

The IK Bridge to Innovation through Endogenous Development

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ABSTRACT

Semi-arid Karamoja is located in the cattle-keeping corner of north-eastern Uganda touching Sudan and Kenya. Its harsh environment and limited health infrastructure have been the driving forces for the Karamojong to heavily rely on the traditional elders' and ethnoveterinary knowledge (EVK). This study was conducted in Karamoja with the specific objectives to use participatory methods to document EVK, and to create local infrastructure to endogenously develop ways to preserve, promote and protect local EVK. It is expected that this information will help to increase sharing, conservation and protection of natural resources, particularly medicinal plants; and to increase interest in EVK among both the Karamojong and external parties. During the ethnography, Participatory Rural Appraisal and Participatory Action Research techniques were employed. Three main results were realized: institutions built (including collaborators and activities), conservation of plants (including medicinal plants domesticated) and knowledge sharing (including approach, impact, and self-sufficiency). We suggest that this same process can help Karamoja with the impending transition. The people could rely on their own cultural innovations, utilizing their traditionally dynamic system that has taken the back seat to external ideas from government, religious organizations, and NGOs as they try to 'help' or 'modernize' the Karamojong.

KEYWORDS

Karamoja, Ethnoveterinary, Endogenous development, Indigenous knowledge, Participatory

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INTRODUCTION

Semi-arid Karamoja is located in the cattle-keeping corner of north-eastern Uganda touching Sudan and Kenya (Figure 1). Its harsh environment coupled with limited health infrastructure, has been the driving force for the Karamojong to heavily rely on the traditional elders' system and their indigenous knowledge (IK). Central to IK is the need of survival; they utilize various adaptive strategies to extract energy that is required for survival from the environment using the best alternatives (Muhereza, 2002).

Figure 1

Strong leadership from traditional elders has historically been a guiding principle in Karamoja, but this has gradually been eroded by leadership schemes introduced over the last 100 years. This has been accelerated in post-colonialism with policies to 'change the thinking' of the Karamojong about their pastoral lifestyle, rather than seeking ways to improve the livelihood of those in the pastoral section.

Leadership is fragmented between two groups: those elected by government and those historically vested with the elders. Within the last 20 years, a new power struggle has developed with a third group: three generations of un-initiated men and youth, virtually all of whom own guns. Some of the men in this third group have gone to school and no longer fit in with the traditional lifestyle, but do not have enough skills for formal employment. Wielding guns on the roads is both an expression of their dissatisfaction with the elders and government, and an attempt to achieve a standard of living.

Acquiring cattle and guns has been a coping mechanism in time of famine or disease since at least the 1890s, when the Karamojong exchanged for cattle for ivory after a *rinderpest* outbreak decimated many cattle herds. This was a permutation on the historic method of restocking, which involved accepting trinkets for ivory or the right to pass through. The Karamojong also bartered ivory and slaves for guns with the Abyssinian traders over 100 years ago. As ivory became scarce, more guns were traded and utilized to increase cattle numbers by raiding the Turkana in Kenya (Muhereza, 2002).

Firearms first became plentiful in the area when the Karamojong raided the automatic weapons stores of Idi Amin's fleeing army in 1979. This increased prevalence of firearms in the region has intensified competition for natural resources among the indigenous population as well as with neighboring areas.

The easy availability of small arms has also diluted the historically high levels of creativity associated with natural resource management (NRM). NRM innovations peaked during the famine of 1980, but rather than development of new water capturing techniques or discovery of new hunger foods, but these innovations involved rather use of newly acquired guns to steal food stores and raid cattle from neighboring areas.

As innovative indigenous approaches to NRM have decreased over the last 25 years, security innovations have steadily increased. These include ideas for protection against neighbors and army as well as approaches to forcibly acquire more cattle and food. The shift of focus to security, rather NRM, has greatly stressed Karamoja's environment, livestock, people, and their traditional IK systems. One notable example can be seen in the increased efforts by the indigenous people to cut down trees and bush for both security and livelihood, which have caused dramatic environmental degradation.

The key IK practice in Karamoja is ethnoveterinary knowledge. Ethnoveterinary knowledge (EVK) refers to people's knowledge, skills, practices, and beliefs about the care of their animals (MCCORKLE, 1986). This includes a variety of different treatments: store-bought, home made, veterinarian prescribed, or healer prepared. Most of the Karamojong EVK is plant-based and thus is a vital part of NRM.

