

# Cross-Border Interaction Spurs Innovation and Hope Among Pastoral and Agro-Pastoral Women of Ethiopia and Kenya

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## On the Ground

- African pastoralists endure poverty, drought, and hunger. Women are especially marginalized because they are illiterate, unskilled, disempowered, and engaged in daily drudgery.
- Such women, however, are capable of remarkable, sustained achievements in collective action, livelihood diversification, micro-finance, and community-based wealth generation.
- Women can be profoundly inspired by successful peers. After careful training and mentoring, inspired women can then start new initiatives.
- Husbands can be supportive of women's empowerment because household welfare improves. Men sometimes join—and occasionally help lead—collective-action efforts.
- Women's empowerment should be a major focus in pastoral development projects because of the positive community synergisms women create.

**Keywords:** Boran, Il Chamus, Tugen, Borana Plateau, Marsabit County, Baringo County, peer-to-peer learning, diffusion of innovations.

## La interacción transfronteriza estimula la innovación y la esperanza entre las mujeres pastoras y agropastoras de etipía y kenia

### Perspectiva desde el campo:

- Las y los pastores africanos soportan pobreza, sequía y hambre. Las mujeres son especialmente marginadas debido a que son analfabetas, no representan mano de obra calificada, no están empoderadas y se dedican al arduo y tedioso trabajo cotidiano.
- Sin embargo, estas mujeres son capaces de logros notables y sostenidos en términos de acción colectiva, diversificación del sustento, microfinanzas y generación de riqueza basada en la comunidad.
- Las mujeres pueden ser inspiradas profundamente por pares exitosos. Después de una cuidadosa capacitación y enseñanza, las mujeres inspiradas pueden entonces poner en marcha nuevas iniciativas.
- Los esposos pueden resultar de apoyo para el empoderamiento de las mujeres debido a que mejora el bienestar de la unidad doméstica. En ocasiones los hombres se integran a —y algunas veces ayudan a dirigir— los esfuerzos de acción colectiva.
- El empoderamiento de las mujeres debería ser un enfoque preponderante de los proyectos de desarrollo pastoral en virtud de las sinergias comunitarias positivas que crean.

The rangelands of eastern Africa are difficult places—hunger, poverty, and drought are common challenges. Are there sustainable ways to improve lives here, or is the situation beyond repair? In 1997 we started a research project to improve pastoral risk management in Ethiopia and Kenya (Fig. 1). We knew that people in this region were under stress. We wanted to find ways to increase incomes, build assets, and enhance well-being. Later known by its acronym PARIMA (PAstoral Risk Management), the project had many achievements. The project ended in 2009, but we have kept in touch with several communities we had worked with.

One of our most important discoveries was in 1999 when a few of our team members were driving on a washboard road in the rocky, arid terrain of northern Kenya. The vehicle blew a tire, and the team members had to spend the night in a remote settlement while the tire was repaired. The settlement had a cluster of tin-roofed dwellings, a borehole, and a few mud-walled booths where small household items were sold. Some local women invited our team to join them for dinner, where the women spoke freely about their lives. Little did we know that this meal would be a turning point for our project.

### **The Remarkable Pastoral Women's Groups of Marsabit County, Kenya**

The women identified themselves as pastoralists, but they now lived a settled life. They said they had once been poverty stricken, having lost their livestock years ago during a drought that forced them to abandon their traditional nomadic ways. They gravitated toward settlements where they could find food and medical assistance. Eventually the women survived by earning the equivalent of US \$2 per day from selling firewood and charcoal that they carried to local markets. Life was harsh. Often illiterate, with no livestock and sometimes young children in tow—their future looked grim.

Then the women explained how things began to change. The women decided to create an informal group with other women like themselves. They elected leaders and members saved a few coins weekly. Once the pooled savings was large enough, they extended small loans to each other—the equivalent of US \$20 or less. The loan recipients used the money wisely, knowing that if they failed to repay group survival could be jeopardized. There was no loan collateral other than the personal honor of the borrower. A similar microfinance process that began in southern Asia is also founded on social collateral. It has become widely known as the Grameen Bank.<sup>1</sup>

Loan recipients invested in small-scale vegetable production, retail shops, and other micro-enterprises where a quick profit was possible. If rainfall was favorable they could invest in sheep and goats. If drought occurred they would sell livestock and invest in nonpastoral enterprises. After a few years the cash reserves grew, and so did the projects. The women invested in rental lodgings, tourist campsites, grain mills, milk processing, and even a veterinary supply store.

