ACTION RESEARCH, KNOWLEDGE & IMPACT

Experiences of the Global Livestock CRSP Pastoral Risk Management Project in the southern Ethiopian rangelands
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Published by the Global Livestock CRSP, March 2010
Publication design by Susan L. Johnson

This publication was made possible through support provided to the Global Livestock Collaborative Research Support Program by the Office of Agriculture, Bureau of Economic Growth, Agriculture and Trade, United States Agency for International Development under terms of Grant No. PCE-G-00-98-00036-00 to the University of California, Davis. The opinions expressed herein are those of the author and do not necessarily reflect the views of USAID.
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ACKNOWLEDGEMENTS

The USAID Mission to Ethiopia is thanked for providing the ancillary funding that supported much of the action research and capacity building referenced in this document. The collaborative efforts of the many research and development partners in Ethiopia and Kenya—too numerous to list here—are also warmly acknowledged. The author wants to specifically recognize some of the key individuals and institutions that helped make this project possible. In particular, Dr. M.W. Demment, GL-CRSP program director is thanked for his long-standing support. Ms. Susan Johnson is acknowledged for her editorial and programmatic assistance. Dr. Joyce Turk of USAID Global Bureau is appreciated for her oversight as Senior Livestock Advisor. Ms. Janet Paz-Castillo, Ms. Darlene Cutshall, Dr. Pedro Carrillo, and others at the USAID Mission to Ethiopia helped forge and maintain critical support linkages that allowed PARIMA to merge applied research with development impact. The leadership of the Oromia Cooperative Promotion Bureau (OCPB), the Oromia Pastoral Area Development Commission (OPaDC), and the Oromia Agricultural Research Institute (OARI) are acknowledged for their fruitful collaborations and assistance. The project would not have succeeded without the determination and skills of Mr. Seyoum Tezera, Dr. Solomon Desta, and Dr. Getachew Gebru of PARIMA. Finally, pastoral community leaders such as Ms. Amino Ali, Ms. Mekaye Aden, Mr. Abduba Halake, Ms. Dokatu Duba, Mr. Hussein Ibrahim, and Mr. Arero Boru, among others, are “development heroines and heroes” and have inspired us all.
The PARIMA project began in 1997 with a mission to conduct research, outreach, and training to improve pastoral risk management in Ethiopia and Kenya. By late 2009 it is clear that the project has achieved positive impact on the lives of many pastoralists on Ethiopia’s Borana Plateau. This document tells this story with an emphasis on the process we used. We call the process an action-research system, which involved researchers, community members, development agents, and other stakeholders in an iterative process of local problem solving. The process was not pre-planned but rather evolved over time. Knowledge of all stakeholders was valued and assembled to gain insights. A variety of tools were employed emphasizing participation, peer-to-peer learning, long-term observation, mentoring and problem solving, and impact assessment. At the start we already knew the traditional system was under intense pressure, as illiteracy, poverty, and hunger were pervasive. Community-based problem diagnosis confirmed the need to increase incomes and diversify livelihoods, but the real challenge was how to do it. Further stakeholder interactions revealed that collective action and micro-finance could be important interventions. As collective-action groups formed we responded to new requests to assist with skill development via capacity-building courses and field tours for members to see other places and people. We also
With 2,300 founding members (76% women) and 13,800 direct beneficiaries, not one of the 59 collective-action groups failed over seven years. The groups accumulated cash savings on the order of US$93,000 from an initial base of zero. Over 5,360 micro-loans were extended with 96% repaid at 10.5% interest. The cumulative loan value was over US $647,600.
helped create new livestock marketing channels and provided long-term monitoring and problem solving concerning group conflict-management. In all of these endeavors many specialized collaborators were needed to help carry out the plan. In the end, the full package of interventions was complementary and robust. Group formation and visits with successful peers helped inspire project participants to envision an alternative and more hopeful future. Livestock marketing and small-business ventures fueled micro-finance, personal confidence, and generated a new base of diversified wealth that has reduced food insecurity and drought vulnerability. Throughout this process we were collecting data. We have evidence that the system worked. We no longer have to guess about what the local people might be capable of. Evidence of impact abounds. One outcome has been the growth and sustainability of the 59 collective-action groups. With 2,300 founding members (76% women) and 13,800 direct beneficiaries, not one group failed over seven years. Over 5,360 micro-loans were extended with a value of US $647,600. Loan repayments included 10.5% interest and 96% of loans were recovered. When group members are compared to peers who never volunteered to join groups, quality of life, incomes, food security, and ability to cope with drought have improved for the former. Since late 2007 groups were gradually merged into government cooperatives. Government has thus become a project supporter and co-owner as PARIMA phased out. In summary, our experience illustrates that an action-oriented research project can make a difference in the marginal lands of the developing world, especially if the focus is demand-driven and builds human capacity. In our case, achieving impact required a new way of organizing and implementing a project, with research and development in full partnership.
INTRODUCTION

The purpose of this document is to illustrate an example of how positive impact was achieved among a population of semi-settled pastoralists in southern Ethiopia in the context of a USAID-sponsored project. This was undertaken by the Pastoral Risk Management (PARIMA) project of the Global Livestock Collaborative Research Support Program (GL-CRSP). The emphasis is to describe the process that was used. While there is some illustration of research findings, a literature list can be used to follow up.