As the Karamojong are heavily dependent on cattle for subsistence and cultural pride, methods of EVK are critical for both personal and livestock health. The written EVK in Karamoja is limited. In 1998, following the request of Bokora Livestock Initiative (BOLI), a number of MANYATTAS (a collection of ten to 30 huts, forming a local community or village) were visited in the savanna lands of Bokora County (see Figure 1) to investigate the indigenous veterinary knowledge base. BOLI is a cooperative group of three non-governmental organizations (NGOs) working locally in Bokora, including Lutheran World Federation (LWF), Church of Uganda's Livestock Extension Programme (LEP), and the Christian International Peace Service (CHIPS). This investigation was done in order to integrate local knowledge with external veterinary practices within BOLI's animal health trainings.

It is becoming increasingly clear that for most traditional Africans, adoption of a new technology does not imply abandoning what they have been already doing or believing. Adoption means, therefore, doing both things side by side. It is a question of survival in a diverse and risk-prone environment. Strategies for modernisation, by means of stimulating introduction of new innovations from outside, could be replaced by strategies of endogenous development, 'development from within' (Haverkort, 2002).

This following study was conducted in Moroto and Nakapiripirit districts (see Figure 1) of Karamoja with the aim to preserve, promote, and protect the Karamojong EVK. The specific objectives of this study were to use participatory methods to document EVK, and to create local infrastructure to endogenously develop ways to preserve, promote and protect local EVK. It is expected that this information will help to increase sharing of IK and conservation and protection of natural resources, particularly medicinal plants; and to increase interest in EVK among both the Karamojong and external parties.

METHODS

Fieldwork data was collected through an ethnographic study by the first author, who lived in Karamoja from 1998 to 2004. During her stay within the community she participated fully in the community life, including her traditional-style marriage in her home village in Bokora in 2004. Activities performed during the ethnographic field study included documentation of diseases, preventions and treatments (traditional/indigenous therapeutic uses of plants or animals, specific contexts of use, preparation, dosage, and route of administration), seasonal calendars, traditional proverbs, personal involvement of cultural celebrations, and so on. An additional key activity was collaboration with the community to develop medical products using local ethnoveterinary knowledge.

Throughout the ethnography, the overall approach and attitude was one of immersion and enculturation, mimicking the 6th century philosophy of Laotzu:

Go to the people. Live with them. Learn from them. Love them. Start with what they know. Build with what they have. But with the best leaders, when the work is done, the task accomplished, the people will say "We have done this ourselves." (Mitchell, 2006)

Starting in May 1998, groups of elders and local leaders were interviewed by a team from Christian Veterinary Mission /World Concern (CVM/WC), LWF and /or LEP. Over a five-month period, 16 MANYATTAS were visited and 201 people were interviewed to identify local remedies. These remedies were then ranked according to perceived treatment efficacy, endemicity of the treated disease, and availability of alternative medications, and three of the most significant remedies in the region were selected. We then selected nine additional remedies with which to pursue further investigation and promotion, based on their high potential for uses within the area (Gradé 1998).

During the ethnography, Participatory Rural Appraisal (PRA) and Participatory Action Research (PAR) techniques were employed. The PRA techniques included semi-structured interviews with individuals (n=378), key informants (n=101), groups (n=30) and focus groups (n=12). Other techniques included direct observation, and the scoring and ranking according to the confidence of treatment efficacy and endemicity of disease. In addition, we held PAR field trials, training of training sessions, and exchange visits. Exchange visit included the healers from Pian visiting neighboring Bokora to the southeast (see Figure 1) and vice versa twice annually. As relationships were built, the healers informally visited one another without the initiative of sponsoring NGO, KACHEP, or the healers associations. Trips were also organized for healers to cattle-keeping areas of south-western Uganda and Kenya, and healers from outside Karamoja and Uganda were invited to Karamojong joint healers' workshops.

After the initial study, PAR and PRA techniques were further employed to validate and develop select EVK. Products were selected for this further development based on the potential to control a high-impact disease in Karamoja, and the potential for micro-enterprise.

As the occurrence of armed cattle raiding and road ambushes increased in the project area, it became impossible to spend time in the MANYATTAS to interview and many those to be interviewed were affected by raids, illness, or their own death. Data collection was also complicated by the tendency to hold on to one's knowledge and not freely share it out. This was lessened as the author became more acculturated and as trust was built.

RESULTS

Three main results will be laid out: institutions built (including collaborators and activities), conservation of plants (including medicinal plants domesticated) and knowledge sharing (including approach, impact, and self-sufficiency).