Once the group had sufficient assets they funded scholarships for the children of members so they could access secondary and tertiary education. They supported health clinics, primary schools, and targeted assistance to AIDS sufferers, the very poor, elderly, or infirm—inputs that the Kenyan government struggled to provide. The groups engaged in a process called collective action.<sup>2</sup> We asked ourselves if these women provided an example of the risk-management model we sought for PARIMA—namely, a simple mechanism to help diversify livelihoods and improve lives for marginalized populations.

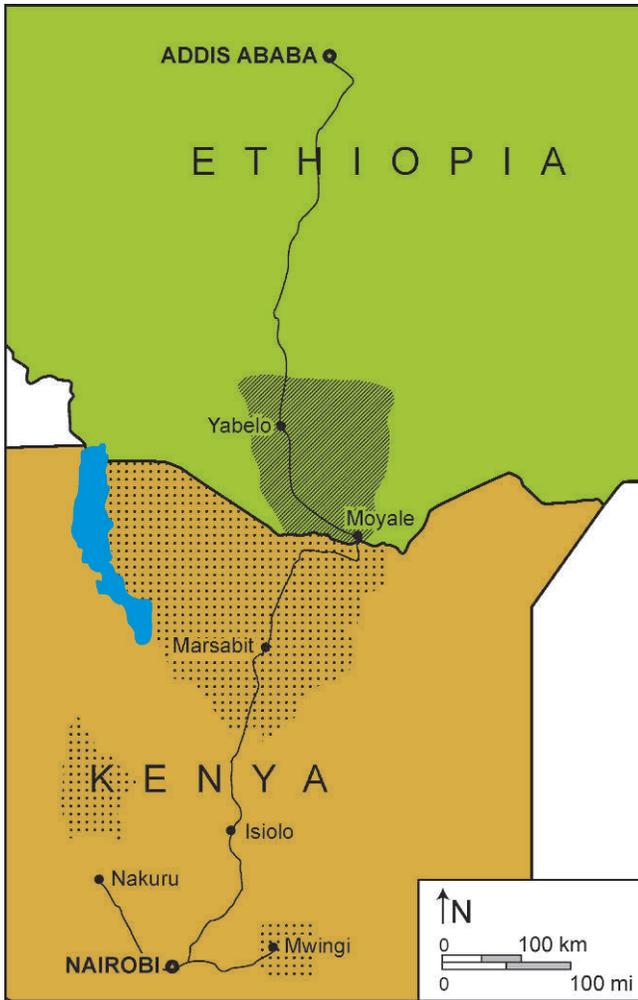
As researchers we wanted to confirm these stories; we rarely heard anything good about northern Kenya. We later learned that similar women's groups occurred throughout the region. We selected 16 groups for in-depth study; they were located in most of the settlements near the main road between Isiolo and Moyale and were purposely selected based on accessibility (Fig. 1). We found the narrative to be the same everywhere we looked—illiterate, impoverished women banding together to solve problems, and then elevating their livelihoods and communities in the process.<sup>2</sup>

Another interesting pattern emerged, namely, that men were not allowed to join the groups.<sup>2</sup> Men were considered unable or unwilling to be effective team players. They were thought to be unreliable loan recipients and capable of being bullies.

The women's groups we interviewed were dynamic and resourceful. They were immensely proud of their achievements. Groups were governed by formal constitutions and by-laws that were in written documents. These documents were often prepared in consultation with local development agents and covered the goals, rights, and responsibilities inherent in group formation. Despite that most group members were illiterate, many had memorized these details and thus were well-informed participants.<sup>2</sup> In one public forum where one of the authors (DLC) spoke to an assembly of dozens of group members, a woman said, "One reason we believe we can succeed is because we want to be like strong American women." How people living in such a remote place could form opinions about American women as role models remains unknown to us.

