



Trip Report: Rural Markets, Natural Capital, and Dynamic Poverty Traps in East Africa

Kenya: 16-30 June 2001
By Christopher B. Barrett

Traveler: Dr. Christopher B. Barrett, Associate Professor, Department of Applied Economics and Management, 315 Warren Hall, Cornell University, Ithaca, NY 14853-7801; tel: (607) 255-4489; fax: (607) 255-9984; email: cbb2@cornell.edu

Dates: 16-30 June 2001

Itinerary: 16-18 June: travel from Ithaca to Nairobi, Kenya
18-20 June: BASIS CRSP team meeting, Roswam Hotel, Kerugoya (see Appendix 1)
21-22 June: field site visits, Kirinyaga, Embu and Baringo Districts
23-27 June: GL CRSP PARIMA project team meeting and 2nd biennial workshop, Egerton University, Njoro
28-29 June: travel to Nairobi and meetings in Nairobi with International Livestock Research Institute, University of Nairobi, USAID, CARE, KARI, Rockefeller Foundation
29-30 June: travel from Nairobi to Ithaca

Objectives: The purposes of the trip were, roughly in chronological order, (1) to lead the initial meeting of the BASIS CRSP project team, (2) to visit two of the BASIS CRSP field sites (in Embu and Baringo Districts), (3) to participate in the Global Livestock CRSP PARIMA project team meeting and biennial workshop, (4) to meet with colleagues and prospective collaborators at Egerton University, the University of Nairobi, and the International Livestock Research Institute (ICRAF), (5) to meet with incoming Ph.D. candidates from Kenya sponsored by the Rockefeller Foundation fellowship program at Cornell, and (6) to brief USAID-Kenya and USAID-REDSO staff on BASIS project activities.

Summary results: Overall, this was a very productive trip. The BASIS CRSP team meeting went very well. We satisfied each of the stated objectives of the meeting: (1) Involve all team members in final definition of general project objectives, research design and methods (both for data collection and analysis), as well as of the project strategy for outreach to ensure practical usefulness of the research at both the broader level of

national and regional policymakers and donors and the more local level of subject communities (Baringo, Embu, Marsabit, Siaya/Vihiga in Kenya, Fianarantsoa and Vakinankaratra in Madagascar).

(2) Pin down FY2002 (Oct. 1, 2001 - Sep. 30, 2002) work plan details: timing of data collection at each site, timing and site of next team meeting, analysis and modeling.

(3) Reach agreement on division of administrative, research and outreach responsibilities between Cornell, FOFIFA, ICRAF and KARI and match the budget to this division of responsibilities.

(4) Help with team building by providing more opportunity for team members from different institutions to interact with one another.

22 persons attended the two-day meeting – 5 from Cornell (1 of whom is based in Kenya), 2 from ICRAF, 3 from FOFIFA/Madagascar, and 12 from KARI or KEFRI (Kenyan government research institutions on agriculture and the environment, respectively). A copy of the agenda and a list of participants are included as an appendix to this report.

The field sites visit in Embu/Kirinyaga and Baringo went very well. We visited three Kikuyu farming communities in the former area -- an integrated smallholder coffee/dairy/grain/ vegetables operation, a large commercial coffee operation that included post-harvest processing facilities (vertical integration into lucrative non-farm activities), and smallholder mixed tea/vegetables/grains/tubers/dairy farms nearer Mount Kenya.

The importance of integrated input-output marketing systems emerged repeatedly in conversations with farmers. The smallholder coffee sector is suffering terribly since partial liberalization. Where coffee farmers used to receive input packages (fertilizer, pesticides) as in-kind credit collateralized by future harvest when the state ran the whole coffee marketing system, now they can sell to anyone, but this means that no one will give them inputs on credit. Given working capital constraints, they therefore are not using chemical inputs and quality is suffering. By contrast, the large commercial coffee operation, which is flush with funds due to its processing operations, can afford inputs and is thereby producing higher yields and higher quality beans and parchment than do the neighboring smallholders. When the harvest peaks, that operation often hires a couple hundred casual workers at a wage rate of KSh100/day. This arrangement stands in contrast to that prevailing in the tea farming areas just a few kilometers away. Tea labor is hired on a piece rate basis because workers' speed is less potentially injurious to the tea bush – which needs to get pruned back regularly anyway – than it is to the coffee trees. Moreover, because tea must be processed fresh and there are economies of scale to the processing, the many small factories in the tea growing area have effective natural local monopsonies in tea purchasing. This enables the private tea factories to offer local growers chemical fertilizer as in-kind credit against the tea harvest. Tea's natural pest-resistance means it doesn't require pesticides. Furthermore, the tea bush's strong root system provides a very effective erosion control measure when planted densely on the steep hillsides in the Mount Kenya area. The tea farmers are pleased with the returns they're enjoying – more than \$1000/year net cash income (i.e., not including the value of labor or land) for one female household head cultivating just over a hectare of tea.