The Setting
Pastoral systems typically occur in arid and semi-arid regions. Traditional pastoralists have used grazing livestock to harvest forage across vast, diverse landscapes and convert forage into milk, meat, fiber, and social assets to fulfill human needs. Traditional pastoralism, however, has been in decline for decades. Pastoral systems in eastern Africa, for example, are threatened by growing human populations, degraded environments, drought, physical insecurity, and reduced herd mobility. Traditional means of dealing with risk have been compromised. Recurrent droughts result in catastrophic losses of livestock, push refugees to settle, and threaten the populace with hunger and poverty traps. Rural infrastructure and
public service delivery is marginal to non-existent. Previous research on pastoralism—going back to the early 1980s—suggested that livelihood diversification and human capital investment could be major options to improve risk management and human welfare (Jahnke, 1982; Coppock, 1994). Opportunities to boost productivity of livestock or crops on rangelands, in contrast, appeared slim.

The PARIMA project was created in 1997 to investigate ways to improve pastoral risk management, and hence human welfare, among pastoralists and agro-pastoralists in southern Ethiopia and northern Kenya. Applied research, outreach, and training were project components. The PARIMA project continued through September 2009 when the GL-CRSP was phased out by USAID.

One of the study areas for PARIMA was the semi-arid Borana Plateau of southern Ethiopia. Over 95,000 km² in size, the Borana Plateau has been regarded as a model of sustainable pastoralism through the 1970s (Coppock, 1994). It is home to over 350,000 people and a livestock population that fluctuates around a million head. The drought of the mid-1980s started to change perceptions that the Borana system was sustainable. There was increasing awareness that a slowly growing human population was beginning to settle down, and this affected traditional resource-use patterns as well as the ability to endure crisis. For example, traditional drought grazing-reserves began to have surplus people residing in them as early as the 1960s because there was nowhere else for them to live. Recurrent and major herd losses since 1985—resulting from interactions among drought, periodically high stocking rates, and gradual degradation of grazing resources—have resulted in hundreds of millions of dollars in losses simply from animal mortality and foregone milk output. Inefficient market access meant that animals would die of starvation rather than be sold in a timely fashion. A growing population would get poorer in terms of per capita animal assets and become more food insecure. Refugees from drought and conflict have since gravitated nearer to towns and settlements and survive via petty trade and food relief. Woody encroachment—related to heavy localized grazing—and pockets of unsustainable maize cultivation—related to an increasing need to
procure food by any means—have increased on the landscape. The Borana Plateau, in sum, is a dynamic example of a pastoral society experiencing social and environmental change. Compared to many pastoral groups studied by this author, the Boran pastoralists have appeared more isolated from the outside world. Illiteracy rates exceed 90% in rural locations. The typical pastoral household seemed highly marginalized and operated in traditional ways, with men overseeing livestock herding and women being in control of the hearth, child rearing, and some aspects of petty trade (Coppock, 1994). In a nutshell, the challenge today is too many people chasing too few resources, with few options to mitigate the situation.

One idea for PARIMA to confront such problems was how to better capture wealth otherwise lost as livestock mortalities during drought. It was thought that introducing micro-finance and a means to diversify livelihoods could provide more options for opportunistic investment in either livestock or non-livestock endeavors, and hence improve the ability for people to cope with a dynamic environment (Desta and Coppock, 2002; 2004).

An Action Orientation
The project component described here was among several for PARIMA in eastern Africa. This one was devoted to participatory problem-solving. Some key findings and outcomes are described in a subsequent section. Thousands of pastoralists have been positively affected by this action-oriented arm of the project. There are six background factors that enhanced our prospects for project success.

First, the PARIMA team was very committed to achieving impact in the pastoral community—they acted as change agents. They could re-orient the project as needed. They understood pastoralism and the Borana Plateau. There was a very high skill level on this team in terms of extension experience and community engagement. They were also nimble learners, able to adapt to new information and changing circumstances. The team doggedly persevered to build bridges among communities and collaborators. Some of the bridge building among collaborators
was difficult and transaction costs were high. An initial challenge, for example, was rectifying the bottom-up philosophy of PARIMA with top-down philosophies of some partner institutions. After months or years of engagement, these barriers eroded and a bottom-up philosophy gained ground. The end result, however, was a project with a high degree of shared ownership among stakeholders.

Second, many local pastoralists were very receptive to change and opportunity, and they have proven remarkably adept at pursuing new ventures despite high rates of illiteracy and other educational challenges. There have also been notable increases in the leadership profiles of women, implying that some gender relations have been recast.

Third, our network of collaborators offered a complementary array of talents and access to resources that helped our small team persevere. African leadership eventually emerged from all collaborative levels—communities, technical partners, development agents, policy makers, and scientists.