### **Transferring the Kenyan Women's Group Model to Southern Ethiopia**

Some of our team members had worked for many years on the semiarid, high-elevation Borana Plateau in southern Ethiopia when PARIMA began.<sup>3</sup> When compared to northern Kenya, the Borana Plateau is cooler, wetter, and more favorable for both livestock and corn production. The infrastructure is also better in southern Ethiopia, because an asphalt road bisects the *Acacia*-dominated savanna—a marked improvement over the washboard tracks crossing Kenya's lava hills. The Ethiopian pastoralists, however, were much more isolated from the outside world than their Kenyan counterparts in 1999. Both lived far from their modern



**Figure 1.** Map of southern Ethiopia and north-central Kenya. Portions of major roadways (lines connecting urban locales) are shown that were pertinent to our regional operations. The towns of Yabelo (Ethiopia) and Moyale (Ethio-Kenya border) are near the northern and southern edges of the central Borana Plateau, respectively. The central plateau is depicted by parallel lines. The towns of Marsabit, Nakuru, and Mwingi in Kenya are major urban centers in or near Marsabit District, Baringo District, and Mwingi District, respectively. District areas are roughly depicted by dots. After our research concluded, the Kenya district system was converted to a county system with some changes in borders. Addis Ababa and Nairobi are national capitals.

capitals (Fig. 1), but the Kenyans were relatively more connected to commerce and public services.<sup>4</sup> The international border appeared permeable to male pastoralists and traders, but much less so for women.

In contrast to the members of women's groups in northern Kenya, pastoral women in southern Ethiopia tended to be more traditional in terms of how they dressed and acted. The Ethiopians also appeared haggard compared to the Kenyans. Both the Ethiopians and Kenyans were from the Boran tribe and shared a language and cultural heritage. The Ethiopian Boran typically lived in scattered encampments rather than the permanent settlements that characterized the Kenyan situation. Daily life for married Ethiopian women was often



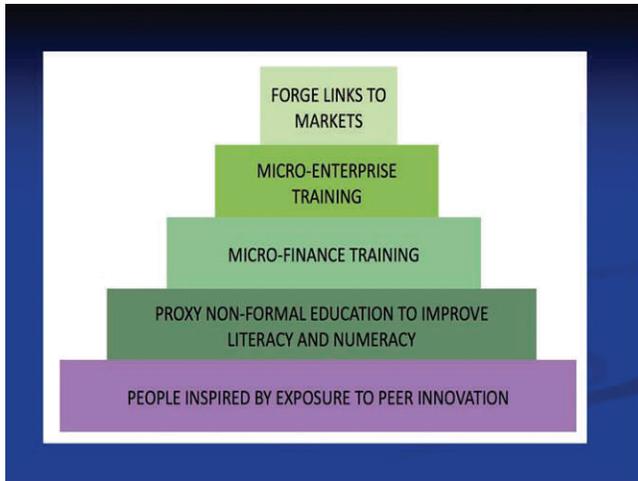
**Figure 2.** Kenyan woman showing Ethiopian women a new water storage system funded and implemented by a Kenyan women's group. This event took place during a tour of northern Kenya by pastoral women leaders from southern Ethiopia. Photo courtesy of Seyoum Tezera.

difficult, dominated by childcare, milking animals, preparing meals, hauling water, and collecting firewood.<sup>3</sup>

After confirming that the achievements of the Kenyan women's groups were authentic, we decided to bring women from the two societies together. We hand-picked 15 Ethiopian women and drove them across the border for a two-week trip during 2000 to meet the Kenyans. These women were leaders in their communities and volunteered for the journey. Despite most of these women being in their 30s and 40s, they had never traveled very far from home before, let alone across the border. We did not know what outcomes to expect from the trip; at minimum we felt the women might exchange a few ideas.

The Kenyans were gracious hosts for the Ethiopians. The Kenyans showed them their achievements and explained how they overcame challenges (Fig. 2). The Ethiopians had many emotions following the trip.<sup>5</sup> They were stunned by what they saw, embarrassed by how they lived, and inspired by the courage and vision of the Kenyans. The tour ignited an eventual tidal wave of change in Ethiopia once the Ethiopian women returned home, a situation we closely monitored through 2009.<sup>6</sup> The Ethiopian women wanted to achieve what the Kenyans had achieved, but the Ethiopians had greater ambitions given their more favorable environment.