Institutions built

Within the course of the ethnography, four organizations with the common mission to preserve, promote, and protect EVK were formed and registered in Karamoja: Karamoja Ethnoveterinary Information Network (KEVIN), Bokora Traditional Livestock Healers Association (BTLHA) and Pian Traditional Livestock Healers Association (PTLHA), and Karamoja Christian Ethnoveterinary Program (KACHEP). In August 2003, KEVIN, PTLHA and BTLHA were registered in Kampala, under the Registrar of Companies and Documents. The constitution development was a participative process with all stakeholders.

KEVIN originated from a three-day EVK sharing workshop held in Amaler, Nakapiripirit District (July 1999). The workshop consisted of stakeholders from the region who assembled to share case studies and best practices on livestock husbandry and disease prevention and cure. A unique component of this workshop was that all participants paid their expenses for the workshop; in most gatherings of this type, the organizer not only pays for the transport, lodging, food and training materials, but also gives allowances. Another output of this workshop, separate from the creation of KEVIN, was the creation of a network to promote a safe environment and a forum for continuous sharing of ways to preserve, promote, and protect EVK in Karamoja.

Membership to KEVIN is open to all government organizations and NGOs in Karamoja involved in livestock. Members include District Veterinary Officers (DVOs) and Veterinary Officers (VOs) from Moroto and Nakapiripirit and the community-based organizations (CBOs) and NGOs listed below.

Table 1

CBO or NGO	Area of Operation
Bokora Traditional Livestock Healers Association (BTHLA)	Bokora
Pian Traditional Livestock Healers Association (PTHLA)	Pian

Karamoja Christian Ethnoveterinary Program (KACHEP)	Bokora and Pian
Karamoja Ethnoveterinary Information Network (KEVIN)	Bokora, Dodoth, Jie, Matheniko, Pian, Pokot, and Tepeth
Bokora Zonal Integrated Development Program (BOZIDEP [formerly LEP])	Bokora
Christian International Peace Service (CHIPS)	Bokora and Teso
Happy Cow Project (HCP)	Bokora, Dodoth, Jie, Matheniko, Pian, Pokot, and Tepeth
Karamoja Agro-pastoral Development Program (KADP [formerly LWF])	Bokora, Dodoth, Jie, Matheniko, Pian, Pokot, and Tepeth
Karamoja Projects Implementation Unit (KPIU)	at the district level in $\frac{3}{4}$ of Karamoja districts
Service Volunteer International (SVI)	Bokora and Pian

The Bokora healers first gathered while the author was cataloguing EVK of Bokora in the middle of 1998. The Pian group first gathered in the KRAALS, migratory cattle camps, in December 1999. In 2000, both associations began meeting regularly, 5-11 times a year.

BTLHA and PTHLA have the same mission:

1. to strive to see the agro-pastoral people of Karamoja utilize the abundant local herbs and their wealth of indigenous knowledge to re-establish themselves into a sustainable agro-pastoral society.
2. to be committed to reduction of poverty, improved health of livestock and their owners, protection of environment, peaceful resolution of conflicts and to build a life worth of the human dignity for all; where God will be a guiding and dictating principle. (BTLHA and PTLHA Constitution)

BTLHA and PTLHA members performed scoring and ranking of traditional medicines for promotion as best practices in their communities. The traditional livestock healers (TLHs) promote the best practices as do the KEVIN members in communities throughout Karamoja. Over 87 association workshops have been held in Karamoja

Membership to both BTLHA and PTLHA is open to TLHs living in Bokora and Pian respectively, and other individuals and organization that share the TLHAs' mission may also subscribe. The TLHs were identified by opinion leaders in the community. The healers themselves identified other local experts and invited them to their THLA gatherings, workshops, and field trips. Initially those selected were older men, but as the association grew, younger men and women became interested, invited, and joined.

The Bokora TLH has grown from 12 members at the first meeting in 1998 to 50 subscribed members. After the Pian TLHs first met in the KRAALS, ten core healers continued to meet with the EVK project staff and other KEVIN members, at rotating locations, either near one of their communities (MANYATTAS) or near the KRAALS depending on the season. The Pian membership grew to 22 then dropped down, but has ballooned to 44 over the last two years.

The ethnoveterinary NGO, KACHEP, was registered as a local NGO by the NGO Board in June, 2004. It began as an EVK project with an international NGO ‘World Concern-Africa’ receiving its funding through CVM. The EVK project had been managed by the first author, but now KACHEP and all its programs is run by a core staff of her former assistants, who are all indigenous people. Like the above three organizations, it seeks to preserve, promote and protect EVK in Karamoja, through the research and development aspects of EVK as well as local capacity building of the TLHAs.

