

# **BASIS CRSP Trip Report 2003-2004**

**Heidi Hogset**

**Ph.D. Candidate, Department of Applied Economics and Management**

**Duration of Trip:** August 2<sup>nd</sup>, 2003 to October 15<sup>th</sup>, 2004.

**Study Sites:** Embu District in Eastern Province and Vihiga District in Western Province, both in Kenya.

**Objective of Trip:** The purpose of my trip to Kenya was to conduct two social network studies using members of already sampled households for the BASIS CRSP Project as respondents. These two studies were studies of so-called 'strong' and 'weak' social ties, and their objective was to determine the relationship between social networks and the adoption of improved natural resource management (NRM) technologies among these subsistence farmers.

The first (original) project was designed as a classic 'strong ties' study, wherein these respondents, termed 'primary respondents', were asked to identify members of their social networks, and answer a set of questions about each one of them as well as some questions about themselves. A subsequent 'snowballing' study then used the network contacts of a subset of the primary respondents as its sample, who thus became 'secondary respondents'. The secondary respondents were asked to answer the same set of questions as the primary respondents about themselves and *their* network contacts.

The same subset of primary respondents that was selected for the snowballing was also used in the second study, the 'weak ties experiment', which was developed after I arrived in the field. This experiment was designed to reveal the respondents' ability to mobilize network contacts, strong *and* weak, to help them solve problems, specifically to find the answers to questions whose answers were not common knowledge, yet was publicly available information.

My specific objectives were to (i) gather data to study both strong and weak social ties; (ii) gather data about adoption of improved NRM technologies; (iii) link these data to data about the same households that has already been collected under the BASIS CRSP Project. This will allow me to study complex relationships between social networks, technology adoption, and poverty dynamics.

**Institutional Support:** My work in Kenya was conducted in association with the International Center for Research on Agroforestry (ICRAF) in Nairobi, where Dr. Frank Place was my supervisor, and hosted in the field by Kenya Agricultural Research Institute (KARI) at their regional research center in Embu, and by Kenya Forestry Research Institute (KEFRI) at their center in Maseno, near Vihiga. Both KARI-Embu and KEFRI-Maseno generously allowed me to use their conference rooms for weekly group meetings with my field assistants. I was also given some assistance when hiring these assistants.

**Account of Work Progress:**

- Logistics

The first problems that had to be addressed after my arrival in Kenya in early August, 2003, were to find suitable accommodations and a reliable and practical vehicle. Due to a lack of office space at the institutions I collaborated with locally, my accommodations also needed to serve as my office, which had implications for what kind of facilities that were acceptable. In both of my research sites, there was another female Cornell student, who was doing research over roughly the same period of time as myself. Before leaving Cornell in June/July the three of us decided that we wanted to find accommodations to share, for both social and practical reasons.

Before leaving Cornell, I was offered a KARI house in Embu, but when I arrived I quickly realized that this house had some problems, the most serious being a lack of security. But I also realized that the KARI Guesthouse, which KARI mainly uses to accommodate short-term visitors at a high price, is actually idle most of the time, so I thought it should be possible to negotiate a favorable rate for guests like my fellow Cornellian and myself, who were staying for several months. After my prospective housemate arrived, a couple of weeks after I did, we got assistance from ICRAF to negotiate such a solution. This was a good solution for us, because whenever there was a problem with the supply of water or electricity (these services are very unreliable in Embu), we had somebody to turn to for help. We were not alone against the local public services. The place also had a housekeeper and a security guard, so security was quite good. But we still had a lot of frustrations with the conditions at the guesthouse. It proved difficult to get sufficient lighting for the sitting room, where we needed to work in the evenings. And the unreliability of water and electricity supplies caused us a lot of inconvenience.

In Vihiga, I rented an apartment in an apartment complex together with the fellow Cornellian there, who was a Kenyan whose home was not very far away from there. She was actually able to furnish the place with her own furniture from home, so there was no need for costly investments in our living quarters for our stay there.

