

Community-based rangeland management in Shompole and Olkiramatian group ranches, Kenya

Taking successes in land restoration to scale
project



**RESEARCH
PROGRAM ON
Livestock**

ILRI PROJECT REPORT



Community-based rangeland management in Shompole and Olkiramatian group ranches, Kenya

Taking successes in land restoration to scale project

Enoch Ontiri* and Lance W. Robinson†

*University of Exeter, UK

†International Livestock Research Institute

December 2017

©2017 International Livestock Research Institute (ILRI)

ILRI thanks all donors and organizations which globally support its work through their contributions to the [CGIAR system](#)



This publication is copyrighted by the International Livestock Research Institute (ILRI). It is licensed for use under the Creative Commons Attribution 4.0 International Licence. To view this licence, visit <https://creativecommons.org/licenses/by/4.0>.

Unless otherwise noted, you are free to share (copy and redistribute the material in any medium or format), adapt (remix, transform, and build upon the material) for any purpose, even commercially, under the following conditions:



ATTRIBUTION. The work must be attributed, but not in any way that suggests endorsement by ILRI or the author(s).

NOTICE:

For any reuse or distribution, the licence terms of this work must be made clear to others.

Any of the above conditions can be waived if permission is obtained from the copyright holder.

Nothing in this licence impairs or restricts the author's moral rights.

Fair dealing and other rights are in no way affected by the above.

The parts used must not misrepresent the meaning of the publication.

ILRI would appreciate being sent a copy of any materials in which text, photos etc. have been used.

Editing, design and layout—ILRI Editorial and Publishing Services, Addis Ababa, Ethiopia.

Cover photo—Enoch Ontiri/University of Exeter/International Livestock Research Institute

ISBN: 92-9146-552-6

Citation: Ontiri, E. and Robinson, L.W. 2018. *Community-based rangeland management in Shompole and Olkiramatian group ranches, Kenya: Taking successes in land restoration to scale project*. ILRI Project Report. Nairobi, Kenya: ILRI.

Patron: Professor Peter C Doherty AC, FAA, FRS

Animal scientist, Nobel Prize Laureate for Physiology or Medicine—1996

Box 30709, Nairobi 00100 Kenya

Phone +254 20 422 3000

Fax +254 20 422 3001

Email ilri-kenya@cgiar.org

ilri.org

better lives through livestock

ILRI is a CGIAR research centre

Box 5689, Addis Ababa, Ethiopia

Phone +251 11 617 2000

Fax +251 11 667 6923

Email ilri-ethiopia@cgiar.org

ILRI has offices in East Africa • South Asia • Southeast and East Asia • Southern Africa • West Africa

Contents

Tables	v
Acknowledgements and disclaimer	vi
Acronyms	vii
A. Introduction	1
Case studies on community-based rangeland management	1
The southern Kenyan rangelands	1
B. Methods	3
C. Basic information on the case	4
Overview	4
Summary of case	4
D. Characterization of the social, economic and biophysical context	8
Issues and challenges for climate change adaptation	8
Biophysical context	9
Demography, livelihoods and social structure	10
Governance and tenure	10
Neighbouring communities and inter-community relations	11
Enabling and hindering factors in the context	11
E. Characterization of the approach to community-based rangeland management	13
Overview	13
Methods	15
Authority and governance powers	17
Management	18
Spatial organization, scales and levels	18
F. Outcomes and impacts	19
G. Discussion	20
References	21
Annexe: Key informant interview guide	22

Tables

Table 1: List of interviews and focus group discussions	3
Table 2: Social, economic and biophysical context—summary	8
Table 3: Characterization of the approach—summary	13
Table 4: Involvement of local community members	16

Acknowledgements and disclaimer

We wish to thank the South Rift Association of Land Owners (SORALO), the leadership of Shompole and Olkiramatian communities, and the group ranch committee (GRC) for allowing us to conduct the research in the community. Special thanks go to the African Conservation Centre (ACC) research team on the ground for support during initial contact. Finally, we thank the field scouts who facilitated the data collection process by acting as guides and translators.

This work was undertaken as a part of the project, Restoration of degraded land for food security and poverty reduction in East Africa and the Sahel: Taking successes in land restoration to scale. The project is led by the World Agroforestry Centre (ICRAF) and funded by the International Fund for Agricultural Development (IFAD) with support from the European Union. The International Livestock Research Institute's (ILRI) work in the project is also supported by the CGIAR Research Program on Livestock. CGIAR is a global partnership that unites organizations engaged in research for a food-secure future.

This report has not gone through peer-review. The opinions expressed here belong to the authors and do not necessarily reflect those of ICRAF, IFAD, ILRI or the CGIAR Research Program on Livestock.