Conservation of Plants

One of the components of preservation and protection of EVK is the conservation of medicinal plants. In the past there was a clan of women, *Ngiyepan*, who protected the trees.

“When these women were active, we had plenty of rains and the tall (tree) shrines were well cared for.” Nalem
Rose, Pian traditional healer

Although tree planting is not a component of the local culture, the TLHs have promoted agro-forestry and thus EVK in a variety of ways.

In the recent past there has been increased destruction of woody vegetation by the indigenous people for both security and livelihood. Fortunately, through the direction of KACHEP and the networks of Bokora and Pian TLHAs, more than 70 communities are involved in efforts to conserve medicinal trees through agroforestry schemes. They also teach family members and neighbors about conservation and sustainable harvesting techniques.

Agro-forestry has focused on the domestication of 25 wild species of indigenous Karamojong plants, coupled with a few exotic trees (Table 2). The wild species were selected by TLHs and community members, based on their confidence that the species treated endemic diseases in Karamoja members were most (Martin, 1996). These species were then evaluated for their economic value for the local market.

For example, because internal and external parasites were identified as key problems and western medications – although widely available in economically richer areas – are not locally available, we focused on remedies against parasites. This fulfilled two significant criteria: 1) that it would be/continue to be a useful product in Karamoja, 2) that there should be low concern of biopiracy or extensive quality control of people external to Karamoja. Other promoted plants treat wounds, snake bites, and retained placentas. There are many tick-borne diseases endemic to the area, but treatment of these diseases is not

very efficacious and quite expensive. Stakeholders chose instead to focus on prevention of these diseases using IK medications and techniques to keep the tick load low and increase livestock's resistance to tick-borne disease.

Forty-five communities have backyard pharmacies containing at least 12 different indigenous and two exotic medicinal species (Table 2). Fifty communities have living fences either around their homes or their gardens. The fences can either be medicinal, fruit-producing, or protective. Regardless of the plant used, they all reduce the cutting of thorny bushes, which is commonly done to aid in security and all help with sun and wind protection.

Forty communities have put up production woodlots of one to two acres. These are filled with at least 15 different species slow growing indigenous medicinal trees. Each lot has 60 to 200 trees in total.

At least 12 communities have prepared nursery beds of medicinal, fruit, and general-purpose tree seedlings. The indigenous seedlings were grown from hand-collected seeds from the bush. Three medicinal trees (neem, *Tephrosia* and *Moringa*) are not indigenous, but have already been domesticated in Karamoja and do not appear to be damaging to the local environment. The exotic fruit trees (guava, papaya, and custard apple) planted are drought-resistant and have been cultivated in Karamoja for at least 50 years at Christian Church missions.

Table 2

EPEDERU	<i>Tamarindus indica</i>	JERIMAN	<i>Euphorbia bongensis</i>
EKALIE	<i>Grewia mollis</i>	EKWAKWA	NI
EKAPANGITENG	<i>Albizia anthelmintica</i>	EPONGAE	<i>Grewia villosa</i>
ECUCUKWA	<i>Aloe sp.</i>	EMINIT	<i>Acacia gerradii</i>
ABUKUT	<i>Sansaveria sp.</i>	EYELEL	<i>Acacia drepanolobrium</i>
ABWACH	<i>Warburgia ugandensis</i>	EYELEL	<i>Acacia seyel</i>
EWALONGOR	<i>Acacia seiberiana</i>	EKORETE	<i>Balanites aegyptiaca</i>
EKERE	<i>Harrisonia abyssinica</i>	EKADOLIA	<i>Capparii tomentosa</i>
EKADELI	<i>Commiphora habessinica</i>	ELAMORU	<i>Stenoganotanaenia araliacea</i>
EBUTO	<i>Neorautanenia mitis</i>	EDAPAL	<i>Opuntia cochenillifera</i>
EPAIPAI	<i>Piliostigma thronningii</i>	EKADOKODOI	<i>Acacia senegal</i>
LOKILE	<i>Synadenium grantii</i>	Fish Bean	<i>Tephrosia vogelii</i>
ELIGOI	<i>Kleinia odora</i>	Kei-apple	<i>Dovyalis caffra</i>

Neem	<i>Azadirachta indica</i>	Moringa	<i>Moringa oleifera</i>
Pawpaw	<i>Carica papaya</i>	Guava	<i>Psidium guajava</i>
Custard Apple	<i>Annona sp.</i>	Pomegranate	<i>Punica granatum</i>

According to KACHEP's annual 2005 field report, there are more than 100,000 medicinal, fruit and living fencing trees growing around the 70 TLH communities throughout Pian and Bokora.