Fourth, the timing of the project was fortuitous. In one sense, the Borana pastoral system has resembled a pressure cooker on the boil. Resource pressure results in stress and people begin to seek new ways of coping. In such cases outside facilitation can help uncover problem solutions. In addition to increased local pressure, changes in national and international livestock markets started to occur by 2003 (Desta et al., 2006). Ethiopia had been in a decade-long process of privatizing and modernizing their export-livestock industries. Exports of livestock and livestock products to the Gulf States and elsewhere began to grow. A north-bound value chain for range animals (especially sheep and goats) that extended from northern Kenya to Addis Ababa was becoming a reality. Pastoralists on the Borana Plateau were now seeing a dramatic and welcomed expansion in livestock marketing options.

Fifth, our funding support was consistent and came from several sources. Core funds for initial project planning and applied research
were obtained from the GL-CRSP for 12 consecutive years. This was supplemented by outreach-oriented funding for about seven years from the USAID Mission to Ethiopia. Outreach funds allowed us to make the strategic investments in people and communities to meet demand-driven needs for capacity building. Research funds allowed us to study outcomes of investments to build a base of documentation and scientific knowledge. Had PARIMA only existed for a few years no sustained effort or significant impacts would have occurred.

**Sixth and most important, we created a system of interactive collaboration and action that became the operational core of the project.** This can be referred to as either action research (Greenwood and Levin, 2000) or an innovation system (Hall, 2006; Coppock et al., 2009; Sanginga et al., 2009). Both terms broadly refer to research-oriented, problem-solving approaches that rely on wisdom and talents contributed by project beneficiaries as well as a broader network of stakeholders. We call our approach an *action-research system* for several reasons. We like the prominence of the word “research” in the name, and the term “system” reflects a partnership network. We also contend that “action research” will be better understood by our diverse audience as compared to “innovation system.” *But whatever we call it, it worked!* The approach was not pre-planned. It evolved over time in response to project challenges and opportunities. *We learned together by doing.*

Our experiences are clearly in accordance with the growing use of action-oriented, collaborative methods to help research achieve real-world relevance and impact (Chambers, 1997; Greenwood and Levin, 2000; Ashby, 2003; Sanginga et al., 2009). The connection between research and development impact can be difficult in any context, let alone in the marginal lands of poor countries where project beneficiaries are voiceless, governance is weak and traditions of top-down development dominate. However, researchers can jump start the process by truly wanting development impact to occur and being able and willing to undertake the required transaction costs.
OUR ACTION-RESEARCH SYSTEM

Our action-research system differs from traditional research in many ways. In action research a problem is identified and an overall pathway of problem-solving is charted via interactions with stakeholders. The project then responds to the evolving needs of stakeholders as new challenges are encountered. The pathway can be redirected if problems are encountered that are insurmountable. The process is molded and modified and new capacity of stakeholders is built as required. Stakeholders learn new things together. Researchers do not assume the level of top-down control as they do in traditional research projects. But researchers in an action-research system can coordinate data gathering for project documentation. Stakeholders can assist with research and interpretation of results. In our case, in addition to routine compilation of project-outcome statistics we also sought answers to hypothesis-based questions. To this end we wanted to compare pastoralists who participated in the project versus those peers who did not. This yielded a quasi-experimental format that revealed elements of cause and effect. Such answers can be valuable because they give more evidence-based knowledge for development decision making. Guesswork is reduced. Despite these advantages of an action-research system, the problem solution for one locale may never be perfectly applied to another. Thus it is the commitment for researchers
to use an open-ended, action-research system that is most important. Different and efficient problem solutions will emerge to address problems in different settings if the stakeholders are faithful to the core values of the process. There are many ways that an action-research system can be modified, and this is discussed later.

The Partnership Network
Because the PARIMA project had a small local staff (three!) with limited resources, it was essential that a wide variety of partnerships be formed to address emerging needs. Eventually, the project became a local juggernaut in the use of community participation and coordinating human capacity building. But this was only able to happen because we created a collaborative network. To illustrate, in 2000 the PARIMA team lacked background in participatory methods. We were unqualified to design capacity-building courses. We were unable to fund local interventions. And we lacked connections to explore things like pastoral marketing opportunities. We needed help.

Overall, several dozen formal and informal institutions became our collaborators over the next eight years. Some were in our network continuously while others participated periodically. The roles of collaborators markedly varied. Some were donors, some assisted with research, some assisted with capacity building, some assisted with policy matters, and others implemented development interventions. These included 15 international or regional members and 31 local or district members. They are listed in Coppock et al. (2009). To illustrate the diversity of these relationships, the members included the traditional Borana leadership (Aba Gaada), international and local NGOs, leaders of Kenyan and Ethiopian collective-action groups, a Kenyan university, the USAID Ethiopia Mission, the African Union Inter-African Bureau for Animal Resources (AU-IBAR), national immigration offices, Oromia state research and development agencies, Ethiopian federal marketing entities, and private Ethiopian livestock-export firms.
As the project began peer-to-peer learning activities, volunteers were most often married women with children that lived in sedentary pastoral households.