Acronyms

ACC	African Conservation Centre
GRC	Group ranch committee
ICRAF	World Agroforestry Centre
IFAD	International Fund for Agricultural Development
ILRI	International Livestock Research Institute
KWS	Kenya Wildlife Service
LRC	Lale'enok Resource Centre
NGO	Non-governmental organization
NGAO	National Government Administration and Field Services, Kenya
SORALO	Southern Rift Association of Land Owners

A. Introduction

Case studies on community-based rangeland management

This case study was carried out as part of the Restoration of degraded land for food security and poverty reduction in East Africa and the Sahel: Taking successes in land restoration to scale project. The work of the International Livestock Research Institute (ILRI) on the project focuses on rangeland management as an intervention option for management of land that avoids degradation, restores land where it has already been degraded and improves productivity. Part of ILRI's research effort on the project is focused on understanding what we refer to as 'community-based rangeland management' as an option or approach. Community-based rangeland management can be considered to be a subset of the community-based natural resource management approach adapted and applied to rangeland settings. It is undertaken in varying ways and with various labels. Despite differences in labels, however, there is a core set of characteristics that are common, including participatory approaches, the creation of a new or strengthening of an already existing community organization at a medium to large rangeland scale (i.e. larger than 'village level'), and a fairly common suite of technical practices that a community committee implements and enforces. On the other hand, there can be important differences in the details of how the approach is implemented, and also in the social and biophysical context in which it is implemented. This report summarizes findings from two cases from southern Kenya: two adjacent group ranches, Shompole and Olkiramatian, along with the activities of two agencies supporting them in their rangeland management activities, the South Rift Association of Land Owners (SORALO) and the African Conservation Centre (ACC).

The southern Kenyan rangelands

A large majority of land held under collective tenure regimes in the Horn of Africa is located in areas characterised by arid and semi-arid conditions with high temperatures and low and variable rainfall. These lands occupy vast territories and are mainly inhabited by pastoral communities who practise extensive livestock production systems that are well-suited to these conditions. Land tenure plays a decisive role in these systems, helping to determine not only the feasibility of various livestock keeping practices, but also exerting a profound influence on the social, economic and political status of pastoral communities.

Tenure and management systems have been disrupted at various times over the years, however. In the 1890s, drought and the rinderpest infestations devastated livestock numbers. The colonial administration assumed the pastoral practices of the Maasai in southern Kenya were backward and in need of change. A series of processes led to the Maasai in the rangelands of Kenya losing most of their land, and after independence, they did not regain most of it. Land management regulations that continue to affect the current situation in pastoral areas include the Swynnerton Plan of 1954 (Swynnerton 1955). The plan proposed that:

1. The numbers of resident stock must be limited to the carrying capacity of the land.
2. There must be assured and regular outlets which will absorb all excess stock.

3. An adequate system of permanent water supplies must be constructed.
4. Grazing must be controlled and managed at a productive level and owners must maintain their grazing area.
5. Where access to grazing is denied by tsetse fly, provided such grazing will be controlled, the tsetse must be eradicated.

Based on this plan, group ranches were presented as a way of improving the productivity of livestock within the rangelands. Over the years, many established group ranches collapsed and land has been further subdivided amongst individuals. The southern Kenya group ranches, numbering about 15, remained intact, but some face challenges keeping community land as a single unit. In the face of environmental change challenges, communities that are able to adapt need to improve and institute effective institutional and governance frameworks. Adaptation is a collective endeavour and therefore communities that are held together by common resources may be assumed to have greater capacity to adapt. Securing effective community organizations, institutions and management practices are key components of this capacity.

The southern rangelands of Kenya are a subset of a wider ecological and socio-economic landscape. The Maasai community that live here have social networks with communities in the rangelands in northern Kenya, Narok county and northern Tanzania. Mobility of livestock is a key coping strategy for the community and they often migrate to Tanzania and other parts of Kenya. Other communities living adjacent or close to this area also bring in the livestock during the dry seasons. Biological resources flow into and out of the area. It is a migratory corridor for wildebeest, zebra and antelope that move between Amboseli, Nairobi National Park and the Maasai Mara. Lake Magadi is an important destination or stopover point during flamingo migration to Lake Natron and other lakes in Kenya (Nakuru and Bogoria). Activities taking place in other places such as Narok affect the water flow on the Ewaso Nyiro River.

Stretching from the Shompole hills on the southern end to the Olkiramatian escarpment on the northern side, the wider landscape includes the neighbouring communities of Keekonyokie, Purko, Ildamat and Matapato. The rangeland is semi-arid, inhabited by one tribal group, the Maasai. The group has been divided into two administrative units, Shompole and Olkiramatian, each of them being equivalent to the group ranch.

The smallest and the only functional unit as far as decision-making is concerned is the group ranch itself. Major decisions are made at the group ranch level. The biophysical classification of the rangeland includes all those biomes found within and along the Ewaso Nyiro River, the shrubs and thickets between the Magadi Lake and the Nguruman Escarpment in the north and the Shompole hills in the south. There are swamps, like the Shompole swamp, which define the extent of the wet season grazing areas. The Shompole hills and Nguruman Escarpment provide the best areas for dry season grazing and wildlife conservation. Energy and other ecological resources flow within these biomes cyclically, hence forming the biophysical extent of the rangeland. During adverse conditions, wildlife and the community livestock move outside the administrative boundaries and even to Tanzania.

B. Methods

The research employed mixed methods in collecting qualitative data. Two workshops were conducted to identify key issues and strategies employed by the community and development agencies to devise an intervention. The workshops took place at the community level involving researchers from ILRI and community leaders. This was followed by nine (9) key informant interviews and twelve (12) focus group discussions in the community. An interview guide was designed and used to moderate focus group discussions and lead discussions during key informant interviews. The interviews were recorded as voice and later transcribed to text.

Author conducting an interview



Photo credit: University of Exeter, International Livestock

Various sources of secondary data were reviewed including project reports, published journal articles and online materials.