Shortly after my arrival in Embu, the housekeeper at the KARI Guesthouse, Rose, introduced me to a friend/relative who had a car for sale, and this spurred some unstructured investigation of the vehicle market. A vehicle was needed to bring myself and my field assistants to and between the persons we were visiting for the study. This vehicle needed to be able to drive on badly eroded dirt roads that get very muddy in the rainy season, so the general consensus was that it needs to be a 4WD, and very high underneath. The car I was offered met these requirements and it appeared to be known to be reliable, as several key contact persons at KARI knew both the seller and the car. The seller had been using the car in his work as a veterinary officer, mainly providing artificial insemination to farmers in the exact same areas as those where my respondents in Embu lived. The station manager at KARI-Embu helped me get the car checked by a mechanic, and the only problems that were revealed were that some minor things needed servicing. So I decided to go ahead with a purchase, although some well-meaning persons

around recommended that I go to the used car auction in Nairobi first, before making a decision. But getting to Nairobi wasn't easy, and I felt I had wasted a lot of time asking around, without learning about any cars that seemed more interesting than the one I had already been offered.

I signed a purchase contract on August 22<sup>nd</sup>, and the same day I started the process of getting wire transfers from my banks in the US and Norway, to pay the purchase price. The first challenge was to get in touch with these overseas banks, which is not easy in an environment where there is poor telecommunication coverage. While we were waiting for the transfers to go through, the seller kept the car, so I remained dependent on borrowing vehicles from KARI to get around, which is difficult and often fails due to their lack of available vehicles. It took over two weeks before the money arrived in Embu, and in the mean time, I lost patience with it all, and persuaded the seller to let me take the car for a trip to Nairobi on September 5<sup>th</sup> to 7<sup>th</sup>, because I needed to visit the ICRAF Headquarters, and also do some shopping. This trip became my first really serious road test with the car, and it proved to be a test it failed. I took my housemate and her field assistant, Daniel, with me, and Daniel's background as a car mechanic proved to be priceless when a whole host of things went wrong. On the return trip, a poorly attached propeller broke loose and was shot into the gear box, which broke to pieces, spewing metal debris all over the road. After that, the car didn't move for several weeks. The car turned out to be in need of a lot of maintenance initially, but after two-three months of frequent visits with car mechanics, it started behaving quite well. I was clearly cheated when I made the purchase, but eventually, the car served me well, and I don't know what I would have done without it.

- Preparations, Networking and Presentations

Before fielding my questionnaire, I wanted to do two things; 1) discuss with assumed knowledgeable people what were the locally relevant technologies whose adoption I would study, and 2) pre-test the questionnaire on an out-of-sample set of individuals. The people I approached under the assumption they would qualify as 'knowledgeable' were extension officers, who I expected would be the right ones to ask about technologies that involve lumpy investments with a long gestation time, and village elders and chiefs, who I expected could inform me about farm practices that were known to be sources of conflicts between neighbors. Assisted by Madrine, who was one of the BASIS/CRSP enumerators, I visited extension officers in the divisions Manyatta and Nembure in the week of August 18<sup>th</sup>. The extension officer I met in Manyatta, Nancy, then arranged for me to meet a group of village elders and chiefs in the extension unit Kavutiri the next week.

The extension officer I met in Nembure, Muriithi, told me about tumbukiza, which is a technique for deep incorporation of large quantities of organic fertilizer into the soil for long-term soil fertility improvement. He also took me to a farm where I could see how it worked in practice. In Nancy's extension unit terracing was more relevant than in Muriithi's, and she told me about a case where a terracing project had ground to a halt because there was not enough capital to go around to everybody, just like I proposed in my paper about lumpy technologies. Based on my talks with Muriithi and Nancy, I included terracing and tumbukiza as two important technologies whose adoption I wanted

to study. In addition to those, I also included questions about improved fallowing and application of organic fertilizers in the questionnaire.