The tidal wave began when the 15 Ethiopians began to organize women in their communities. They held meetings and described what they had seen in Kenya. Women formed various development committees as well as savings-and-credit associations. Our project then simultaneously started a series of community-based Participatory Rural Appraisals (PRAs) that identified priority problems along with sustainable solutions.<sup>5,6</sup> The main problem overall was poverty related to poorly diversified livelihoods, and improving access to education and skill development was seen as the means to

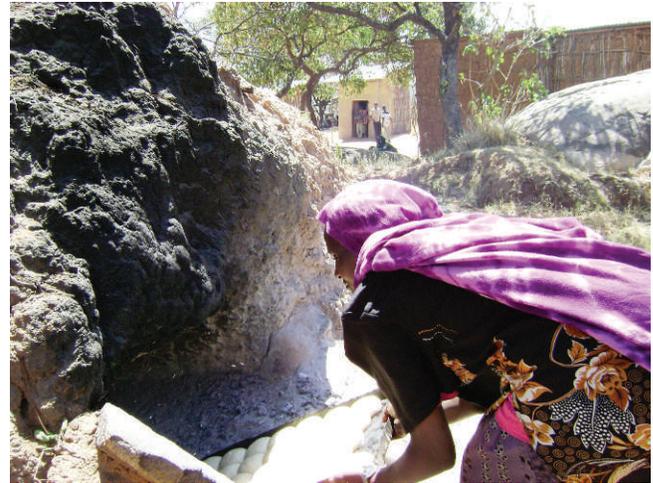


**Figure 3.** Stepwise capacity-building model for Ethiopian pastoralists used in the PARIMA project, starting from the bottom-up. This illustration has been modified from a similar version published by Earthscan,<sup>14</sup> and reproduced here with permission.

make progress. This led to the development of community action plans that were funded by donors to accelerate and catalyze change. The outcome was a stepwise capacity-building program shown in Figure 3.

By 2005, 59 collective-action groups had been created with 2,301 founding members. Seventy-six percent were women, and women assumed group leadership roles in most cases. This was novel because men have traditionally dominated the politics and livestock economy of this society. The groups saved the equivalent of US \$93,000 in just a few years. The cumulative value for over 5,300 microloans extended from this base sum was the equivalent of US \$647,000, with a loan repayment rate of 96%.<sup>6</sup> Most of the entrepreneurial activities involved livestock production and trade but also included construction of rental homes and establishment of butchereries, bakeries, small retail shops, and commercial vegetable and forage production.<sup>6</sup> We were astonished at their creativity (Fig. 4). The Ethiopians also quickly supported their children—both girls and boys—to enroll in local schools that offered informal or formal education. The value of education was suddenly apparent from what had been observed in Kenya, and literacy and numeracy skills for both adults and youths rapidly improved.<sup>5</sup>

There was some initial push-back from husbands given rapid changes in domestic gender roles, but the Kenyans had warned the Ethiopians this would happen and gave advice as to how to win over the men.<sup>5</sup> After 10 years, more than 30,000 people in southern Ethiopia have been affected by collective-action processes. The 2,301 founding group members affected an average of six other people each in just a few years, bringing the direct beneficiaries to more than 13,800. Subsequent spill-over effects more than doubled this by 2009. And interestingly—unlike the Kenyans—some of the Ethiopian groups included men as members. Men showed they could play important roles as negotiators with livestock



**Figure 4.** Woman in southern Ethiopia baking bread in an oven she created from a deserted termite mound. The large, hardened structure and natural flue of termite mounds makes them ideal for this purpose when portions are hollowed out. This woman used a microloan to purchase cooking pans and pay a male baker in another town to teach her the craft. She solved her lack of an oven with the termite mound. Her business has been successful because she astutely analyzed the market beforehand. This illustrates the creativity and determination we observed among entrepreneurial pastoral and agro-pastoral women in Ethiopia and Kenya. Photo courtesy of Seyoum Tezera.

traders, and in a few cases men emerged as effective leaders of mixed groups.<sup>6,7</sup>

### Back to Kenya: Will a Similar Approach Work Again for Agro-Pastoralists?

By 2006 we realized our approach was avidly appreciated by local people. It was sustainable and invigorating to be a part of. Our Kenyan team members for PARIMA based at Egerton University wanted to initiate a similar process among the II Chamus and Tugen agro-pastoralists in the Rift Valley of Baringo County, located southwest of Marsabit County (Fig. 1). Here some of the challenges were different.