Table 1: List of interviews and focus group discussions

Location	Interview
Lale'enok	Focus group discussions and key informants (former women's group leader)
Nguruman	Focus group discussions and key informant (assistant chief)
Oldonyokie	Focus group discussions and key informant
Oloika	Two focus group discussions and key informants
Shompole market	Six focus group discussions and key informants

Analysis was guided by a protocol developed by ILRI for providing a structured characterization of community-based rangeland management (Robinson et al. In press). Most of the variables in the protocol are categorical, and straightforward and factual in nature. Qualitative and exploratory data were also collected, both from primary and secondary sources.

C. Basic information on the case

Overview

The communities we studied are located in Magadi subcounty in the Kajiado West constituency of Kajiado county. Magadi is rich in largely near-unspoiled natural resources including forests, grassy plains, the Ewaso Nyiro River, unique volcanic landscapes including the alkaline Lake Magadi and the Nguruman Escarpment.

The Il Lodokilani subgroup of the larger Maasai community lives in Shompole and Olkiramatian group ranches. The community defines itself (and their purpose) based on economic activities, cultural or customary institutions and a sense of belonging to the landscape. They derive their livelihoods from extraction of these natural resources mainly through livestock production. The community-based grouping or organization in this division is the group ranch. There are four main group ranches in Magadi including Olkeri, Ol Donyo Nyoike, Shompole and Olkiramatian.

The Olkiramatian group ranch in Kajiado county occupies an area of 24,000 ha. The main livelihoods are a combination of livestock keeping, tourism and crop farming activities. Shompole group ranch, also in Kajiado county and adjacent to Olkiramatian, covers 62,700 ha. In both, the land, through the group ranch mechanism, is owned by pastoralists.

Summary of case

I. General information

Ia. Development agent(s).

The two communities work with a number of development agents but primarily with SORALO and ACC. SORALO is a formally registered trust that was created in 2004 in order to provide a legitimate body to represent the needs of land owners and push for joint management of 15 group ranches which form an ecological bridge between the famous Amboseli and Maasai Mara National Reserves. ACC is a conservation non-governmental organisation (NGO) that works with local communities in Eastern Africa, mainly Kenya and Tanzania, to institute community-based natural resources management. Their approach is informed by evidence gathered from their research.

Ib. Name of program(s)/project(s)

There are various projects and programs being implemented in the rangeland. Most of the projects were initiated to achieve a common goal of community-based natural resources management in Shompole and Olkiramatian group ranches.

Ic. Terminology used by the development agent to describe their community-based rangeland management approach

Community-based natural resources management.

1d. Extent of the particular case (the rangeland unit)

The two cases described in this report are Shompole and Olkiramatian group ranches, which have an area of 62,700 and 24,000 ha, respectively. These group ranches are socio-ecologically connected to the 15 community group ranches that lie between the Maasai Mara and Amboseli game reserve and are all supported by SORALO.

1e. Briefly identify and describe the key community governance structures and/or processes for the case

The land is owned collectively by the group ranch members. The group ranches are run by an executive committee, the group ranch committee (GRC). The committee is composed of leaders elected by the community members. Under this committee, there are subcommittees or special tasks committees. They include the security committee, the conservation or natural resources management committee, and the investment committee. The customary institution of a council of elders also helps in providing guidance on certain issues, including dispute resolution.

The major decisions on group ranch operation are made by the community members during the annual general meetings or group gatherings. Decisions made during these group meetings are implemented or enforced by the GRCs with the help of the special program committees.

2. Specification of the approach

2a. Short description of the approach

The Shompole and Olkiramatian Maasai communities are an indigenous people who for many years organized themselves into a social unit and managed their natural resources using a customary governance system. The system included elaborate planned grazing that ensured enough pastures and water and also minimum land degradation over the seasons. The two group ranches strengthened the capacity of its community governance structures and began to engage in more rigorous implementation of seasonal grazing plans. This was based on traditional ecological knowledge and rangeland management practices. The group ranches incorporated conservation, research and joint rangeland management planning with neighbouring communities.

2b. Detailed description of the approach

Prior to implementation of the approach described here, the community was organized into a functional unit, holding their land under the customary pastoral ownership. Traditional and customary institutions guided the management of their rangelands. The apex governing body was the GRC. Committees and subcommittees, elected by the community members, ran the various group ranch affairs. The committees included the following:

- conservation area management committee
- grazing management committee.

However, the community faced a number of challenges that hindered effective management of the natural resources within their landscape (Muthuri et al. 2009). These included the following:

- poor financial management
- lack of accountability from the leaders and lack of demand for accountability from the members
- conflicting group and individual interests.

When the ACC, an NGO focused on conservation of natural resources, began its work in southern Kenya, it strived to understand the customary approaches that made the community unique. Upon studying and understanding the system, successes, challenges and aspirations, ACC supported the community to establish tourism as a way of

tapping the monetary benefits of conservation. They also advised the community on how to improve and sustain natural resources conservation and their livelihoods, and encouraged the continuation of communal land holding. Upon successful establishment of an ecotourism approach, the ACC realized there was demand for their support from the adjacent group ranches. The ACC then proposed establishment of a community-based land trust, which became SORALO, to mobilize establishment of effective institutions and governance structures that would ensure sustainability. SORALO comprises Maasai landholders in southern Kenya and employs an evidence-based approach through research to improve land management practices. SORALO promotes security of communal land tenure and simple methods of natural resources planning and management.