A 28 year-old Pian healer, Augustino, shared, *"Our cows' milk yield has increased and people are eating a more balanced diet from the cows' milk, our new fruits, and Moringa leaves, ever since our MANYATTA put up a backyard pharmacy,"*

Knowledge Sharing

Four primary schools in the area have created EVK clubs and established medicinal plant demonstration gardens. TLHAs have met at these schools for their regular workshops, which teachers and youth are also encouraged to attend. Within these schools, students are encouraged to preserve, promote, and protect IK in their home communities.

A Tororo medical student said his teachers used to mock the slow students by telling them, *"don't be like the Karamojong and get left behind!"* A teacher based in Bokora from Teso said, *"I never thought the Karamojong knew so much. Now I use their EVK for my poultry and have taught my family outside Karamoja about some treatments."*

At least once a year since 2000, the two THLAs come together for a joint healer's workshop. Two exchange visits have taken place, one in which 28 Karamojong went to south-western Uganda in the cattle corridor of the Ankole tribe, and one in which 12 TLH and project staff visited Samburu and Turkana healers of Kenya. Kenyan healers later attended a Karamojong joint healer's workshop, which was organized through KACHEP

Dengel Lino, TH of Matany said, *"We used to share food and knowledge only with our family, but now I feel comfortable sharing with other healers from Pian and Kenya. It has helped me with my cattle."*

The knowledge sharing focus goes out to association members and they in turn share with other healers, NGOs and neighbors. They are committed to promote, protect and preserve Karamojong EVK. They decided to focus on agroforestry schemes and the prevention of endemic diseases of Karamoja. Significant endemic diseases originate from intestinal parasites and ticks (Anaplasmosis, East Coast Fever, Babesiosis and heartwater). Unfortunately, allopathic medicines against tick-borne diseases are not very efficacious or inexpensive. Therefore, the focus remains on prevention vs. cure. The Karamojong

have multiple ways to keep the tick load low and increase livestock's resistance to tick-borne disease.

For example, they could hand pluck the ticks, but they have all but stopped this practice after the colonist government innovation of cattle dips and modern acaracides. A few problems resulted by this well-meaning innovation: accidental poisonings of people, limited resources to purchase medicines leading to increased strain on poverty level, and third, when properly used (according to label), the tick load is non-existent, which can lead to decreased resistance to tick related diseases.

The TLHs advocate keeping tick load at minimal levels and then having two to three medicinal plants available to treat the animal early in the disease process before the blood parasite infiltrates the entire circulatory system. . Pian had been using one of the three plants against ticks, Bokora another and Turkana a third. Now the knowledge is shared, so all three tribes benefit. They also promote slaughtering the sick animal before it loses too much condition

Impacts of shared knowledge

In 2001, Loduk Joachim, one of the Pian traditional healers, escaped being shot at close range when an opposing Bokora warrior recognized him as a healer whom earlier taught him about remedy that cured his prize bull.

The KEVIN network indicates that many other communities have increased EVK.

Four member NGOs, (BOZIDEP, CHIPS, KACHEP and KADP) have agro forestry schemes, two NGOs (BOZIDEP and KACHEP) are involved in EVK research and development, and four (BOZIDEP, HCP, KADP and SVI) incorporate EVK in their CAHW trainings.

Self-sufficiency

Those interviewed in were hard pressed to remember any positive innovations that came from outside efforts during their lifetime or their parents. They could remember that they were more trees and that there was more peace. They remembered that they didn't have a lot of cows, but the food was enough, they recalled the strength in the culture and the respect they had for they parents and elders. A few remembered the valley dams that the colonists put it, but only one is working today. Many boreholes have been built, but it seems there was more water, rain and foods before all the wells were dug.

A Bokora elder proudly explained that even though Karamoja doesn't have "*powerful hospitals, the limited access of 'modern medicines' has allowed us to greatly utilize our ancestor's medicine,*" and this has further encouraged them to develop other approaches to support the life of their family and their livestock. For example, in the times of Amin, when there was no soap, "*we used EPONGAE for soap and EDAPAL for sugar*" (Agan

Joseph, BTHLA). Even now, “*we carry our own stools with us, so we never have to ask a host to find us a chair, we are always equipped*” (Longok Anthony, KACHEP).