The II Chamus and Tugen are agro-pastoralists who raise crops and livestock. Their land is eroded, however, and invasive woody species like mesquite (*Prosopis juliflora*) are abundant. Though many of these people are literate and have been exposed to the modern world given their proximity to the urbanized Kenyan highlands, many remain poverty-stricken. The II Chamus and Tugen have long received food aid and have been clients of many externally generated development projects. This unusually high level of external assistance occurred because Baringo County has been the home of Kenya's former president, Daniel Arap-Moi. The people first contacted by PARIMA seemed to lack motivation to improve their lives—they were locked in a “dependency syndrome.”<sup>8</sup>

We used a slightly different approach in Baringo than we used in Ethiopia. We interviewed 169 women and men from both the II Chamus and Tugen communities, and after two elimination rounds we selected 12 (eight women and four men) who held the most promise as potential entrepreneurs.<sup>8</sup>

These finalists were poor, but they were self-motivated, bright, and willing to serve as community role models.

The 12 were taken on a five-day tour of Mwingi County, 400 km to the southeast (Fig. 1), where the ecology was similar, but the resident Kamba community was creative and skilled at nurturing collective-action projects.<sup>8</sup> Innovation among the Kamba had been previously observed by Kenyan scientists touring Mwingi who also served on the PARIMA project. The activities observed in Mwingi included small-scale, commercial production of fruit, vegetables, ruminant livestock, honey, and silk. Both women and men were involved. Fruit and vegetables were grown under irrigation. These activities were routine for the Kamba, but they were new and exciting for the Il Chamus and Tugen on the tour. The Il Chamus and Tugen also appreciated the leadership role that Kamba women played in local development in Mwingi—unlike the situation in Baringo where men dominated.

Upon their return to Baringo the entrepreneurs charged ahead, forming mixed-gender groups typically led by “chair-ladies.” Microfinance was implemented, and financial support was provided by PARIMA to help jump-start activities. Efforts quickly focused on small-scale, irrigated production of vegetables and fruit (oranges and mangoes), as well as crossbred goats, both for home consumption and for sale in local markets. Honey production was a particularly strong income-earner early on among the Il Chamus, who in addition started to make high-value charcoal from thickets of mesquite. Enterprises were developed in different ways by the Tugen and Il Chamus when compared to what the Kamba had done (unpublished data, Mutinda). For example, for livestock, the Kamba focused more on cattle for draft power and dairy, whereas in Baringo the focus on small ruminants led to an emphasis on breeding (Tugen) or marketing (Il Chamus). This reflected local variation in the ecology and economic opportunities. Water storage and delivery systems were upgraded in the Baringo sites. Attitudes among the people in the targeted communities suddenly changed, and the Il Chamus and Tugen participants expressed new hope for the future.<sup>8</sup>

As previously observed on the Borana Plateau and in Marsabit County, women dominated the group formation process in Baringo. The women gained personal confidence that helped them become more assertive with men and better negotiators in the marketplace. Their success inspired others to engage in collective action. The Baringo groups have since attracted other donor funding to support projects including water development and biodiesel production. The groups have also provided a means to educate local people on topics such as maternal and childhood nutrition (unpublished data, Mutinda and Muthoka).

### **Why Did Women Step Up—and Why Did This Approach Succeed?**

The collective-action efforts we observed have sustained themselves—often under daunting conditions—for the past 7

years (Baringo), 12 years (Borana Plateau), and over 20 years (Marsabit). While a few men have distinguished themselves in this process, it has largely been the ambition, creativity, and vision of women that led to widespread impacts in each case. Given the opportunity we helped create on the Borana Plateau and in Baringo, women rushed to fill the void. All they needed was to be inspired by female role models in similar settings and receive training and mentoring. Husbands have generally been accommodating to the changes in their communities. Some men have noted that they now have a greater respect for women after seeing what their spouses can achieve.<sup>5</sup>