SORALO, with modest support from ACC, has continued to support the strengthening of community governance structures which include the creation of new subcommittees for the management of the natural resources. The subcommittees include the women's group, and the conservation, peace and investment subcommittees. They also established specific natural resources monitoring groups like the lion tracking, baboon and vegetation teams.

To minimize and overcome resource management weaknesses, the community invited the ACC to come and support them in improving their system. The community, with some help from SORALO and ACC, then worked to reinvigorate the old system and repackage it as a new approach, which includes:

- the introduction and brokering of ecotourism to provide more land use options.
- the establishment of community-based rangeland monitoring activities.
- the establishment of a constitution for the group ranch (in progress).

Several steps were taken. First, enhancement of the community's ability to strengthen the committees occurred. A more objective way of identifying and electing office holders was conducted to ensure a credible base for resource governance and building consensus among resource users. Some of the structures that existed traditionally but may have dissolved or weakened were re-established or strengthened.

ACC facilitated a participatory process for the strengthening of the bylaws or regulations of resource use within the two group ranches. Within the bylaws, the communities made provisions for holding the leaders accountable and empowering the group ranch members to demand their rights. The registration or recruitment of members was instituted and used as a way of ensuring equitable access to and use of the natural resources. Formalization of group ranch bylaws is currently ongoing. Decision-making processes were facilitated by procedure development for sharing information and apportioning responsibilities among the leadership—as decided at annual general meetings.

Based on traditional expert ecological knowledge and monitoring practices, the grazing regimes were re-assessed and a community-based rangeland monitoring process was established.

The community land was divided into four resource-use areas:

- conservation or wildlife areas
- agricultural/crop production areas
- livestock dry and wet seasons grazing areas
- human settlements

Grazing committees from both group ranches manage livestock access to certain areas, with the conservancy (grass bank) rested during the wet season, which can last up to 6 months. When grazing is permitted in the conservancy, as the dry season progresses, it is limited to an area that contains temporary settlements, called the 'buffer' zone. Livestock must then walk into the conservancy from the buffer zone to access grazing. The 'livestock rearing zone' is permanently settled and may be grazed year-round.

The Lale'enok Resource Centre (LRC) was established, together with community enterprises based on the use of natural resources. In addition, a women's group, 'Reto', was established to mobilize women's efforts in bead-making and nature-based economic activities.

2c. Country/region/locations of the specific case

Kenya, Kajiado county, Kajiado West constituency.

2d. Key dates

The group ranch system in Kenya was established under an Act of Parliament in 1968. Shompole and Olkiramatian were established in 1979.

During 2004–2005, the community invited ACC to help improve conservation and initiate ecotourism. ACC studied and understood the customary resource governance system that was in place. In 2005, based on ACC's recommendation that a local organization coordinate and provide oversight in natural resource management in the southern rangelands, SORALO was established.

In 2007, the ACC helped establish the LRC in Olkiramatian.

In 2012, the Borderlands conservation program was established in the rangeland.

Between 2012 and 2015, research programs aimed at reducing conflict between humans and wildlife, and enhancing cultural tourism were established, for example, the lion research, walking with baboons and cultural homestay programs.

D. Characterization of the social, economic and biophysical context

Issues and challenges for climate change adaptation

Table 2: Social, economic and biophysical context—summary

Dimension	Variable/characteristics	Value/comments
Biophysical	Mean annual precipitation	Shompole: 511 mm ¹ Olkiramatian: 569 mm
	Rainfall variability	Shompole: coefficient of variation (CV) = 27.9% ² Olkiramatian: CV = 26.8%
	State of rangeland condition at initiation of the intervention	The rangeland was degraded, prolonged drought existed, the grass natural seed bank was depleted and there were physical gullies due to wind and surface run-off erosion. Areas closer to seasonal water sources were degraded more than those near permanent sources of water.
Demography, livelihoods and social structure	Population density	Shompole: 29 people/km ² Olkiramatian: approx. 42 people/km ²
	Degree of competition for/pressure on land	The available pasture is not enough for the livestock and wildlife. Livestock numbers have increased recently. Water is a scarce resource except closer to the Nguruman Escarpment and Ewaso Nyiro River. Large ungulates and crop farmers are in continual conflict over the water and grazing land for wildlife.
	Ethnic hetero/homogeneity of the rangeland unit	Ethnically homogenous
	Ethnic hetero/homogeneity of the region within which the rangeland unit is situated	Ethnically homogenous
	Percentage of land within the rangeland unit under cultivation	Approx. 10 %
	Percentage of land within the region unit under cultivation	Approx. 10 %
	Predominant livelihoods	Pastoralist

¹ Calculations based on data from Thornton, P. 2014. Rainfall and rainfall variability. In: Sebastian, K. (ed), Atlas of African agriculture research and development: Revealing agriculture's place in Africa. Washington DC: International Food Policy Research Institute (IFPRI): p. 38–39. <http://dx.doi.org/10.2499/9780896298460>

² Ibid.