The meeting with the village elders brought up several interesting problems. Apparently, in Kavutiri trees at or near boundaries are an important source of conflicts between neighbors, which is interesting seen in light of the campaigns to make people plant more trees and practice agroforestry. Trees may have roots that influence plant growth on neighbors' farms, and they also shade neighbors' farmland, suppressing plant growth. I included questions about trees at or near boundaries in my questionnaire as a direct result of this meeting. Another source of conflicts is the weed coach grass, which invades neighboring farms from neglected farmland. Participants at the meeting reported that some farmers were known to trespass on neighbors' farms to spray against this weed. This observation is a very interesting confirmation of the idea behind the model I developed for the paper on technological externalities. When I included questions about obnoxious weeds in my questionnaire, I had *striga* in mind, but coach grass also qualifies. *Striga* is not an important problem in Embu, but it is in Vihiga.

Since none of the BASIS/CRSP sample households were located in Nembure, I asked Muriithi to help me find volunteers in his extension unit to participate in pre-testing of the questionnaire. These volunteers were recruited from two women's groups (both functioning as merry-go-rounds) and one farmers' self-help group, where I hoped to find some male volunteers. I got five volunteers from each group, but only got a total of two male volunteers, and I ended up being unable to interview either of them, due to vehicle problems that made me unable to reach my appointments with them.

The pre-testing quickly revealed that the questionnaire was too long, although the time consumption of these interviews could also be partly attributed to a field assistant who was not yet familiar with the questionnaire, and therefore needed a long time to translate the questions, including time to discuss the interpretation of questions with me. Initially I had intended to have the questionnaire translated to Kiembu before taking it to the field, and I spent a day with one of the BASIS CRSP enumerators, Daniel, trying to start the work. But he got very frustrated with the task, and ended up saying nobody uses Kiembu for writing, so he didn't feel comfortable with writing it. He said the vernacular is only used in school up to "Form 3", whatever that is, and then no more. So, most people do not feel comfortable with using the vernacular for writing. But he insisted translating a text directly from English to Kiembu during interviews works just fine. That is what the enumerators are used to. I decided to let translation wait, at least until after the pre-testing. The final outcome was that translation was not done due to resistance from my field assistants.

I made it a goal that the final questionnaire should have a format that allowed all but a few interviews to be finished in less than two hours. I succeeded to do that with a substantial trimming of the original questionnaire. I even managed to squeeze in a little section on merry-go-rounds without violating this requirement. This I did because I realized that they were an important source of finance for these people.

Before starting data collection proper, I wanted to make sure the sample farmers were informed about my project, so they would expect me, and have some idea about what I was coming for. Fortunately, ICRAF held meetings for both the intensively studied subset of farmers, and for the whole group of 115 farmers, during my first six weeks in Embu. This gave me an excellent opportunity to meet them all and present my research. The first meeting was for the subset, and was held on August 25<sup>th</sup>, where two fellow Cornell students also presented their research.

The center director at KARI-Embu, Mr. Gethi, announced after my arrival in Embu that when a group of students arrive at the station to do research, the way my group of Cornell students had done, he expects them to present their research to their colleagues at the station before commencing the work, in order to let them have a sense of co-ownership of the projects. Therefore, the three of us held a seminar at the KARI station on September 1<sup>st</sup>, where two representatives from ICRAF were also present. We all felt our projects got a positive reception during this meeting, and the meeting contributed positively to our networking within the station.

- Getting Started in the Field

Due to the problems I had with getting a vehicle for the field work, I was long hesitant to hire my first field assistant, but I started to work on and off with Daniel during the first weeks, anticipating that I would eventually hire him properly. James Ouma, ICRAF's contact person for the BASIS CRSP project at KARI-Embu, recommended him strongly, because he was both very familiar with the sample households, and equally important, he could drive. It was my plan all along to include a driver in the team, so I would be free to send my assistants off on their own, and stay behind at home to enter data. But when I was ready to get started, it became clear that our supervisors at ICRAF had decided Daniel was the right assistant for my house mate, not me.