Why women as change agents? We have observed that illiterate women with no prior formal leadership experience are capable of organizing and helping sustain relatively complex initiatives. In this context—when compared to the men—women have appeared more committed to improving the welfare of peers and their families, as well as more able to form bonds with other women that create trust and a sense of shared responsibility, both essential for the success of collective-action.<sup>1,9</sup> We have noted that women often have high ambitions and the determination to achieve long-term goals.<sup>2,5,6</sup> This is despite constraints that include ignorance of the outside world, poverty, drought, and managing diverse personalities in a group.<sup>2,5</sup> The advantages of women relative to men in undertaking collective action do not surprise scholars, who note that women’s empowerment offers multiple socioeconomic benefits at multiple social scales around the world.<sup>10</sup>

There are now many examples of effective collective-action processes in developing nations, and these are most evident in densely populated farming systems or urban areas.<sup>11</sup> Our studies are some of the first from the lightly populated African rangelands. Such opportunities for group formation and collective action in the rangelands are probably increasing as pastoralists settle and gradually abandon the nomadic way of life.<sup>2</sup> It is ironic—based on our experiences—that pastoral women are often invisible when pastoral development projects have been created and implemented. We speculate that this has happened because when range projects broadly focus on rangeland management and livestock production, the primary stakeholders convened in the community to move a big initiative forward are usually the men—the biggest herd owners and most influential political players. Men have typically dominated the discourse with development agencies, and women’s voices have been muffled. Seeing what empowered pastoral women can do, however, alters this approach. If change agents make sure there are strong pastoral women at the table when projects are conceived and planned, this adds a vital new dimension that more broadly includes the welfare of entire households as well as prospects for diversified livelihoods. Women’s empowerment should be a major focus of pastoral development because of the positive synergisms that women can create for their communities.

Elsewhere it has been observed that women have recently emerged as effective collaborative leaders in situations

as varied as US rangeland management (see *Van Riper, this issue*) and community politics (see *Valdivia et al., this issue*). Gender-related work among Mongolian pastoralists has addressed questions concerning whether female- versus male-headed herder groups vary with respect to socioeconomic outcomes (see *Ulbayar and Fernández-Giménez, this issue*). They found that while leadership attributes were similar for women and men, the groups led by women exhibited higher levels of internal trust. We have research in preparation for Ethiopia that examines gender dynamics after collective-action groups have matured. Prominent questions in our studies include whether women's access to livestock assets has fundamentally improved as a result of women's empowerment, and whether men gradually usurp control of some groups from women over time, especially when collective-action enterprises become profitable and hence attractive. This outcome has been observed among settled pastoralists in the Sudan.<sup>12</sup>

Besides the need for more research that clarifies gender dynamics as collective-action groups mature, there is also a need for study into the multiple burdens that afflict women as they engage the world beyond their households. While such burdens are often articulated for professional women in the modern world (see *Ganguli and Launchbaugh, this issue*), they are also relevant for women in the developing world (see *Radel and Coppock, this issue*). Is it difficult, for example, for pastoral women to sustainably juggle new demands on their time for collective action and community projects in addition to their domestic duties, and are their traditionally minded spouses inclined to assist in the transition? Understanding how attitudes of both women and men change in this context is important (see *Coppock et al., this issue*).

What is different about our approach? We have observed that in reality, development projects are often imposed on local people. Project ideas typically originate from donors or the staff of implementing agencies, and the intended beneficiaries are not adequately consulted. For example, implementing agencies typically inform local people of an impending project rather than involving them in project approval and design. While such projects are well intentioned and can be useful, they may not address the true wants and needs of the local people and do not inspire the loyalty or diligence required for sustainable impact. One result is that beneficiaries can become passively dependent on development agents and are willing to accept whatever "free project" comes down the pipeline. The people are not empowered to help identify and solve their own problems. Use of authentic community-engagement processes such as full PRA for problem diagnosis and following-up with action-oriented investigations—that mix bottom-up and top-down perspectives—has ultimately been the key to our success.<sup>5,6,8,13</sup>