Dimension	Variable/characteristics	Value/comments
Governance and tenure	Type of land tenure	Secure communal
	Security of land tenure	Somewhat secure
	Is there elected local government?	No
	Strength of customary institutions for natural resource management	The main customary institution is the council of elders. The customary system is fairly strong but is not the main governing body for the management of natural resources. The council of elders is consulted in the event there is conflict over the management, access or use of the natural resources.
Neighbouring communities and inter-community relations	Extent to which other communities/rangeland units within the region also have similar community-based rangeland management and governance structures	Less than 50% of the neighbouring communities have group ranches.
	Strength of community organization in other communities/rangeland units within the region	Other SORALO member group ranches are not as organized as Shompole and Olkiramatian.
	Severity of inter-community conflict and livestock theft—describe the source(s) and nature of the conflict, if known	Theft of livestock amongst the Maasai of Shompole and Olkiramatian is not pronounced, although there are occasional reported incidences where armed robbers from Tanzania attack the communities and steal huge herds of livestock. In isolated cases, people have lost livestock during movement to dry season grazing areas during drought.

Biophysical context

The study area is situated in southern Kenya and has an altitude of 600–700m and high temperatures ranging from 18°C at night to 45°C during the day. The area is semi-arid, and rainfall is erratic and bimodal averaging 400-600 mm/yr. The mean annual rainfall in Shompole is 511 mm, and in Olkiramatian, 569 mm. The rainfall is somewhat variable with coefficients of variation in annual rainfall in Shompole and Olkiramatian of 27.9% and 26.8%, respectively (Russell et al. 2018). A perennial river, the Ewaso Nyiro, bisects the area, providing an important source of water. The area is inhabited by roughly 20,000 Maasai pastoralists and their livestock.

An escarpment is a major feature dominating the landscape

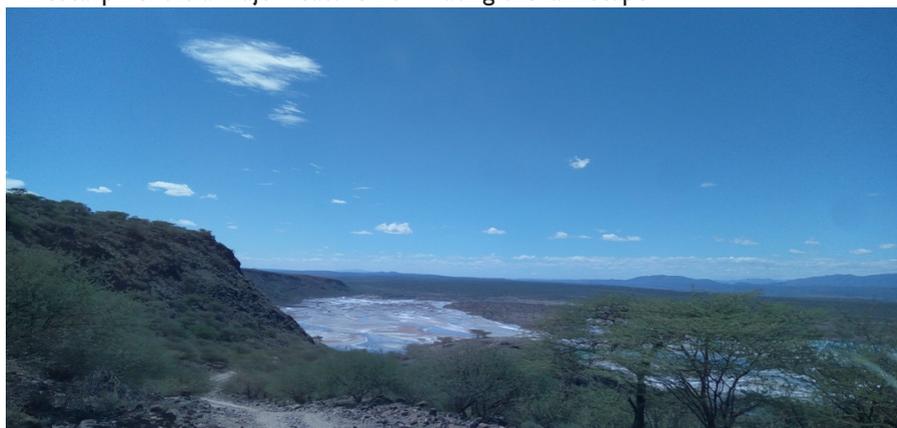


Photo credit: University of Exeter, International Livestock Research Institute: Enoch Ontiri

The area has an intact community of large herbivores (except for black rhinoceros), 21 species of carnivore and a growing population of elephants (Ahlering et al. 2012; Schuette et al. 2013). At the time when ACC began its interventions, the rangeland was degraded, with a depleted seed bank, and the emergence of gully erosion. Areas closer to seasonal water sources were degraded more than those near permanent sources of water.

Demography, livelihoods and social structure

The two group ranches are inhabited by the Maasai community, mainly of the Lodokilan clan. The community is closely knit together by their pastoral lifestyle and the Maa language. There is a small percentage of people from other communities living here who are mainly involved in crop farming or trading in the business centres. Although the membership of most group ranches includes those who have a customary claim on ownership of land, at the time of formation of the Shompole and Olkiramatian group ranches, a few families from the Kikuyu, Kamba and Luhya communities were brought in to meet the required number for the registration of a group ranch.

The main livelihood activity is pastoralism. More than 90% of the Maasai community directly depends on extensive livestock production. There are traders involved in livestock and livestock products trade, but all of them still keep their own livestock. The Shompole livestock market is a partnership between the community and the county government of Kajiado. It is situated at the border of Kenya and Tanzania, making cross-border livestock trade easy. The market brings traders from neighbouring Tanzania who form the bulk of the participants in the livestock trade.

Crop production is practised in the areas set aside for crops. The community uses water from the Nguruman Escarpment watershed to irrigate their crops. With help from the European Union and the government of Kenya, the community established an irrigation system in which water flows by gravity to the farms. Each group ranch member owns a piece of land in the crop production scheme and most of them have opened these areas for fruit and vegetable production. The food is consumed locally and some of it is sold in the local and regional markets. More than 80% of the net income from the crop production enterprises is spent in restocking livestock by the pastoralists.

There are two main lodges, one each in Shompole and Olkiramatian. Income from ecotourism is shared between the group ranches and the investors. The LRC is used for meetings and camping; visitors generate income for the women who run the centre. Some of the income from tourism is invested back into livestock production.

Community members generally believe that in the past they were putting excessive pressure on the rangeland through overstocking. There is still competition for water and space between the farmers and the large herbivores like elephants and buffalos, and this often causes conflict. Within the rangeland, livestock is freely moved around during the seasonal migrations. The customary rules govern sharing of resources even beyond the administrative boundaries of the group ranch. However, there are incidences of neighbouring communities in Tanzania stealing livestock from the Maasai of Shompole and Olkiramatian.