Then, during a meeting at the KARI station on August 26<sup>th</sup>, it was revealed that James Muthomi, who had been involved with entering BASIS CRSP data, but not participated in data collection, actually had a driver's license. Therefore, it was decided that I had my man, and Daniel was hired as somebody else's assistant. Nobody thought of checking anybody's competence, I just hired James by default, assuming a driver's license means the guy can drive. (There were so many James'es at KARI-Embu that we numbered them - this one was James II and Ouma was James I). Later, when I got a car he could drive, I discovered that in Kenya a driver's license does not necessarily mean you can drive. I had to spend some time giving my driver driving instructions, and I worried a bit about what his driving was doing to my car's already battered clutch and gear, but he eventually did learn to drive.

I only needed one assistant for doing the pre-testing, but after pre-testing was finished, I hired a second James, James Njeru, i.e. James III, to complete my team. This James had worked alongside Daniel collecting the BASIS CRSP data, so he was also very familiar with the sample households, which enabled us to find them without difficulty, saving us a lot of time not wasted on getting lost on the labyrinthine side roads of Manyatta.

We started data collection on September 23<sup>rd</sup>. We made appointments with everybody at least one day in advance, which had apparently not been common in earlier rounds of data collection with these households. But when they had an appointment, the respondents were mentally prepared for our visit, and motivated for the interview. We did not have any problems with respondents getting impatient with the interview, and in general, we were given a generous reception everywhere, being treated as appreciated and very welcome guests.

- Finishing the first round in Embu

Once the field assistants had been trained, and the team got into the routine of making appointments for interviews, and visit and interview the respondents, we all became focused on getting the work done. Over the course of about 8 weeks, we interviewed 114 respondents, representing 104 households, belonging to the BASIS/CRSP sample. Data collection started on Tuesday, September 23<sup>rd</sup>, and finished on Thursday, November 20<sup>th</sup>. We selected 10 households where two household members were interviewed, usually both husband and wife, but on one occasion it was a mother and her daughter. There were 11 households where we did not succeed in getting any interviews. Six of these households were explicitly unwilling to be interviewed, while in four households nobody was available for interview during the period when data collection was going on. One of those was a woman working as a casual agricultural laborer, who was absent from her home during daytime on all week-days, so we never succeeded in making an appointment with her. This lady would probably only have been willing to stay at home to meet one of my field assistants if she had been compensated for the loss of one day's income to do the interview. There was also a household that had left the area, so it had to be dropped from the sample.

- Preparing the Strong Ties Study in Vihiga

I moved from Embu to Vihiga using my not so reliable own vehicle during the last week-end of November, luckily without experiencing any calamities on the way. So on Monday, December 1<sup>st</sup>, I was ready to hit the ground in Western Kenya. During December, I was assisted by Wesley, who helped organize meetings for me with representatives of the extension service, and later with village elders in the villages where the sample households are located.

On Thursday, December 4<sup>th</sup> and Friday, December 5<sup>th</sup>, I met extension officers from the extension office for Vihiga in Majengo, and went with them to look at soil- and water conservation and soil fertility management technologies that are practiced or being promoted in this area. During farm visits together with this group, I encountered for the first time a technique called push-and-pull, which helps control the weed *Striga*. Unfortunately, the extension service in Vihiga is seriously understaffed, so they are only able to work in selected focus areas, and Madzuu has not been selected for decades, so the techniques promoted by the extension service tend to be totally unknown there, and push-and-pull is an example in point. Thus, it was useless to include this technique among the technologies asked about in my questionnaire. Farmers in Vihiga are generally also unfamiliar with the technique *tumbukiza*, which many farmers in Embu practice, but

“double digging”, which is a similar technique, is known if not widely adopted. I therefore kept my questions about technology adoption largely unchanged between Embu and Vihiga, making only minor adjustments to include terms Vihiga farmers were expected to be more familiar with.

