability and fuel availability began to improve considerably in the countryside. Because all policymaker-level attention is presently focused on post-crisis recovery, we did not try to convene a new national-level workshop. The Madagascar team nonetheless held community-level consultations as planned prior to the final design and fielding of the survey.

VIII. **Budget**: Per instructions from ME, no new budget is required with this work plan.

Appendix 1

Social Aspects of Dynamic Poverty Traps: Complementary Studies to Survey Analysis

General Terms of Reference

<u>Background</u>

Cornell University, the International Centre for Research in Agroforestry (ICRAF), the Kenya Agricultural Research Institute (KARI) the University of Nairobi (UoN), and FOFIFA of Madagascar have recently been funded by the Broadening Access and Strengthening of Input Systems (BASIS) Collaborative Research Support Program (CRSP) of USAID to undertake a study of rural poverty traps in East Africa. The research intends to build on existing quantitative datasets to undertake econometric analyses of the determinants of poverty traps and to build simulation models to assess the impacts of alternative technological and policy interventions on alleviating poverty. Initial meetings with stakeholders and potential clients have highlighted the need for increased social analysis in order to understand better the processes involved in inhibiting or promoting welfare enhancement by rural households.

The project has 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 project's 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 (Canada) and the Rockefeller Foundation to ICRAF and the University of Nairobi, respectively. In Madagascar, this work is supported by Cornell University's Ilo project from USAID-Madagascar.

<u>Objectives</u>

The principle objectives of this social component of the project are:
1. To characterize, identify, and analyze dynamic poverty processes using social and historical methods, with particular attention being given to the effects of shocks on welfare dynamics and the relationship between natural resources management practices, changes in natural capital (soils, forests, water) and human welfare dynamics.
2. To identify existing and potential strategies for households to escape from poverty traps and to understand the constraints in employing them.

These objectives are highly similar to those in the rest of the BASIS project, contributing both to the understanding of poverty traps and the simulation of the impacts of potential beneficial interventions.

<u>Activities</u>

The activities will involve qualitative techniques, beginning with focus group consultations to understand the range of important concepts related to poverty processes. This will be followed by case studies of selected households to construct social-historical profiles of distinct household types and by key informant interviews to corroborate and expand upon key issues and details emerging from the focus group and household interviews. The data to be analyzed include that on household livelihoods, vulnerability to economic and health risks (including HIV-AIDS), risk coping mechanisms, management of assets, investment strategies, gender relations, social capital and networks, natural resources management practices (especially regarding soil fertility and soil and water conservation) and the role of off-farm activities. Particular attention will be paid to understanding the historical context that underpin household strategies to improve their welfare. Following preliminary analyses of the case studies, focus group consultations will once again be held to discuss analyses and confirm the opportunities and limitations of strategies for poverty reduction.

(1) The work in each community should begin with community-level focus group interviews. Questions to be asked include, but should not be limited to:

- What defines poverty in this community and what are therefore the best indicators as to who is poor? Where does the poverty line lie in this community? The objective of this particular line of questioning is to establish local conceptualizations of poverty, identify appropriate variables measured in the surveys and the threshold point(s) at which one transitions from being poor to not poor. Then do a wealth ranking to establish which households are poor and nonpoor (as a check against the survey-generated transition matrix).
- Do you think a greater, smaller or the same share of people in this community live in poverty today as compared to ten years ago? Why? Twenty years ago? Why?
- Are poor people treated better, worse, or the same by others in the community relative to how they were treated ten years ago? Why? Twenty years ago? Why?
- Do you think a greater, smaller or the same share of people in this community are wealthy today as compared to ten years ago? Why? Twenty years ago? Why?
- In the past, how did the poor escape poverty, or did they escape it at all? Are those strategies still accessible to the poor here today? If not, why not? Have new strategies become available in the past ten years for the poor for escape poverty?
- When people become poor today, does it take them less time, more time, or about the same to pull themselves out of poverty? Why?
- What are the primary risks that threaten to cast people who are not poor presently into poverty? Have these risks changed over the past ten or twenty years?
- What mechanisms exist for avoiding these risks before one suffers a shock? Have these changed in availability or effectiveness over the past ten or twenty years? Who has access to these risk avoidance mechanisms?
- What methods exist to cope with shocks after they occur? Have these changed in availability or effectiveness over the past ten or twenty years? Who has access to these risk coping strategies?
- How have land use patterns changed over the past ten years? Why? What effect, if any, has this had on agricultural production patterns (crop choice, cultivation practices and productivity)? What effect, if any, has this had on livestock production patterns (species choice, husbandry methods, and productivity)?
- What are the most popular natural resources management practices today? Why? Has this changed over the past ten to twenty years? If so, why? Are there past practices that were effective but that are no longer feasible or desirable for some households? Explain.
- What sort of informal self-help, marketing, credit, natural resources management or other such groups exist in the community? How do these originate? Who can participate in the group(s), who cannot and why?
- What sort of formal self-help, marketing, credit, natural resources management or other such groups exist in the community? How do these originate, in particular did these arise within the community independent of outside interventions or were they created or encouraged or even financially supported by an outside development agency? Who can participate in the group(s), who cannot and why? Which ones have been effective, which have not, and why? Which groups previously existed but have disbanded (especially if they disbanded due to failure) and why?