Governance and tenure

The decision-making and governance structure in the area has evolved. Before colonial times, pastoralists roamed the rangelands guided by customary institutions and without clear geographic boundaries. During the colonial period, a number of changes were proposed to manage the drylands, which reduced the movement of pastoralists and restricted them to regions like southern and northern Kenya. Land adjudication and registration started during this period. In independent Kenya, many changes have occurred. An act of parliament established the group ranch system in 1968 (Grandin 1991). Shompole and Olkiramatian group ranches were established in 1979. Under the group ranches government regulations, there must be a committee of elected officials and the group ranch must be registered in the district commissioner's office. The land is communally owned by the members who claim traditional land rights.

Land tenure is somewhat secure. The community members own the land communally and have a common title to it, held in trust by the county government. Group ranch borders are known and legally recognized. There are a few cases where the land has been demarcated and converted for other uses. For example, the crop production areas can easily change hands if the individuals wish. The council of elders needs to be consulted and when they are in agreement, the transfer can take place. The central government owns the oil and mineral resources; whenever such resources need to be extracted, the community will be forced into agreements that will lead to the conversion of the land to a

mining site. Oil exploration was ongoing during the time of this survey. If it is found to be economically viable, the land ownership may temporarily or permanently change hands.

The county and national government representatives also form part of the governance system. Kenya Wildlife Service (KWS) and the ward administrator represent the National and county governments, respectively. All wildlife resources are under the mandate of KWS. The ward administrator and the members of county assembly make investment decisions which mostly affect the natural resources. The National Government Administration and Field Services is represented by the chiefs and subchiefs and also contributes to decision-making.

Neighbouring communities and inter-community relations

The rangeland is part of a wider pastoral/dryland landscape in southern Kenya. Traditionally, the Maasai existed as a distinctive functional unit, but with the introduction of administrative boundaries and management units, they formed smaller groups that are still widely connected (Russell et al. 2018). The neighbouring communities include pastoralists, mainly of the Maasai tribe. In the northern part of the landscape are the Maasai clans who own the group ranches including the Keekonyokie, Matapato, Purko and Ildamat. On the Tanzanian side, they are bordered by the Ilkisonko clan who are also Maasai (Ng'ethe 1993).

The various clans continue to depend on each other and have distinctive relationships that still allow them to survive in the rangelands with changing environmental conditions, increasing human populations and ever-changing land use practices. Movement of pastoralists forms a basis of their identity definition and spatial sense of belonging. The need for this wider mobility, which is essential for livestock production, forges community linkages with the outside group ranches and within the subclans.

The neighbouring communities include Maasai from other group ranches and from northern Tanzania. There are also the members of the Sonjo ethnic group at the border of Kenya and Tanzania. The Sonjo people provide farm labour to the Olkiramatian crop farmers. The Maasai of Tanzania interact with the Shompole and Olkiramatian communities through trade in livestock, especially the Shompole livestock market. There are no serious cases of inter-community conflict with the exception of reported sporadic incidences of cattle rustling by the communities from Tanzania. Such incidences have not affected the community livelihoods and rangeland management plans in any way.

Enabling and hindering factors in the context

Enabling factors

The community is within a semi-arid area of southern Kenya which is contiguous with a wider rangeland in Narok and Amboseli. In the pre-colonial period, the area was tsetse fly infested and therefore fewer pastoralists chose to establish long-term settlements. Today, the area is still sparsely populated. In fact, the Maasai had to recruit non-Maasai community members to attain the minimum membership for registration of the group ranch.

Enabling factors include the law that established group ranches and the physical land terrain. In addition, the land was left intact for years, which contributed to the success of the intervention. The customary practices, cultural beliefs and vast traditional ecological knowledge of the community were integrated into the design and implementation of the intervention.

The Maasai are organized into a social unit that is cohesively held together by their lifestyle, culture, language and economic activity. The age set and customary governance system provide a good opportunity for an outside agent to penetrate the community.

Hindering factors

Before the intervention, the community lacked capacity to manage their resources effectively. Some of the difficulties emanated from the lack of proper communication among the members and customary leaders. The community did not demand transparency and accountability from the leaders. The customary system of respecting certain leaders (customary chiefs) was a factor that contributed to community members' trust in leadership, in spite of the lack of transparency and accountability.

Drought conditions and unreliable rainfall made it difficult to implement some activities in areas that depended on rain water. There is a particular case where land close to the LRC was ploughed and planted with *Cenchrus ciliaris* grass. The grass did not germinate, which led to the failure of the reseeding program.