Our Target Population and Toolbox
Several research and development tools were used to engage pastoral community members. The project began by involving entire communities of pastoralists concerning participatory problem diagnosis. These were mostly Boran communities and included men and women from all wealth strata and various age groups. As the project progressed and moved to a peer-to-peer learning mode along with collective action and related interventions, poorer women increasingly began to dominate our pool of volunteers. Later the proportion of men increased in some circumstances. Representation of other groups, like the Gure (Somali) and Gabra, also grew. In most cases women volunteers were married with children and represented pastoral households that had long been sedentary. Families resided in mud and grass huts in encampments having dozens of households and bush-fenced livestock corrals. These households tended to live within a day's walk to urban areas. Households owned few animals and survived by receiving food relief and generating income by selling charcoal, firewood, and small amounts of milk. Illiteracy was the norm. Many volunteers were refugees displaced by conflict or drought.
We tried to keep our overall approach as transparent and unbiased as possible. Material below is largely a condensation of previously published material from GL-CRSP research briefs and peer-reviewed book chapters. Sources prominently include Coppock et al. (2009), Tezera et al. (2008, 2009, in preparation), and Desta et al. (2006). The tools we relied upon are described in rough chronological order of use.

**Participatory Rural Appraisal (PRA).** PRA is a community problem-solving tool (Lelo et al., 2000). The PRA protocol involves change agents meeting with communities to help them articulate and rank problems and propose sustainable solutions. Our PRAs were initiated in 2000-2001 and took over a week for each of 12 communities. To our knowledge PRAs had not been previously attempted in Ethiopia. Community Action Plans (CAPs) that formalize problem-solving frameworks were developed from each PRA and funded with resources from USAID-Ethiopia. The PARIMA project catalyzed this process by bringing communities, development agents, and donors together. As the word spread, communities across the Borana Plateau requested PARIMA to facilitate PRAs for them as well. The use of an unbiased PRA process is the ideal and it is also vital that CAPs are implemented. Biased PRAs and unimplemented CAPs can be common. Such PRA malpractice can lead to "PRA-burnout" and eroded...
trust between communities and change agents. Our use of PRA, however, avoided these pitfalls.

**Peer-to-Peer Learning.** At about the same time we conducted PRAs we discovered innovative women’s groups—largely Boran—residing in remote settlements in northern Kenya (Coppock et al., 2009). These groups had begun to form in the 1990s and they used grass-roots microfinance and collective action to diversify their livelihoods, create personal wealth, make local investments in schools and community health programs, and improve their abilities to cope with drought. Half of the 16 groups we studied had been formed with assistance from external change agents, while the others formed spontaneously. Founding members were typically illiterate, and men were always excluded from the groups. Collective action is defined by Meinzen-Dick and DiGregorio (2004) as “a voluntary action taken by a group to achieve common interests.” When the groups were formed, officers were elected and by-laws committed to memory. Micro-finance procedures involved establishing local savings and investment clubs. In early 2001 we transported 15 Ethiopian women leaders and a few development agents from across the Borana Plateau for a one-week trip that PARIMA had organized to meet the Kenyans and see their achievements. This had been preceded by field trips made by the author and PARIMA staff to several settlements to verify accomplishments of the Kenyans and confirm their willingness to meet the Ethiopians. The Ethiopians had never traveled much beyond their home areas, let alone across the border. They appeared to be astonished by what they saw in Kenya. Once the Ethiopians returned from Kenya they aspired to emulate the Kenyans, and dozens of collective-action groups quickly formed across the Borana Plateau during the next 18 months. The collective-action goals in Ethiopia reflected problem-solving in the Ethiopian PRAs and CAPs as well as achievements of the Kenyans. In subsequent years we continued to rely on peer-to-peer learning as an important tool, whether it involved more cross-border tours, transport of Kenyan mentors to hold rallies back on the Borana Plateau, tours in the lowlands and highlands of Ethiopia where Ethiopians from different sectors could share experiences, or in helping build regional livestock marketing networks (Desta et al. 2006).
**Capacity Building.** Shortly after collective-action groups began to form in Ethiopia, demand-driven initiatives were undertaken to train group members in micro-finance, group dynamics, leadership, bookkeeping, small-business management, livestock marketing, value chains, entrepreneurship, and cooperative formation (Desta et al., 2006; Coppock et al. 2009; Tezera et al., 2008, 2009, in preparation). Many of the offerings were developed specifically for illiterate people by specialized Ethiopian educators or consultants. The courses were supplemented by exposure of adults and youths to proxy non-formal education (PNFE) to improve basic literacy and numeracy skills (PNFE is a flexible, demand-driven form of rural education described by Tezera et al., 2003). Not every founding member of groups was directly reached by these educational initiatives, however; enrollments per course varied from 2 to 100% of founding members simply due to course-specific logistics and limits of funding support (Tezera et al., 2009). It was expected that information and knowledge so generated would diffuse among peers and family members.
Monitoring, Mentoring, and Trouble-Shooting. The core of our effort was the creation of sustainable collective-action groups on the Borana Plateau. We therefore needed to monitor the progress of groups over time. However, this was not just passive observation, but rather a highly engaged process of making regular visits to groups that incorporated mentoring and problem solving. This allowed us to collect information on the factors that influenced group success. We served as mediators of conflicts and as a source of problem-solving information and expertise. This monitoring, mentoring, and trouble-shooting phase was carried out from 2001 to 2007 while PARIMA was still the main coordinating entity for the groups. We continued to make visits—although less frequently—once groups merged into cooperatives, from late 2007 through the end of September 2009. It is important to note that although our efforts were primarily devoted to promote group sustainability, this was only in response to group requests for assistance. We never assumed that collective action was an end unto itself. Rather, collective action can be viewed as one of several human development stages. Once certain needs are satisfied, some members may logically disengage from groups as they personally grow and pursue other opportunities. New people join groups.