On Monday, December 8<sup>th</sup>, I met a group of village elders to discuss sources of conflicts between neighbors associated with farm practices that they had experienced in their role as elders. We had a long and productive discussion, but it did not reveal any particular differences between Embu and Vihiga that warranted any changes in the questions included in my questionnaire.

Later this week, I met with candidates to hire as field assistants, and since Wesley had asked as many as five to come, in addition to himself, I decided to hire them all, to see if having a larger team would enable me to finish my work faster, and to gain some experience with what it is like to work with a larger team. Two of the five were given in advance, since they had been identified as possessing a driver’s license (Chrispin), and knowing where the sample households are located (Japheth). Training in making appointments, getting confirmation of the respondent’s informed consent, and conducting the interviews in the vernacular, *Luyia*, was done on Monday, December 15<sup>th</sup> and Tuesday, December 16<sup>th</sup>. On the 17<sup>th</sup>, the whole team was let loose on members of two women’s groups in the village Ebukanga, to do a dress rehearsal of the interviews.

These women’s groups were groups I got in touch with during my pre-dissertation field visit in May-June 2002, that I met while I was visiting Western Kenya together with a Kenyan fellow Cornell student, and they expressed an eager interest in participating in my research already before my arrival to commence my data collection. Their village, Ebukanga, lies some 20 kilometers away from where the sample households in Vihiga are located, so the group members are obviously not members of sample households.

- Data Collection for the Strong Ties Study in Vihiga

After finishing training the team, I gave my newly hired assistants leave for Christmas vacation, and left Kenya to visit my family for a couple of weeks. The first round of data collection in Vihiga, interviewing primary respondents, commenced on January 12<sup>th</sup>, and finished on February 9<sup>th</sup>, employing 5-6 enumerators 5-6 days per week for about 4 weeks. This did not include data entry, which I did myself, and which I finished a couple of weeks after data collection ended. The work went surprisingly smoothly, despite using a much larger group of enumerators than I did in Embu. I found that using a larger team was more transportation efficient and therefore more cost efficient, reducing average costs of data collection per completed questionnaire considerably (about \$8.50 per questionnaire in Vihiga vs. about \$12.70 in Embu, not including the cost of fuel for my own vehicle).

The only real frustration I encountered during data collection in Vihiga, was that the enumerators seemed to be brainwashed into a particular way of conceptualizing the unit of analysis; I had a hard time getting them to understand the difference between a household, a household head, and a respondent. Since I had not anticipated this, I had not

included a box for the name of the household head on my questionnaire, and enumerators repeatedly wrote the name of the household head in the box for the name of the respondent, even when those were different individuals. In some cases we had to revisit the respondents to learn *their* names, as opposed to the names of their household heads.

Before starting Round II, the snowballing exercise (interviewing secondary respondents), I needed to do some preliminary data manipulation and analysis. In this process, I selected a subset of the original sample, and generated lists with the names of all network members identified by the primary respondents in the subset, with the distances between the homes of the primary and the secondary respondents. This enabled the enumerators to track down and interview the network members, i.e. the secondary respondents. I selected the village Kitulu in Vihiga and the extension unit Manyatta in Embu for the snowballing exercise. Field work for Round II commenced on March 1<sup>st</sup>, and finished in Vihiga on April 16<sup>th</sup>, having employed 3-6 enumerators 5-6 days per week, for about 6 weeks. When I started Round II in Vihiga, 3 of the enumerators I used during Round I were unavailable due to other projects, including the Cognitive Mapping Survey, which I will return to below. But since this work involved activities the team and myself had no prior experience with, I thought it was a good idea to start slowly with a smaller team, and gain some experience before hiring the whole team and start data collection in earnest. This allowed me to modify my procedures in response to problems encountered in the field.