A farmer-to-farmer group in Matheniko advocates natural pesticides to prevent caterpillars from decimating their gardens (Louse Simon Peter, KADP).

DISCUSSION AND CONCLUSIONS

With the advent of a viable IK network in Karamoja, the following has been observed:

- Increased conservation. Trees have been planted with community ownership, including hand-selection of the best seeds. Numerous workshops, at least four per year, take place to share on conservation and harvesting techniques. Twenty-five indigenous tree species have been domesticated, over 100,000 trees planted, and thousands of seedlings are growing in member nurseries to be planted in the spring. There is increased interest in indigenous tree species outside our network including gum arabica, shea butter, and amarula trees. This fulfills the objective of the four EVK organizations: preservation and protection of medicinal trees.
- Increased interest. More members are joining the TLHAs and even school children are keen to learn. All NGOs in Karamoja are members of KEVIN. Healer associations’ membership has grown, from 12 in 1998 to 94 in 2006, even without the influence of an expatriate which may bring the hope of money or gain. This interest was evident in 1999, when individuals and organizations not only unanimously attended, but also paid for Karamoja’s first EVK workshop. This fulfills the Karamojong EVK promotion objective.
- Increased sharing. Whereas in the past there would be hesitation to share outside one’s social circle, now there are open discussions between schooled and unschooled, between Pian and Bokora, between school children and their parents, and even outside Karamoja and Uganda. Over 87 workshops have been held. This fulfills the objective of promotion and protection of the EVK.

This increased conservation, interest and sharing has been successful because it is an endogenous movement from within, rather than exogenous or from the outside. The indigenous knowledge of a people is critical for many reasons, but it appears that the endogenous development approach to using IK to encourage other areas of growth has great potential. Since the indigenous people were the ones directing the process from day one, and because EVK is part of their culture, they know how to continue themselves, and we hope that they will.

In Karamoja, as in most cultures, as healthy relationships are fostered, trust is built. This trust leads to open doors to sharing. As these relationships continue, more trust is built between stakeholders. The observed participatory cycle is illustrated in Figure 2:

Figure 2

Knowledge sharing multiplied at monthly gatherings and annually, as healers from two to five tribes come together to share case stories and learn from one another. This sharing also leads to increased respect among indigenous people for their culture and for one another. Since knowledge of healing animals is historically shared only with close friends and neighbors, the blanket of hospitality spread out further. Gathering to share knowledge necessarily involves sharing food and resources as well. In the culture of Karamoja, after two people have shared a meal together, they are like brothers and cannot harm one another. This directly decreases fighting and raiding and promotes peace.

Sharing of IK increases the number of people using IK and so more medicinal plants are grown, protected, and utilized. The increase of IK embraces the culture and its approach to peace, also leading to decreased raiding, fighting, and ambushing. More peace leads to more sharing, and the cycle continues. Therefore, increasing IK and availability of medicinal plants benefits not just the livestock and people dependent upon them, but also the peace and rest in the region.

The above sharing cycle has increased the respect and dialogue between antagonistic groups, within families, clans, tribes, and cross-border neighbors. Their interactions have encouraged others to preserve, promote, and protect local IK. We conclude that when people gather to share EVK, they develop trust and this leads to increased security.

We suggest that this same process can help them with the impending transition around them. The government's current approach is to change (break) the Karamojong by removing their guns and cows and bringing in other livelihoods. The cycle of endogenous development could equip the Karamojong with their own cultural resources to enable them to adopt and integrate old and new, internal and external influences, rather than abandoning their culture and getting lost in a 'cultural limbo' as they slowly and painfully try to work through the inevitable change of globalization. The Karamojong people could rely on their own cultural innovations, utilizing their traditionally dynamic system that has taken the back seat to external ideas from government, religious organizations, and NGOs as they try to 'help' or 'modernize' the Karamojong.

As Haverkort (2002) said "It is a question of survival in a diverse and risk-prone environment. Strategies for modernization, by means of stimulating introduction of new innovations from outside, could be replaced by strategies of 'development from within' endogenous development". Adoption of modernization does not mean that the Karamojong need to abandon their EVK, but rather that there needs to be more investigation into fusion of the local IK and cultural system and modernization and development; not to rely upon external innovations of technology but to use the system of the culture and inject it with other external ideas. This work needs to involve EVK as the cow is central to their culture.

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Figure 1



Figure 2