Like tea, the dairy sector in the Embu/Kiringaya region appears an effective platform for smallholder accumulation. The good road network in the area means that those who can afford dairy cattle can sell milk daily within the local market at a profit. Given population density and land pressures, the farmers we saw were all practicing zero-grazing, supplementing the feed from cut-and-carry napier grass, calliandra and crop residues with commercially purchased feed concentrates (bonemeal, soy, etc.) and veterinary inputs. Milk yields were as high as 24 liters/day. Farmers were using the manure, often mixed with household food wastes and nonpalatable crop residues, in composting for nearby vegetable fields, where they were growing high-value, high-nutrition crops such as tomatoes, kale, cabbage, carrots, and melons for both home consumption and sale. These fields are irrigated as well. Soil quality is very high, erosion rates are low, children are in school and health indicators are relatively good. This is clearly a high potential area in which steady accumulation is plainly accessible to those who can get into dairy or tea or who can achieve sufficient scale in coffee in order to add post-harvest processing. The technological differences between coffee and tea – and the resulting different organization of the input and output marketing channels – means that smallholder coffee production is not, under current institutional arrangements, lucrative for modest-sized farmers the way tea is. The vibrancy of this zone underscores the potential for smallholders where financial systems and technologies together make high-return activities accessible. Fixed costs, agroecological conditions (e.g., suitability for tea) and biological production lags that necessitate credit (in coffee or tea, as compared to dairy) nonetheless pose a serious obstacle to some small farmers.

The semi-arid site in N'gambo, Baringo District, is but four hours' drive from the Embu/Kirinyaga site, but seems a world away. There is an active nonfarm sector in Marigat town, 8-10 kilometers from N'gambo, and that provides opportunities for some of the Njemps people, especially those with secondary school training, to complement their agropastoral incomes with a more stable cash income from salaried employment or trading. There is a state-sponsored irrigation scheme, fed by the Pekerra River (which went dry during the 2000 drought), in which farmers are allocated one hectare plots in order to grow seed maize for the Kenya Seed Company. They too are provided a package of inputs as in-kind credit against the sale of seed.

Baringo's climate dictates greater dependence on extensive grazing of livestock. Almost all the cattle in N'gambo died in the 2000 drought. Those that were supplemented fared best. Households are rebuilding herds now, mainly through fast-breeding goats that they then sell in order to buy cattle. This "species sequencing" is the means by which they rebuild to high-return (albeit high-risk) herds in the wake of drought shocks and in the face of credit constraints that keep them from restocking their cattle herds through market.

N'gambo's Njemps households grow dryland maize, millet, sorghum and beans. Yields are low and complete crop failure is common. Farmers use rainwater harvesting and conservation techniques to maximize the chance of getting a crop from these water-starved soils. The 2000 crop failed completely in unirrigated areas – and even the state irrigation scheme dried up in most of its reaches, causing crop failure – and the current crop looks poor. Some of the dryland farmers have been planting the food aid they

receive in hopes of getting more maize or beans. By contrast, neighboring farms that irrigate by pumping water from the Pekerra River using diesel pumps or by diverting water from the River by dug weirs – a very labor-intensive activity as we found by observing a team of five young men digging one – are getting terrific yields. The maize stood three meters high in the fields we visited. Not everyone has access to irrigation, however. The pumps are expensive, even on a rental basis (there is a local rental market) and it is expensive and difficult to mobilize labor teams to dig weirs, especially for female-headed households. There has nonetheless been a rush for land accessible to the river over the past four years, when local farmers first started pump irrigating fields in 1997. Furthermore, these households are not using any fertilizer, except for occasionally on melon fields. They let livestock from throughout the community graze on the harvested fields' crop residues, thereby getting some manure return, but the horticulturalist and animal scientist accompanying us explained to the farmers (and us) that the high yields could not be sustained without greater nutrient replenishment of the soils, which were obviously in poor condition. These farmers are growing maize for home consumption and local sale, have no access to credit, and cannot afford fertilizers. The prospects for maintaining yields depend on their capacity to put fields into extended fallow. They already engage in crop rotation (maize, beans, melons), but the soil needs to rest. But land accessible to the river by weir or pump is scarce, so fallowing is increasingly difficult given land pressure, even with tenurial security under traditional arrangements.