In Vihiga, 129 primary respondents were interviewed in the first round of data collection, while 128 secondary respondents were interviewed in Round II. These secondary respondents had been generated by a subset consisting of 26 primary respondents.

- Other NSF-related work; the Cognitive Mapping Survey

Before leaving Embu, I was asked to assist the NSF team in developing a questionnaire for the cognitive mapping section of the NSF project, in collaboration with one of my fellow Cornell students. We met in Embu during the last week of November, 2003 to get started on this work, and one of our supervisors from ICRAF joined in, too, in between working in the field in Embu. We managed to put together a draft questionnaire to circulate among team members before I left for Western Kenya at the end of this week.

When I returned from Winter Break in January, I first spent a few days in Embu at a workshop for the Cognitive Mapping research team, developing a questionnaire for this study. Later, I was given some administrative responsibility for fielding this questionnaire in Vihiga. Data collection for this study commenced on February 16<sup>th</sup>, and finished on March 13<sup>th</sup>, employing 2 enumerators for 4 6-day weeks. Before data collection commenced, the sample households were given a 2-kg bag of hybrid maize seeds as a token of our appreciation for their participation in the study. Before this, we had experienced some unwillingness to participate among the sample households, but during data collection for the Cognitive Mapping Survey, no respondents in Vihiga refused to cooperate.



- Finishing the Strong Ties Study in Embu

During my last three months of field work, between May and July, my work was very focused, with at most three teams in the field simultaneously, when we were collecting data for the weak ties in Vihiga, and both weak and strong ties in Embu. The second round of data collection for the strong ties study in Embu started on May 10<sup>th</sup>, when I started training a newly hired team of field assistants, with data collection starting in earnest one week later. Data collection ended on July 16<sup>th</sup>, and after this the team met several times again, to go over name lists trying to detect duplicate ID codes, i.e., persons who had been assigned multiple codes because the enumerators had not realized it was the same person. This proved to be tedious and time-consuming work. The same kind of follow-up was conducted in Vihiga, but less vigorously than in Embu.

A total of 145 secondary respondents were interviewed during the second round in Embu. These had been generated by a subset of 31 primary respondents. The 176 people who participated in the snowballing exercise in Embu generated a total of 724 names, while the 154 people who participated in the snowballing in Vihiga generated 743 names. It is possible there are more undetected duplicates hidden among the names generated by the participants in Vihiga than in Embu, since the search for duplicates was conducted less vigorously there.

- Implementing the Weak Ties Experiment in Both Sites

I used the same sample for the weak ties experiment as I had used for the snowballing, i.e. the second-order network study. In Vihiga this included 26 primary respondents, and 23 of these ended up participating in the weak ties experiment. In Embu this subset consisted of 31 primary respondents, but in addition to these a spouse was included in the sample because of irregularities with the original interview, while nobody dropped out, so there were 32 people who ended up participating in the weak ties experiment here. (In the irregular case, during the original interview both spouses had participated, so that the interview could not be said to be exclusively with either one of them). The experiment was designed such that each participant was visited four times, over the course of four weeks. In Vihiga the participants were visited the first time during the week starting June 14<sup>th</sup>, in Embu the initial visits were conducted one week later.

In this experiment, the participants were asked to find the answers to a set of questions I assumed they would not immediately know the answers to, but whose answers were publicly available information. Thus, with some effort, they should be able to find the answers. In order to give them some incentive to put effort into finding these answers, the participants were promised a cash reward for each correct answer submitted, but rewards decreased week by week, so that answers were most 'valuable' the first week. As a result, the participants in Embu were paid an average reward that amounted to KES 531 (about USD 6.72), while in Vihiga the average reward paid to the participants was KES 447 (USD 5.66).