Impact Assessment. Finally, once the collective action groups had formed and become stabilized, conventional research was conducted to assess impacts of interventions on livelihoods, resource management, and resilience in coping with drought (Coppock et al., 2007a; in preparation). This involved retrospective interviews and observations of randomly selected group members and non-group members in multiple locations. This resulted in a quasi-experimental format where statistical comparisons could be made to assess effects of collective action. Feedback from pastoralists helped shape this more formalized enquiry. Insights from pastoralists also helped us interpret results. Further retrospective work has been conducted on the recasting of some gender relations due to the collective action process, but these results are still being analyzed (Radel et al., in preparation.)
KEY FINDINGS: PROCESS

Given that the initial number of founding members of 59 collective action groups averaged 39 per group (76% women) the grand total founding members was 2,301. Each founding member represented households having an average size of five more people, so the number of direct project beneficiaries is around 13,800 (Tezera et al., 2009). The actual number may, in fact, be larger due to diffusion of activities beyond the project domain (Coppock et al., 2007b). As of late 2007, prior to the start of cooperative formation, not one of the 59 collective-action groups had failed. Net change in membership had been minimal to this point.

Participatory Rural Assessments
About 600 community members participated in the PRAs and CAPs. Results from PRAs indicated that the major problems centered on lack of food and water for people. There was surprisingly little evidence that the communities had collectively or publicly analyzed their situation prior to the PRAs. The solution was uniformly felt that livelihoods needed to be diversified to increase incomes. Lack of education and economic opportunity were key obstacles (Desta et al., 2004).
A series of CAPs was funded that focused on establishing village-level classrooms and a cadre of teachers for literacy and numeracy training for adult education in a very flexible format. Training also began in grassroots micro-finance based on small cells of people who knew each other well and could closely screen applications of potential members. Terms of loan disbursement and repayment were ratified. Details on micro-finance methods are reported elsewhere (Desta et al., 2006; Coppock et al., 2009; Tezera et al., in preparation). The implementation of PRAs plus CAPs cost about US $7,200 (Tezera et al., 2009) and a major funding source for this was USAID-Ethiopia. Communities contributed an in-kind match, usually labor. Communities appeared surprised when we swiftly moved ahead with their CAPs.

**Cross-Border Tours**

*Effects from the Kenya cross-border tour and the CAPs created synergisms.* The Ethiopian travelers had been stunned to meet such an array of talented, healthy, independent, and nurturing women who were “doing so well” in northern Kenya. This was magnified by the fact that the Kenyans shared the same language and ethnic background as the Ethiopians. Reflecting later on the experience, some of the Ethiopian travelers commented that it was as if their former lives had been a *visionless existence*. They also felt *they could achieve more than the Kenyans had because the semi-arid Borana Plateau is more productive than arid northern Kenya.* Several direct quotes from travelers that clearly illustrate the high emotional impact of the trip are presented in Coppock et al. (2009). A second trip was conducted soon thereafter with other Ethiopian women leaders.

Within three years after the first group of Ethiopian women returned home all 59 collective-action groups had been created. *The inspiration and hope provided by the Kenyan peers was probably the single most important event that catapulted the project to success.* The Ethiopians suddenly began building meeting halls in their villages where women could convene. Collective-action principles and group by-laws were rapidly embraced. PARIMA and her partners had a difficult time keeping up with the pace—the limitations on additional group formation beyond the 59
Through the cross-border tours, the Kenyans mentored the Ethiopian women on how to include husbands as partners in change and avoid the adversarial relationships that sudden change can create.

were constraints on our funding, time, and abilities to provide backup in terms of capacity building.

We continued to rely on the cross-border relationships among the women. In particular, we brought a few leaders of the Kenyan groups to the Borana Plateau six times over the next few years where they went on a broad circuit that engaged thousands. The Kenyans continued to inspire and mentor the Ethiopians. One of the most important issues conveyed by the Kenyans was how the Ethiopians could get their husbands to become partners in change, rather than have sudden change create adversarial
relationships. According to our observations, this mentoring seemed to work.