Just outside N'gambo we also visited a Turkana village populated by destitute pastoralists driven from their traditional areas to the northwest by drought and cattle raiders. These households are in dire shape, with almost every child we saw suffering obvious malnutrition (kwashiokor generally, with a few cases of marasmus). Their herds are depleted, the land they occupy is highly eroded and of low fertility with no irrigation capacity. Things look grim there. We visited a neighboring child health center, the Family Life Training Center, which takes in 10-12 seriously malnourished children each month, accompanied by their mother or an older sister. The social worker/nutritionist who runs the place monitors height and weight daily for each child so as to provide appropriate ration size and composition to rebuild body mass. Too often, she says, the significant gains the children enjoy while at FLTC for a few weeks are lost within weeks of returning home. FLTC's funding has largely dried up as the Minister of Culture is no longer supporting institutional facilities, only community-based efforts. They're seeing a greater number of children orphaned by AIDS or postpartum maternal death. The health situation among the poorer populations of the drylands is clearly deteriorating quickly. Those with access to reliable nonfarm incomes, who accumulate a large enough herd to weather climate shocks like last year's drought, or who have cash enough and land rights near the River to be able to irrigate crops are doing alright. Everyone else is suffering badly and lacking in confidence of a recovery. These seem paradigmatic cases of poverty traps.

A recurring theme across the sites was the importance of integrated input-output marketing channels in the presence of credit rationing. For field crops, where a biological lag between input application and harvest necessitates seasonal credit for those lacking the financial savings to buy inputs on their own, output market monopsony may

be a first best solution to the problem of access to yield-and-quality-improving inputs. Another key theme is the importance of water and soil management. Those farmers who are able to access water through investment in pumps or labor to dig weirs, and who can afford fertilizer and/or use manure/compost get higher yields and quality and can sustain these.

After the BASIS team meeting and field visits, we headed for Njoro and the campus of Egerton University, where the Global Livestock CRSP Pastoral Risk Management project held a team meeting and its second biennial workshop, attended by about 80 people. This was a very productive time of reviewing data coming in from our field surveys, coordinating next steps in the field data collection and analysis, and engaging local leaders, donors, and policymakers in dialogue about the future of pastoral development. We made good progress in fleshing out the work plan for the coming 15 months and in disseminating our preliminary findings to USAID, Kenyan and Ethiopian government officials, NGO collaborators in the region, and Egerton University faculty, staff and students.

In Nairobi, I had very productive meetings with Steve Staal, Robert Kaitho, Michael Waithaka and Tom Randolph at the International Livestock Research Institute. Staal will send me the intensive crop-livestock data set from peri-urban Kenyan dairy farmers for Amare Teklu to use in his dissertation. We should write up a USAID Linkage Grant together with Steve and ILRI's Smallholder Dairy Project to fund Amare's time in Nairobi May-July 2002. Waithaka and Kaitho are KARI scientists seconded to ILRI right now working on bioeconomic modeling projects that relate to our BASIS effort. Waithaka's Eco-Regional modeling project (in collaboration with Jetse Stoorvogel at Wageningen) has a common site in Vihiga with our effort, so we need to ensure close collaboration so as not to duplicate efforts unnecessarily or overtax field staff. Randolph maintains an interest in collaborating with the GL CRSP PARIMA project should we develop an animal disease control component, perhaps in the context of new marketing work.