(2) The second activity, following the community-level focus group discussions, is household-specific interviews to explore household-specific histories of welfare and NRM dynamics. Two households are to be selected from each of the four cells of the transition matrix to be constructed from the project survey data prior to the start of the qualitative work. That is, select two households from the "poor before, poor now" category, two from the "poor before, not poor now" group, two from the "not poor before, but poor now" cell, and finally get two households from the "not poor before or now" group. There's no need for random sampling. Select households with whom you feel you can get good and truthful information that will help explain the quantitative data, offer key insights on the root causes of poverty traps or paths out of poverty, or both. Ask the same questions as found for the community-level focus group interviews, but now with an emphasis on the respondent household. Emphasize, however, the following household-specific questions.

- Have you ever been poor?
  - o If yes, what caused you to be or become poor? Were most of your clan or neighbors in a similar situation or was your situation different from others'?
  - o If yes, were you able to climb out of poverty?
    - ▪ If yes, how long did it take you to climb out of poverty? How did you do it? What were the essential opportunities or forms of assistance you had? Were others in similar circumstances able to climb out of poverty faster or slower than you and why?
    - ▪ If no, how long have you been poor? Were others in similar circumstances able to climb out of poverty and why or why not?
  - o If no, how have you managed to avoid becoming poor? What have been the key strategies, opportunities, or forms of assistance that have enabled you to stay out of poverty?

(3) Finally, interview key informants (local elders, extension agents, agricultural traders, mission or development group officials) to check into the answers given in the household-level and community-focus group interviews. A key objective in the key informant interviews is to get a sense of what interventions have been tried in an area previously, which were successful, which might have proved successful with a slightly different design or management (and explain what changes would have been necessary), and which were failures from which one can learn.

The local investigators will be provided with a camera for use, either a borrowed digital camera or a disposable camera. They are to take photos of all respondent households under activity 2 and of focus group meetings under activity 1.

Outputs

The outputs of this activity will consist of two written products. The first is a detailed report on each site describing the social dimensions of poverty processes at household and community level, with explicit attention given to whether welfare dynamics relate to changing natural resource conditions and, if so, how. These outputs will subsequently be synthesized across the project sites in Kenya and Madagascar in collaboration with the BASIS project leaders. The outputs of this activity will also have important intermediate impacts on the project's econometric and computer simulation work.

The second output, from activity (2), the household-level oral histories, will be a brief (1-2 page) 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 (copies of which are available through ICRAF).

Timeline

The social analysis will take place following the completion of the quantitative surveys 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. In most sites, this will be November 2002 – March 2003. A report will be written by the team and submitted to Cornell, ICRAF, KARI, FOFIFA and the University of Nairobi by May 15, 2003.

Budget

To be established separately for each site.

Appendix 2

BIO-ECONOMIC MODELING COURSE

Cornell University Dept. of Applied Economics and Management in conjunction with USAID BASIS CRSP project "Rural Markets, Natural Capital and Dynamic Poverty Traps in East Africa"

Course description

This course is being offered for scientists at FOFIFA, ICRAF and KARI who have responsibilities for policy and technology analysis. Students will be trained in principles of systems dynamics analysis, and in the design and use of the Crop, Livestock and Soils in Smallholder Economic Systems (CLASSES) integrated bioeconomic model of east African rural systems dynamics being developed under the USAID BASIS CRSP project "Rural Markets, Natural Capital and Dynamic Poverty Traps in East Africa." The course consists of two sessions of classical instruction – a two-day session in Kenya in June 2002 followed by a two-week session in the United States in October 2002 – and electronic consultation between the students and course staff prior to and following the first session, culminating in each student's design, calibration, validation and sensitivity analysis of a variant of the CLASSES model. Students will be provided with their own copies of two core texts and a license for the VENSIM software used in the course.