E. Characterization of the approach to community-based rangeland management

Overview

Table 3: Characterization of the approach—summary

Dimension	Variable/characteristics	Value/comments
Methods used by development agent	<p>3. Methods</p> <p>3a) Community entry process and participatory activities used by the development agent</p> <p>3b) Approach to capacity building used by the development agent</p> <p>3c) Nature of incentives and business model</p> <p>3d) Types of technical rangeland management options being supported by the development agent</p> <p>3e) Advisory service</p> <p>3f) Involvement of local communities in different phases</p> <p>3g) Is monitoring and evaluation part of the approach?</p>	<p>The ACC was invited by the local community who wanted to start earning ecotourism income. At the same time, ACC wanted to understand the customary governance system that was in place. A researcher was sent to the community. The findings provided guidance in the establishment of ecotourism activities and improved management of pasture and water.</p> <p>The actual capacity building took place through strengthening the community governance mechanisms that included the various committees. The agents used participatory methods to identify the capacity needs of the community. Then, the ACC advised the community on the establishment of a local agency to continue support on the technical issues of natural resources management, which became SORALO. Individual students with capabilities to study were supported and sponsored to higher institutions of education as part of the long-term capacity building of the community.</p> <p>The community did not receive direct monetary incentives but received training in business development and management of ecotourism lodges (Loisiijo and Sampu), sale of trinkets and was assisted to establish the LRC. The livestock market in Shompole is self-established as a result of the area being used as a stopover for livestock migration from Tanzania to Loita, which encouraged livestock exchange. Currently, the group ranch collects cess tax from all business transactions.</p> <p>Rotational grazing, ecological monitoring</p> <p>Yes: strengthening the committees, ecological monitoring and business enterprises</p> <p>See Table 4 below</p> <p>Yes</p>

Dimension	Variable/characteristics	Value/comments	
Governance	4. Governance design		
	4a) Governance type: which type(s) of actors participate in decision-making in the rangeland unit's main governance structures or processes?	Communities	
	4b) What form does community representation take? Participation/representation	Representation by members	
	4c) Are there provisions for regular election of officers/representatives?	Yes	
	4d) Involvement of women, minorities and other groups	Women are involved in decision-making processes. There is one woman nominated to the GRC. The minority tribes are consulted when making decisions but do not have special representation on the committees	
	5. Basis of structures/processes in customary institutions		
	5a) The decision-making structures/ processes for the rangeland unit	Involves elders and customary institutions	
	5b) Are there any hereditary or other customary leaders who are automatically part of the leadership structure?	No	
	Authority	6. Legal mandate	
		6a) Is the main decision-making structure registered as a legal entity?	Yes
6b) Are the decision-making structures or processes of the rangeland unit recognized and given legal mandate by a legislative framework?		Yes	
7. Authority and governance powers of the rangeland unit's governance structures/ processes			
7a) What governance powers do the rangeland unit's governance structures/processes have?		Has full governance and management powers	
7b) In cases where rangeland unit's governance structures/processes have limited authority (have merely an advisory/coordination function), where instead does the bulk of authority lie?		Not applicable	
7c) Who decided on the selection of technical options to be implemented?		Mainly land users, supported by rangeland specialists	
7d) Specify on what basis decisions were made (several options are possible)		Based on the customary practices, traditional knowledge and research findings	
7e) Graduated sanctions		Yes	
7f) Conflict resolution mechanisms		Yes	
Management	8. Staffing		
	8a) Is there a secretariat (e.g. paid staff working for the community organization in an office)?	No	
	8b) Are there paid field staff (e.g. rangers, rangeland managers etc.)?	Yes	
	8c) Does the rangeland unit hire professionals (e.g. rangeland ecologists, tourism managers etc.)?	Yes	

Dimension	Variable/characteristics	Value/comments
Spatial organization, scales and levels	9. Definition of the rangeland unit	
	9a) How is/was the geographic extent of the rangeland unit defined?	Predefined
	9b) What criteria are/were used to define it?	Existing administrative unit: the group ranches
	10. Nesting and multi-level planning approach	
	10a) Are there clearly defined territories and associated institutions nested within the rangeland unit structure?	No
	10b) Is the rangeland unit formally nested within a larger structure?	No
	10c) How does resource planning at the rangeland unit level relate to planning at levels above and below?	Planning is done primarily at the rangeland unit level; little to no further planning is done at lower levels

Methods

3. Methods used by development agent

The community managed its natural resources using the customary institution, the council of elders, practising planned grazing and seasonal migration. In the face of climate change and the ever-increasing challenges to resource management, the community was looking for strategies to sustain their livelihoods and the environment. One of the potential strategies was ecotourism. The community identified the ACC, which was already undertaking natural resource management conservation in parts of Kenya, as a partner. An ACC agent conducted research by spending time in the community and performing a participatory assessment of the rangelands and the people. The objective of the research was to understand the community, their customary institutions and traditional resource management practices and the challenges they were facing. Ecological socio-economic surveys were administered in the community. Based on research, the potential for restoration and sustainability of the resources and household livelihoods were explicated.

The ACC identified the various challenges that the community and the rangeland faced and designed a strategy of reducing or mitigating these challenges, which included capacity issues in leadership, difficulties in decision-making, poor communication, lack of accountability, conflicting group and individual interests, and degradation of the resources.

Capacity building started with the training of leadership on basic tenets of effective governance. This was followed by enhancement of a process of electing leaders through a democratic process that respected the local traditions and customs. Opportunities for the youth from the community to be trained in higher education institutions were initiated.

Ecotourism as an economic activity was encouraged. Support was given to establish a community resource centre through which income could be generated. The centre hosts meetings and also accommodates guests and students at a fee. Women from the community were supported to start handicrafts enterprises; their goods are sold mainly to guests who visit the lodges in the area and the Lale'enok Resource Centre.