Meetings with USAID/Kenya officials Meg Brown (Ag/Private sector), Julius K., and Calum McLean (Pastoralism) went very well. I briefed them on the motivation behind the BASIS CRSP and GL CRSP projects and fielded their questions on the policy implications of our efforts. Much of the conversation revolved around the importance of designing and implementing an effective outreach strategy at two levels – Washington (USAID, World Bank, NGOs) and in-country (USAID, Parliament, KARI, Districts, MoALD, NGOs, WFP, DFID, other donors, etc.). They strongly recommended we build on our linkages with Tegemeo as they have been collecting detailed household-level data on food security and poverty monitoring and have become reasonably good at communicating policy findings to the domestic policy establishment in Kenya. Greg Gottlieb, presently head of OFDA/Kenya, will be moving to Washington this summer to assume a senior leadership position within the Agency. Meg and Julius strongly urged me to get in touch with Gottlieb and brief him on our work as he will likely be a strong ally for poverty dynamics and safety nets work in the Greater Horn and Madagascar.

Dr. Willis Olouch-Kosura, chair of the Department of Agricultural Economics at the

University of Nairobi, met with me for an hour, then hosted me for a brief workshop and lunch with five faculty and the nine MS students currently enrolled in their program. They are keen to establish training and research linkages with Cornell, and are quite interested in the distance delivery of graduate education efforts the AAEA are launching.

I had a productive meeting with Ms. Wanjiku Kiragu at the Rockefeller Foundation to discuss logistical details related to incoming Rockefeller-funded students at Cornell. She is a very meticulous collaborator and a great asset. Dan Maxwell of CARE and I met to discuss uses of food aid in the region, and possibilities for getting a Cornell student hooked up with CARE for dissertation research on livelihoods monitoring and poverty dynamics. We hope to develop some collaborative research on this topic over the remainder of the year.

My last meeting of the trip was with Dr. Romano Kiome, Director of KARI, and Dr. Festus Murithi, Assistant Director for Socioeconomics of KARI, the PI for the KARI subcontract with Cornell under the BASIS CRSP. Dr. Kiome is very supportive of our collaboration. We discussed the draft MOA between Cornell, ICRAF and KARI and Dr. Kiome agreed to the language of the MOA and to take personal responsibility for it, delegating operational authority over the KARI-Cornell collaboration to Dr. Murithi.

Appendix 1

BASIS CRSP Meeting, June 18-20, 2001, Kerugoya, Kenya

Agenda

Monday, June 18

	<u>Facilitator</u>
PM Team members arrive in Kerugoya	
8:00 PIs' discussion of administrative issues: MOUs, subcontracting, reporting, travel, etc. (Barrett, McPeak, Minten, Murithi, Place and Rasambainarivo)	Chris Barrett

Tuesday, June 19

8:30 Welcome from KARI-Embu Director	Samuel Gachanja
8:35 Personnel Introductions	Group
8:45 Introduction to BASIS CRSP and our project	Chris Barrett
9:00 Open discussion of project objectives with respect to research, outreach and training	Chris Barrett
10:30 Tea break	
11:00 Discussion of Outreach and Communications Strategy	Festus Murithi
12:30 Lunch	
1:30 Research design: discussion of existing data by site, identification of variables needed, discussion of survey methods	Ben Okumu
3:00 Tea Break	
3:30 Research design: discussion of empirical estimation and simulation modeling methods, with a demonstration of concept	Ben Okumu
5:30 Discussion of Training Opportunities	Alice Pell
6:00 Close of day's program	
7:30 Group Dinner	

Wednesday, June 20

8:30 Review of previous day's discussion of objectives and methods	Frank Place
10:30 Tea Break	
11:00 Discussion of draft year one work plan	Jhon Rasambainarivo
1:00 Lunch	
2:15 Discussion of complementary research efforts: what topics or partners should we be adding?	Larry Blume
3:45 Close of general meeting and tea break	
4:15 Discussion of administrative and budgetary issues: MOUs, subcontracting, reporting, travel, etc. (McPeak, Minten, Murithi, Place and Rasambainarivo)	Chris Barrett
PM Visitors not going on field trip return to Nairobi	

Thursday, June 21

AM Embu field site visit, group meeting with farmers James Ouma
PM Subgroup travels to Baringo field site
Overnight at Lake Baringo Lodge