Beyond our organized excursions, having women travel alone or in small groups across the international border on their own initiative posed problems. Cross-border checkpoints were becoming more vigilant about security and stemming the flow of local citizens who lacked proper documentation. In addition, periodic outbreaks of violence in northern Kenya made future organized tours too risky for us to undertake. Despite such challenges, government officials from both sides of the border who were in our collaborative network facilitated the cross-border efforts.

In total there were two group tours to Kenya and six mentor tours to Ethiopia. The total number of people involved in these tours was nearly 4,660 at a total project cost of US $10,772. The ultimate impact of this expenditure is hard to gauge, but it is likely among the highest of any single activity we undertook. This is because it provided the seeds for the Ethiopians to envision alternative futures for themselves.

Other Capacity Building
Capacity building included implementation of previously listed short courses and PNFE. It also included use of regional or local tours within Ethiopia where leaders of collective-action groups could get new ideas, see value chains in action, and participate in deliberations concerning formation of livestock-marketing channels. These tours included visits across the Borana Plateau as well as to the Ethiopian highlands. Highland tours included visits to various producer cooperatives as well as modern livestock-processing facilities. It was in the context of these efforts that the participants began to understand factors affecting demand for range livestock as well as the importance of product competition and quality. Statistics on enrollments and costs are again from Tezera et al. (2009). The total enrollment in 36 offerings of the short courses was 2,838 at a cost of $55,618. The PNFE served 2,275 participants at a cost of US $13,650. The 14 Ethiopia tours involved 480 people and cost US $5,432. It is important to note that capacity building was also important for front-line staff of
collaborating organizations. They often lacked specialized training and experience. We included them whenever possible.

**Monitoring, Mentoring and Trouble-Shooting**

Over six years the field visits for monitoring and evaluation of groups yielded a quantitative data base as to what problems occurred and how they were solved. Overall, the major threats to the sustainability of the groups were internal conflicts among members. These were dominated by disputes over group management procedures (65% of 59 groups affected), potential mismanagement of funds (25%), gender inequities (30%), inadequate participation by all group members (30%), and intense competitiveness among peers (12%; Tezera et al., in preparation). Conflicts due to religion, local politics, or lack of resource access were minor (5% to 10% of groups affected). About 95% of all conflicts were eventually resolved internally among group members with guidance from the PARIMA team. Only 5% required extensive mentoring and intervention by PARIMA and her partners to help resolve. Interestingly, drought per se has not been a source of acute trouble for the groups, although drought is recognized as an important background constraint for livelihood improvement in general. There was one other source of trouble that we observed beyond the regular visits, and that involved relations among groups, private livestock traders, and export firms (Desta et al., 2006). In one case traders supplied misinformation to groups and this jeopardized the delivery of livestock to complete an important transaction. It took over a year for the affected groups to recover, but they learned from the experience and re-entered the marketing chain.
KEY FINDINGS: DEVELOPMENT OUTCOMES

Micro-finance and Livestock Marketing
Project enrollment statistics, however, do not portray synergistic development outcomes of capacity building. These outcomes are reflected in terms of how groups have performed in micro-finance and livestock marketing. For micro-finance, between 2001 and 2007 the 59 groups had accumulated cash savings on the order of US$ 93,000 from an initial base of zero (Tezera et al., 2009). About 5,364 micro-loans were extended with 96% repaid at 10.5% interest. The cumulative loan value was over US $647,600. Livelihoods were diversified to include commercial livestock trade, shop keeping, rental house construction, sand and gravel enterprises, cash-crop production for vegetables and cereal grains, bakeries, and butcheries.

In terms of livestock marketing, groups were willing and able to trade animals and enter a supply chain. Eleven groups sold over 25,600 head of sheep and goats to two export firms during 2004 to 2005 (Desta et al., 2006). Importantly, these groups were using their new entrepreneurial skills to act as traders who procured animals for sale from northern Kenya and across the Borana Plateau. Their own flocks were much too small to serve as a major source of supply. The groups were moderately profitable and income-generation opportunities were created, despite having to
navigate some significant marketing risks at the farm gate. These risks were related to the timely transfer of animal inventory and cash payments (Desta et al., 2006; Coppock et al., 2009).

**Impact Assessment**

We used structured surveys to interview adults selected randomly from collective-action groups as well as from neighboring paired controls (i.e., traditional peers who never volunteered to join groups). Across two districts we had 180 survey respondents. Of this total, 120 were group members and 60 were traditional peers. Half of the group members also had access to seed loans for livestock trading provided by AU-IBAR, so there were three study treatments of 60 respondents each. The respondents were asked to assess the extent that they perceived positive, negative, or no change in their lives over the previous three years in terms of 19 social, economic, and ecological attributes. Descriptive results have been previously shown in Coppock et al. (2007b) and an updated statistical analysis is in Coppock et al. (in preparation).