- Presentations Made While in the Field

When I was about to finish my work in the field, I offered my hosts, KARI and KEFRI to present my preliminary results to both staff members at the research stations and to farmers at farmers' workshops in both study sites. Following this initiative, I presented my research to the staff at KEFRI-Maseno on July 12<sup>th</sup>, but there were no scheduled farmers' meetings in Vihiga where I could present my work, so that never happened. In Embu I was luckier, there I was able to present some preliminary statistics of data collected there at a series of farmers' workshops held in Manyatta Division during July 6<sup>th</sup> - 8<sup>th</sup>. The farmers who attended these workshops were not accustomed to getting this kind of feedback, and expressed great satisfaction with my presentation.

- Data Entry and Analysis

Most of the data from my own ("strong ties") questionnaire was of a nature that I believed would be very difficult to teach hired enumerators to enter, so I did all data entry myself. I tried to do this immediately after the questionnaires were completed by the enumerators, but for Round II in Vihiga I fell behind schedule with data entry because of frequent power failures, plus a one-week absence to participate in the BASIS CRSP Project Team Meeting in Nyeri, March 15<sup>th</sup>-16<sup>th</sup>. However, I managed to catch up, so all data entry for Vihiga was completed before I returned to Embu in early May.

I conducted some preliminary analysis of the non-network data collected from primary respondents in both Embu and Vihiga for this meeting, but I let analysis of network data wait until I had finished data cleaning, since transforming the spreadsheets with the network data into a format that is readable for the network analysis software was tedious and time-consuming, so doing this on uncleaned data was premature. Only a very superficial analysis of my data was done in March, but striking differences between my sites were already apparent. The primary respondents in Embu had reported much denser social networks than the ones in Vihiga. Adoption rates of improved natural resource management practices also differed.

My stay in Kenya was initially planned to last twelve months, ending around August 1<sup>st</sup>, 2004, but was extended by two months when I was hired as a temporary consultant by the World Bank's office in Nairobi between mid-August and mid-October, 2004. I spent most of these two months cleaning the strong ties data and preparing it for importation by the statistical and network analysis software I will use, so now I am ready to start data analysis in earnest. I started some early exploration of the data already while in Nairobi, and have conducted some basic descriptive statistics.

- Logistical/Administrative Problems Encountered and Solutions

After a hard start during my first few months in Embu, I got both logistics and administrative problems under control. The only unexpected problem I encountered during the last couple of months in Vihiga was caused by computer problems at my bank in Ithaca, which made them block my debit card from being used outside of the U.S. (My fellow Cornellians in Kenya shared the same problem). For several weeks I was unable to

get any cash from the ATMs around here, and I ended up having to borrow money from ICRAF-Kisumu to be able to travel to the BASIS-CRSP Team Meeting in Nyeri. This problem was eventually solved, but all we could do about it in Kenya was to wait it out.

During my second period in Embu, a misunderstanding at the KARI station threatened for a few days to become a major financial problem, as I was presented with a requirement to pay an amount I had not budgeted for, to cover services the director there erroneously *thought* the station provided. Fortunately, this misunderstanding was quickly resolved by Dr. Festus Mureithi, at the KARI headquarters.

In addition to this, I also missed a reminder from the committee on human subjects that my research approval for using human subjects was expiring, so I had to cancel my work for a few days as a renewal application was processed. This appears to have happened because I expected I would be reminded about the deadline to renew my approval by Email, while it turned out that my Email account ceased to function properly as the company I had an account with migrated to a new server. I only realized this too late to avoid problems with getting a timely renewal of my research approval.

**Summary:** The first round of fieldwork was conducted in Embu between the months of September and November, 2003, and in Vihiga in January and February, 2004. This round of data collection included interviews with all primary respondents for the strong ties study. The questionnaire was initially pre-tested in Embu in August and September, after some polishing based on discussions with representatives of the extension service and meetings with village elders. Such meetings were also conducted in Vihiga before actual data collection commenced there. Within the same time frame, in January and February, 2004, I was also involved in developing the questionnaire about farmers' perception of their soils' fertility, termed the 'cognitive mapping' study, and then supervising the fielding of this questionnaire in Vihiga. This latter study was not part of my own research, but belonged to the larger study this research is nested within.