Friday, June 22

All day Visit Baringo field site (Ngambo) John McPeak
Clement Lenachuru

Saturday, June 23

AM Team members return to Nairobi or Njoro

Participants List

	Name	Profession/Position	Organisation	Address
1	Chris Barrett	Associate Professor	Cornell University	315 Warren Hall Dept. of Applied Economics & Management Ithaca NY 14853-7801 USA Tel: +607-255-4489 Fax: +607-255-9984 Email: cbb2@cornell.edu
2	Frank Place	Economist	ICRAF - Nairobi	P. O. Box 30677 Nairobi Tel: +254-2-524000 Fax: +254-2-524001 Email: f.place@cgiar.org
3	Festus Murithi	Agricultural Economist	KARI - Nairobi	P. O. Box 57811 Nairobi Tel: 254-2-583301-20 Fax: 254-2-583342 Email: Fmmurithi@Kari.org
4	Bart Minten	Economist	Cornell University CFNPP	ILO Project BP 6313 ANTANANARIVO 101 Madagascar Tel: 033-11-38520 Fax (261-20) 2222198 Email: Bminten@dts.mg
5	Samuel P. Gachanja	Centre Director KARI Embu	KARI – Embu	P. O. Box 27 Embu Tel: 254-161-20116/873 Fax: 254-161-30064 Email: Icraf-embu@cgiar.org
6	Randrianarisoa Jean Claude	Agricultural Economist	FOFIFA	BP 6313 Tsimbazaza – FOFIFA/ILO Project Antananarivo 101 Madagascar Tel: (261-33) 11-47091 Email: Randrianarisoa@yahoo.com

	Name	Profession/Position	Organisation	Address
7	Alice Pell	Professor	Cornell University	Morrison Hall Dept. of Animal Science Ithaca NY 14853 USA Tel: 607-255-2876 Fax: 607-255-9829 Email: ap19@cornell.edu
8	Francis Kihanda	Agronomist/Soil Scientist	KARI – Embu	P. O. Box 27 Embu Tel: 254-161-20116/873 Fax: 254-161-30064 Email: Icraf-embu@cgiar.org
9	John McPeak	Researcher	GL-CRSP	P. O. Box 300 Marsabit Tel: 0183-2076 Email: J.Mcpeak@cgiar.org
10	George Karanja	Senior Agronomist	KARI – Embu	P. O. Box 27 Embu Tel: 254-161-20116/873 Fax: 254-161-30064 Email: Icraf-embu@cgiar.org
11	Jessica Ndubi	Socio-Economist	KARI – Embu	P. O. Box 27 Embu Tel: 254-161-20116/873 Fax: 254-161-30064 Email: Icraf-embu@cgiar.org
12	Wellington M. Mulinge	Agricultural Economist	KARI – Marsabit	P. O. Box 147 Marsabit (O) P. O Box 2300 Machakos (H) Marsabit Email: wmulinge@Kari.org / wmulinge@cgiar.org
13	David M. Mbugua	Research Scientist	KARI/Cornell	P. O. Box 50558 Nairobi Tel: 0733-718317 Email: dmm52@cornell.edu

	Name	Profession/Position	Organisation	Address
14	Justine Wangila	Associate Economist	ICRAF – Nairobi	P. O. Box 30677 Nairobi Tel: 254-2-524000 Fax: 254-2-524001 Email: j.wangila@cgiar.org
15	Collins Obonyo Otieno	Agricultural Economist	KEFRI – Maseno	P. O. Box 25199 Kisumu Tel: 254-35-51164 Fax: 254-35-51592 Email: kefrimas@africaonline.co.ke afresmaseno@africaonline.co.ke
18	Jabez C. Buigutt	Agronomist	KARI - Perkerra	P. O. Box 32 Marigat Tel: 254-328-51259 Fax: 254-328-51257
19	Ben N. Okumu	Agricultural Economist	Cornell University	444 Warren Hall Ithaca NY 14850 USA Tel: 607-257-3516 Fax: 607-255-9984 Email: bno2@cornell.edu
20	Lawrence Blume	Professor of Economics	Cornell University	Dept. of Economics Uris Hall Ithaca NY 14853 USA Tel: 607-255-9530 Fax: 607-255-2818 Email: LB19@cornell.edu
21	Jhon H. Rasambainarivo	Head of Dairy Research Programme	FOFIFA	BP 4 Antananarivo 101 Madagascar Tel: (26120) 22 40578 Mob. (261) 320714278 Email: jrasamb@syfed.refer.mg
22	Sallyannie Muhoro	Administrative Assistant	ICRAF - Embu	P. O. Box 27 Embu Tel: 254-161-20116/873 Fax: 254-161-30064 Email: Icraf-embu@cgiar.org

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Posted 17 May 2002

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