Course outline

TWO DAY COURSE IN NAIROBI (June 2002)
Day 1
1. Basic principles of system dynamics
2. Review of system dynamic models and their application
3. Introduction to system dynamics simulation software

Day 2
4. Review of basic mathematical concepts
5. Units of measurement and their importance in building meaningful models
6. Experimentation and building of simple simulation models

TWO WEEK COURSE AT CORNELL (October 2002)
Week 1
1. Day 1: Introduction to the CLASSES bio-economic model - (structure and content)
2. Day 2: Building a simple bio-economic model
3. Days 3, 4, and 5: Adding behavioral and interdisciplinary features to the simple model, incorporating the human decision making component

Week 2
1. Days 1 to 2: Review of Course material covered in Week 1. Students embark on and complete a bio-economic modeling project
2. Day 3: Evaluation and discussion of individual modeling projects
3. Day 4: Model testing, calibration and validation. Running sensitivity analyses
4. Day 5: Conclusion of the course and award of certificates

COURSE OBJECTIVES
The objectives of this course are to:
➢ Impart skills to students that will enable effective use and modification of the integrated bio-economic CLASSES model for policy analysis. These 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 more accurate and sophisticated ex ante impact assessment.
➢ Stimulate systems thinking by the students in order for them 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.

COURSE REQUIREMENTS
Students must possess
a) a minimum of a bachelors degree in agricultural science, biology, statistics, mathematics, or social sciences (economics, sociology, anthropology etc.), with significant post-degree research experience. A masters degree is strongly preferred.
b) strong quantitative and analytical skills
c) proficiency in English (all instruction and applications are in English)
d) significant experience with quantitative microcomputer applications such as spreadsheets, relational databases, econometric or mathematical programming packages, or basic computer programming languages (e.g., C+, BASIC, FORTRAN).
e) experience in policy simulation and management of agricultural systems is highly desirable but not prerequisite.

COURSE STAFF:

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

DETAILED SYLLABUS

TWO DAY INTRODUCTORY SESSION IN NAIROBI, KENYA

Day	Morning topics	Afternoon topics and homework assignments	Readings
1	1. A highlight of the system dynamics concepts, debates and evolution. Their usefulness and application to real life problems 2. Understanding patterns of growth, the law of unintended consequences and counterintuitive behaviour of social systems 3. Causes of policy resistance 4. Why simulation is essential 5. Principles and steps for successful use of system dynamics	1. Common modes of behaviour in dynamic systems (exponential, goal seeking, S-shaped growth, oscillation, growth overshoot and collapse) 2. Understanding the forces behind common modes of behaviour Attempt exercises in Ford Ch. 1 p 12. No. 1,2 and 3 Challenges in Sterman Ch. 1- 4	- Ford Ch. 1, 2 and 3; - Sterman Ch. 1, 2, 3 and 4; (Students would be expected to have read and comprehended these chapters prior to attending the course)
2	1. Introduction to system dynamics simulation software 2. Review of mathematical concepts 3. Incorporating units of measurement	1. Demonstration of system dynamics modeling package 2. Designing and running of simple system dynamics models Undertake model building exercises in Ford chapters 3 and 4 and follow up examples in the system dynamics software user manual.	- Ford appendix A & B - System Dynamics simulation software manual - Sterman appendix A

TWO WEEK SESSION IN ITHACA, NEW YORK, USA

Day	Morning topics and discussion	Afternoon topics and homework assignments	Further Readings
Mon	1. Introduction to bio-economic models - structure and art of formulation 2. Illustration of the	Exercises in problem articulation, hypothesis formulation and defining model boundaries based on model objective(s) or	1. Relevant examples from the Ford text 2. Sterman Ch.3 parts 3.4 to 3.6