### Can Human Welfare in Eastern African Rangelands Be Improved?

In closing, we have answered the question posed at the start as to whether there are sustainable ways to improve lives in

the harsh pastoral regions of eastern Africa. Our response is "yes," but it has more to do with raising hope and building the capacity of local people to problem-solve and manage risks rather than pushing new technology or range management innovations per se. African range settings are notoriously hostile to new technology. In contrast, the space for enhancing human capacity is immense, and investments—especially to build the capabilities of pastoral women—can rapidly improve human welfare. And in this process we must not leave the pastoral men behind. Investment in boys and men—as well as identifying avenues where both sexes can jointly pursue development initiatives—is a formula to better maintain a sustainable and equitable society. Once human capabilities and ambitions have been raised, this can set the stage for more effective diffusion of social and technical innovations.<sup>6</sup>

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### References

1. YUNUS, M. 1999. The Grameen bank. *Scientific American* 281:114–119.
2. COPPOCK, D. L., AND S. DESTA. 2013. Collective action, innovation, and wealth generation among settled pastoral women in northern Kenya. *Rangeland Ecology & Management* 66:95–105.
3. COPPOCK, D. L. 1994. The Borana plateau of southern Ethiopia: synthesis of pastoral research, development and change, 1980–91. Systems Study No. 5. Addis Ababa, Ethiopia: International Livestock Center for Africa. 374 p.
4. LITTLE, P. D., K. SMITH, B. A. CELLARIUS, D. L. COPPOCK, AND C. B. BARRETT. 2001. Avoiding disaster: diversification and risk management among East African herders. *Development and Change* 32(3):401–433.
5. COPPOCK, D. L., S. TEZERA, S. DESTA, AND G. GEBRU. 2012. Achieving development impact among pastoral and agro-pastoral people: lessons learned in southern Ethiopia, 2000–2009. Addis Ababa, Ethiopia: Ethiopian Society for Animal Production. 65 p. Available at: [http://digitalcommons.usu.edu/envs\\_facpub/507/](http://digitalcommons.usu.edu/envs_facpub/507/). Accessed 20 March 2013.
6. COPPOCK, D. L., S. DESTA, S. TEZERA, AND G. GEBRU. 2011. Capacity building helps pastoral women transform impoverished communities in Ethiopia. *Science* 334:1394–1398.
7. CAPUTO, R. 2010. PARIMA. 15-minute documentary film found at: <http://www.vimeo.com/12800413>. Accessed 16 April 2013.

8. MUTINDA, M., S. K. MUTHOKA, A. A. ABOUD, AND D. L. COPPOCK. 2007. Collective action among agro-pastoralists in Baringo District, Kenya: identifying and nurturing the entrepreneurs. Research Brief 07-01-PARIMA. Global Livestock Collaborative Research Support Program (GL-CRSP), University of California, Davis. 4 p. Available at: [http://digitalcommons.usu.edu/envs\\_facpub/201/](http://digitalcommons.usu.edu/envs_facpub/201/). Accessed 18 April 2013.
9. MAYOUX, L., AND M. HARTL. 2009. Overview, gender and rural finance. *In: Gender in agriculture sourcebook*. Washington, DC, USA: World Bank. p. 85–95.
10. BLUMBERG, R. L. 1995. Introduction: engendering wealth and well-being in an era of economic transformation. *In: R. Blumberg, C. Rakowski, I. Tinker, and M. Monteón [eds.]*, Engendering wealth and well-being: empowerment for global change. Boulder, CO, USA: Westview Press. p. 1–14.
11. GROOTAERT, C. 2001. Does social capital help the poor? A synthesis of findings from the local-level institutions studies in Bolivia, Burkina Faso, and Indonesia. Local-Level Institutions Working Paper No. 10. Washington, DC, USA: World Bank. 28 p.
12. SALEH, M. 1985. Pastoralists in town: some recent trends in pastoralism in the northwest of Omdurman district. Pastoral Development Network Paper 20b. London, UK: Overseas Development Institute. 21 p.
13. NARAYANASAMY, N. 2009. Participatory rural appraisal: principles, methods and application. Thousand Oaks, CA, USA: Sage Publications. 364 p.
14. COPPOCK, D. L., S. DESTA, S. TEZERA, AND G. GEBRU. 2009. An innovation system in the rangelands: Using collective action to diversify livelihoods among settled pastoralists in Ethiopia.

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