Considered overall, an average of 81% of the sampled group members perceived that their lives had improved in everything from income and quality of life to personal confidence. In contrast, an average of only 16% of control respondents felt the same way (Coppock et al., 2007b; Table 1.) Statistical analysis reveals that these differences are highly significant in 14 of 19 attributes. There is variation due to district location and whether group members had access to AU-IBAR loans, but the overall positive impact of collective action is clear. In one district the synergism between collective action and loan access was high, and is likely related to market access. It was surprising that collective action had positive collateral effects on human health, livestock health, and access to drought forage supplies in some cases. Key informants revealed a logical reason: When people have higher incomes they can better afford to improve their lives in a wide variety of ways.

Collective action here also has implications for hunger alleviation and fundamental shifts in livelihood strategies. While only 8% of control respondents noted that their households had not experienced hunger
Table 1. Percentage of respondents from collective-action groups or from among traditional peers that perceived change during the period 2004-7 on the Borana Plateau. Sample sizes were 120 for the group members and 60 for the traditional peers.

<table>
<thead>
<tr>
<th>CIRCUMSTANCES</th>
<th>COLLECTIVE ACTION GROUPS</th>
<th>TRADITIONAL PEERS (CONTROLS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive Change</td>
<td>No Change</td>
</tr>
<tr>
<td>Skills/Knowledge</td>
<td>90</td>
<td>6</td>
</tr>
<tr>
<td>Human Health</td>
<td>87</td>
<td>5</td>
</tr>
<tr>
<td>Community Reliance</td>
<td>82</td>
<td>8</td>
</tr>
<tr>
<td>Cash Income</td>
<td>72</td>
<td>13</td>
</tr>
<tr>
<td>Personal Confidence</td>
<td>83</td>
<td>3</td>
</tr>
<tr>
<td>Ability to Solve New Problems</td>
<td>82</td>
<td>7</td>
</tr>
<tr>
<td>Access to Credit</td>
<td>85</td>
<td>7</td>
</tr>
<tr>
<td>Home Comfort</td>
<td>80</td>
<td>9</td>
</tr>
<tr>
<td>Access to Livestock Marketing</td>
<td>70</td>
<td>9</td>
</tr>
<tr>
<td>Involvement in Small Business</td>
<td>78</td>
<td>13</td>
</tr>
<tr>
<td>Interest in Educating Children</td>
<td>74</td>
<td>20</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>85</td>
<td>3</td>
</tr>
</tbody>
</table>

over six months previous to the survey, for group members this was 26 percent. Accordingly, 75 percent of the controls said that the incidence of hunger had been “common to severe” over the same time frame. For the group members this declined to 23%. Group members indicated that their livelihood strategy for the next 5 years would be focused on diversification (63%) or intensified production (24%). In contrast, the dominant responses of the controls were either to continue with traditions (55%) or they did not know what they would do (22%). These patterns have been confirmed as statistically significant as well.
Figure 1. Step-Wise Process of Capacity Building for Pastoral Collective-Action Groups

FORGE LINKS TO MARKETS

MICRO-ENTERPRISE TRAINING

SAVINGS & CREDIT TRAINING

PNFE: RAISE LITERACY AND NUMERACY

PEOPLE MOTIVATED BY EXPOSURE TO PEER INNOVATION

Source: Tezera et al., 2008.
OVERALL CAPACITY BUILDING MODEL AND COSTS

After several years of iterative achievements, a step-wise model for local capacity building was evident. It resembles a pyramid (Figure 1). Each level represents a constraint that needed to be addressed. Inspiration came first, followed by sequential skill development. The culmination was the improved access to livestock markets. This is the ultimate means for the society to generate larger amounts of income overall. This, in turn, helps pastoralists adjust stocking rates and improve grazing management.

Assuming a project period of three years and an overall target population of 13,800, we have estimated the implementation costs to be about US $1/person/month or US $34 per person, consistent with similar development efforts in the region (Tezera et al., 2009). Aggregate costs are shown in Table 2. The single largest expense was for technical implementation and supervision. Our staff was dominated by internationally recruited members. If staff can be locally recruited the costs for this component could drop considerably. Another large expense was augmentation of loan capital for groups. The previously reported statistics for loan extension are based on savings-led processes. Early in the project we supplemented loan capital with USAID Mission funds to accelerate the growth of accounts and provide a greater incentive for participants to take loans. The extreme
Table 2. Summary of costs required for capacity building a population in southern Ethiopia. Source: Tezera et al., 2009.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Total Cost</th>
<th>Cost per Person Based on 2,300</th>
<th>Cost per Person Based on 13,800</th>
<th>Percent of Target Population Engaged (2,300;13,800)</th>
<th>Percent of Grand Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRAs/CAPs</td>
<td>$7,200</td>
<td>$3.13</td>
<td>$0.52</td>
<td>26%;4%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Training for pastoralists</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short courses</td>
<td>$55,618</td>
<td>$24.18</td>
<td>$4.03</td>
<td>17%;3%</td>
<td>18.5%</td>
</tr>
<tr>
<td>Tours</td>
<td>$63,864</td>
<td>$29.27</td>
<td>$4.63</td>
<td>31%;9%</td>
<td>13.5%</td>
</tr>
<tr>
<td>PNFE</td>
<td>$13,650</td>
<td>$6.57</td>
<td>$0.99</td>
<td>50%;16%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Loan capital augmentation</td>
<td>$137,500</td>
<td>$59.78</td>
<td>$9.96</td>
<td>100%;17%</td>
<td>27.5%</td>
</tr>
<tr>
<td>Monitoring and evaluation</td>
<td>$10,074</td>
<td>$4.38</td>
<td>$0.73</td>
<td>17%;3%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Local technical implementation and supervision</td>
<td>$185,350</td>
<td>$73.91</td>
<td>$13.43</td>
<td>100%;17%</td>
<td>34.1%</td>
</tr>
<tr>
<td>Column Totals:</td>
<td>$473,256</td>
<td>$217.12</td>
<td>$34.29</td>
<td>NA</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