	CLASSES bio-economic model especially integration of various disciplinary components 3. Key steps in building bio-economic models	purpose (use Sterman tables 3-1 and 3-2 on page 86 and 97 respectfully as reference)	
Tue	1. Building a simple bio-economic model with a few stocks, flows and feedback loops 2. Introducing the dynamics of growth inherent in the CLASSES model both linear and nonlinear and using both analytical and numerical approaches	1. Experimentation with different types of causal loops and nonlinear relationships based on exercises and material in Sterman Chs. 4 and 8 (S-shaped, exponential and oscillatory growth patterns) 2. Application of knowledge gained so far in modeling or adding behavioral features to the simple bio-economic model built earlier on in class	1. Sterman chs. 4, 8 and 14 2 Also refer to figure 7-6 in Sterman 3 Ford ch. 4 (Modeling the Mono lake basin), ch. 15 (The Kaibab deer population) 4 Read the CLASSES model documentation material
Wed	1. Expanding the simple model to include fairly complex, disciplinary based biophysical components of the system (e.g. fertilizer, manure) – crop yield response functions, herd dynamics, animal mobility, animal nutrition, soil erosion and HIV epidemic issues etc.	1. Attempts to model the static version of the CNCPS model, the EPIC (erosion potential impact calculator) or the USLE (universal soil loss equation) model and the SIR model(i.e. susceptible population, infectious population and the recovered population model)	1. CNCPS documentation material 2. Printouts of relevant soil, animal science and human health material 3. Sterman ch. 9 sections 9.2 more specifically 9.2.7
Thur	1. Introducing the human decision making procedures (bounded rationality), delays, market structures and the conditioning economic, social and policy environments 2. Introducing human response to risk and uncertainty	1. Group discussions to come up with observed human behavior in specific localities 2. Attempt to model such human behaviors 3. Optional: attempt Sterman exercises/ challenges in ch. 13 4. Attempt ch. 15 challenge on policy design in the market growth model parts 1, 2, 3 and 4.	1. Sterman ch. 13: - Finding formulation flaws - Goal formation with external and internal inputs - Modeling floating goals - Resource allocation 2. Sterman ch. 15: - Modeling habit, routines and rules of thumb in human decision making processes 3. CLASSES model documentation material on human decisions

Fri	Review course material covered so far Hand out of project topic and material for the following week	1. Revision of topics not well understood by most or some of the students	Read project material for the area to be modeled Review material already covered in the course
Sat - Sun	(Cultural visit, shopping, etc)		
Mon - Wed	Hands on class project begins for the next three days Students are allowed to ask questions and seek help as they see fit . Further review of problem areas may be done in the course of the project period	1. Students given further references based on their specific areas of need	Relevant chapters in Sterman and Ford as well as documented material on existing bio-economic models
Thurs	-Collection and evaluation of each individual's project model - Students are given another chance to firm up on areas of interest	1. Students with persistent problems are given extra tutorials	- Reference to selective reading material based on individual needs
Fri	Model testing, calibration and validation Sensitivity analysis and wrap up and consolidation of the training course Agree on areas for further follow up when away from Cornell	1. General discussion with students on their modeling experience and on how they would benefit further from the course through distance learning	
Sat	Conclusion of the course	Award of certificates	

Appendix 3
"Analytical and Empirical Tools for Poverty Research"

Learning Workshop of the 25th International Conference of Agricultural Economists Durban, South Africa, Saturday, August 16, 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
10:30-11:00	Coffee/tea break
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 that are used to measure well-being of households and individuals, their strengths, weaknesses and consistency. Also discuss the importance of looking at the entire distribution of well-being in populations (e.g., using tests of stochastic dominance), rather than relying on the traditional use of subjective poverty lines or cardinal measures of inequality.)
1:00-2:15	Lunch
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]
3:15-3:45	Coffee/tea break
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

Addendum to 2002-3 Workplan: Responses to Comments From The Board of Directors

The BASIS Board of Directors, in their February 22, 2002, annual meeting, reviewed our project and offered a variety of comments communicated in a subsequent letter from the BASIS CRSP Director. We were asked to respond to five specific concerns raised by the Board as an addendum to this workplan. We address these in turn, reproducing the Board's comments in *italics*, followed by our responses.

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 all helpful cautions and in many ways signal to us that we did not communicate our research design as clearly as we might have. Let us try to clarify these points now.

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 agro-forests 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 (fallows, 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 (see Appendix 1). 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 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 (Drs. 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. We apparently failed to communicate well in our initial proposal that 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 also 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 be careful not to 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 also felt as if the policy impacts as presented are diffuse and sometimes contradictory. They would like to see the potential policy impacts expressed more clearly within the on-going 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 repeated interaction every several months by various members of our team, we are able to learn what issues policymakers are struggling 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.

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