The second round of fieldwork was conducted in Vihiga in March and April, and in Embu between May and July, 2004. This round included interviews with all secondary respondents for the strong ties study and developing the weak ties experiment. The weak ties experiment was pre-tested simultaneously in Embu and Vihiga in May and June, and implemented in June and July.

I did all data entry myself, with the exception of the weak ties experiment data from Embu, which was entered by a hired assistant. Data entry was conducted concurrently with data collection, but suffered several interruptions due to unreliable power supply in both study sites, and because my time was divided between this and other tasks. However, all data was entered before I left Embu towards the end of July, 2004.

My stay in Kenya was initially planned to end there, but was extended by two months when I was hired as a temporary consultant by the World Bank's office in Nairobi. During these two months, I cleaned the strong ties data and prepared it for importation by the statistical and network analysis software I will use. I also started some early exploration of the data, and conducted some descriptive statistics.

The exploratory data analysis conducted so far suggests that the dynamics of both social networks and technology adoption differ between the two sites. Social networks appear to be denser and more active in Embu than in Vihiga, reflecting deeper poverty and higher rates of labor emigration in Vihiga. Farmers in Vihiga are more land constrained than those in Embu, resulting in lower adoption rates for improved fallows than in Embu, and when farmers in Vihiga practice fallowing they do so for other reasons than those in Embu. Farmers in Embu also have better access to extension services, resulting in better information about, and higher adoption rates for new technological innovations.

The trip has been productive. In addition to conducting field work for my own Ph.D. dissertation research, I have gained experience with working in rural areas in a developing country, with all the day-to-day challenges that entails. I have also established useful collegial contacts within several institutions involved in economic development research and assistance, notably in indigenous institutions like KARI and KEFRI as well as international ones like ICRAF and the World Bank.

My monthly timeline while in Kenya was as follows:

### **2003**

- August: Arriving in Nairobi on August 2<sup>nd</sup>. Arriving in Embu, settling in, hiring assistants, and polishing strong ties questionnaire for Embu.
- September: Pre-testing the strong ties questionnaire and training assistants. Starting data collection for strong ties study.
- October: Data collection and entry, strong ties study.
- November: Finishing first round of data collection and entry in Embu for the strong ties study.
- December: Moving to Vihiga, settling in there, hiring assistants, polishing strong ties questionnaire for Vihiga. Leaving on Christmas vacation with family.

### **2004**

- January: Meeting with research team in Embu before returning to Vihiga. Assisting with cognitive mapping study on behalf of others. Data collection and entry, strong ties study in Vihiga.
- February: Supervising data collection for cognitive mapping study. Data collection and entry, strong ties study.
- March: Supervising data collection for cognitive mapping study. Data collection and entry, strong ties study. Developing site-specific questionnaires for the weak ties study for both sites.

- April: Finish data collection and entry in Vihiga for strong ties study. Finish developing questionnaires for weak ties study.
- May: Moving back to Embu. Starting second round of data collection and entry for strong ties study in Embu. Starting pre-testing questionnaire for weak ties study in both sites.
- June: Data collection and entry, strong ties study. Pre-testing questionnaire for weak ties study. Starting implementation of weak ties experiment in both sites.
- July: Finish data collection and entry for both strong and weak ties studies, the former in Embu, the latter in both sites.
- August: Moving to Nairobi after return from summer vacation with family, settling in, starting data cleaning and preparation.
- September: Data cleaning and preparation.
- October: Conducting exploratory data analysis, present results at staff meetings at World Bank and ICRAF offices in Nairobi. Departing for Ithaca on October 15<sup>th</sup>.