poverty of most founding members meant that their ability to save was initially limited. The augmentation strategy worked well (Tezera et. al., in preparation). Other ways to cut overall implementation costs include reducing the emphasis on cross-border tours. Although these tours were vital for us, now there are capable group leaders in Ethiopia that can be called upon to inspire and mentor others in-country. The Kenya connection is thus less important today than in 2001. The last places to cut funding would be in terms of the mentoring or capacity building.
CONCLUDING REMARKS

The positive outcomes of the project were related to synergisms among: (1) the background factors; (2) the inclusive, action-oriented process; and (3) the mutually reinforcing nature of the interventions. Had any of these three dimensions been lacking the project could have failed.

We offer 10 lessons we have learned that relate to successfully managing our process (Tezera et al., 2008; Tezera et al., in preparation). These lessons embody operational values and principles. They include emphasis on: (1) Intervening on a small scale; (2) authentic participation and impact; (3) partnership building; (4) women in development; (5) capacity building; (6) peer-to-peer learning; (7) market linkages and networking; (8) respect for local cultures; (9) conflict management; and (10) creating cooperatives based on voluntary, well-managed transitions.

Our demand-driven interventions focused on collective action, microfinance, other technical and social capacity building, and forging links to markets. This produced a strong, cohesive development package. Project participants are better able to manage risk and engage an ever-changing world. Despite the numerous positive outcomes, new challenges will threaten sustainability. Vigilance and long-term commitments to problem-
solving are required among stakeholders to promote sustainability (Getachew et al., 2009).

Collective action and associated capacity building are not quick fixes for development. Hastily formed groups are likely to quickly disintegrate under stress. On average, it took from two to three years of intensive capacity building, mentoring, and experience for us to help transform raw volunteers into durable groups (Tezera et al., 2008).

Researchers on this project had the great benefit of seeing on-the-ground outcomes result from ideas that were rooted in long-term scientific observation of this and similar pastoral communities in eastern Africa. The researchers had to endure high transaction costs in the process, however, and this can provide professional disincentives for researchers to engage in action-oriented work, especially those in academia where rewards are often focused on the efficiency in publishing per unit time. We have published some of this action-oriented work and expect to publish more. It is a direction that many like-minded researchers are moving in, and journals are becoming more receptive to such work. We feel action research is becoming the wave of the future, especially in the developing world where problem-solving is center stage and traditional research approaches have too often been found lacking. In one sense, if action research is structured so that it also tests hypotheses in at least quasi-experimental ways, it offers advantages over traditional survey research in terms of generating knowledge that is more reliable by being less speculative. For example, our observations in southern Ethiopia leave little doubt as to what the capabilities of local people really are (high) and where the ultimate constraints to local development really lie (sustaining livestock marketing opportunities). Once hypothesis testing is merged with problem solving and real impact in an action-research format, the future of action approaches then becomes secure as a new intellectual endeavor. Greenwood and Levin (2000) make a very harsh assessment of the continued relevance of traditional social science in US academia. In their view, transitioning to an action-oriented agenda would be beneficial for reviving intellectual discourse as well as improving relationships
between universities and contemporary societies. An important factor that could speed the adoption of action-oriented approaches in academia would be broadening the traditional criteria that have been used to evaluate the professoriate (Glassick et al., 1997).

**Action-research systems** can certainly be modified from what we have described and still be successful, but the core operating values should be adhered to. For example, we have recently observed rapid and impressive impacts from a similar, but more condensed, approach that was implemented among agro-pastoralists in Baringo, Kenya (Mutinda et al., 2007; Aboud et al., 2009). We also see opportunities to adapt an action-research system to narrower value-chain problems involving marketing of milk or small ruminants in Ethiopia. In summary, our evidence from southern Ethiopia demonstrates that action-oriented research can make a difference in the marginal lands of the developing world, especially if the focus is demand-driven and builds human capacity. In our case, achieving impact required a new way of organizing and implementing a project, with research and development in full partnership.
REFERENCES