The local community has been involved in all phases. The customary council of elders are consulted and then organize community meetings where proposals are made, discussed and decided upon. Women and youth groups have also been involved in decision-making on particular issues.

Table 4: Involvement of local community members

Phase of the approach	Involvement of local community members					Specify who was involved and describe activities
	None	Passive	Active Payment/ external support	Interactive	Self- mobilization	
Initiation/ motivation					✓	The community invited ACC. A visiting researcher from ACC continued discussions with the community leaders. The work of the researcher partially informed the approach, but the ultimate push came from the community.
Planning			✓			The community evolved into an organized group and was determined to employ good resource practices to improve the rangelands and the lives of the people. They sought the help of ACC in strengthening their capacity to fundraise and improve community enterprises. SORALO was established to continue supporting the community in networking and conservation work.
Implementation				✓		The committee members and the individual group ranch members implement the approach. SORALO, and to a lesser extent, ACC, play advisory roles. The community members provide labour and time as their in-kind contribution. ACC helps the community raise funds for the implementation.
Monitoring/ evaluation				✓		With guidance from ACC, monitoring is done by community members. The various committees have a monitoring component in their work.
Research			✓			At the beginning, research was done by a scientist from ACC. Later in the approach, the community youth have been trained and are actively involved in research activities.

The community youth are involved in assessing the ecological status of the rangeland. There are ecological monitoring units that take wildlife (plants and animals) censuses. Community activity reports are produced regularly. The major economic activity of livestock trade is monitored by a data collection team that visits the major livestock markets (Shompole for all livestock and Olkiramatian for shoats).

Governance and management

4. Governance design

The governance structure includes the executive GRC, special programs committees, women and youth groups, central government (represented by the chiefs and subchiefs), KWS, the county government and the council of elders.

The group ranch community makes decisions during the annual general meetings or special community meetings. The GRC discusses issues, prioritizes them and then executes a plan of action. The committee is elected by the community in a generally agreed manner, which borrows from the customary provisions and the government requirements. The committee is registered with the government at county level and are recognized and appreciated by all members. The various subcommittees work with and under the supervision of the GRC leaders. The most active and more

relevant of the subcommittees are the grazing and security committees. The grazing committee monitors the pastures and advises on the implementation of rotational grazing. The security committee enforces regulations on grazing and punishes any law breakers. The security committee also conducts anti-poaching patrols to deter any illegal harvesting of natural resources.

The current/contemporary governance design borrows from and incorporates many aspects of customary governance.

The group ranch committee (GRC) is the highest decision-making body. Below this are the project management or special programs committees, then the community members. The decision-making process starts with the community members deliberating and agreeing upon the way forward during the general meetings. The project management teams and the GRC refine the deliberations and make final decisions in accordance with community wishes. The various management units including the grazing committee and the rangelands monitoring units enact the deliberations. The security committee works closely with the rest of the committees and community members in protecting the wildlife, arresting any law breakers and enhancing peace processes in the community. The women's group and the youth in the community initiate decisions then forward suggestions to the committees.

5. Basis of structures/processes in customary institutions

The customary institution that guided decision-making and implementation in the community was the council of elders. The council is headed by a customary chief, appointed by the community leaders from the time of his passage from boyhood to manhood. The elders meet up regularly to make decisions regarding their livelihoods and pasture and water usage. The community always consulted the council of elders on matters related to pastures and movement of livestock. Any conflict cases in the group ranch are brought to the council for guidance on resolution. The council is still relevant in the current management of the group ranch but are not automatically elected to the GRC. The community and group ranch leadership still involve the council of elders in the enforcement of punishment of those that are found breaking planned grazing rules.

6. Legal mandate

The two group ranches are legal entities, registered under the provisions of the Land (Group Representatives) Act, Chapter 287 (Kenya) (Ng'ethe 1993). The elected officials are all registered and recognized at the county government office. In the event they are replaced during the annual general meetings, the office at the county government updates the records accordingly.

The central government through the Ministry of Lands recognizes and assigns specific resource management functions to the GRC. This includes ensuring the group ranch remains a communal landscape, providing livelihood to the members equitably.

The Water Resource Users Association is mainly in charge of the water resources including crop irrigation. The local community recognizes this community-based organization even though it is not registered with any government office. The association makes and enacts decisions regarding water allocation, working with the GRC to enact punitive sanctions when appropriate.

7. Authority and governance powers

The act that established the land representatives or group ranches provides for the powers of the managing authority, the GRC. The GRC has power to collect the community members' views on resource management, deliberating on the views and sometimes negotiating on behalf of the community. The decisions on access and use of pasture, water points and certain enclosures are made and enacted by the GRC.

Authority and governance power over certain land resources are held elsewhere. The forest resources are under the Kenya Forestry Services department, wildlife is under KWS, and mineral resources are under the Ministry of Mines. Minerals, forest resources and wildlife that have not been extracted are a property of the government and therefore the people on whose land they fall have only stewardship rights. In the study community, KWS has power over the wildlife; the consumptive rights of the community only allow them to benefit from the aesthetic value of the wildlife.

The county government also has governance power over some resources. Every business enterprise must pay tax to the county government. For example, the livestock markets that are run and were established by communities have to pay cess to the group ranch and to the county government.

Water resources are governed by a community organization, the Water Resource Users Association. This organization has limited authority over the water resources. Most of the power over the water resources locally rests with the GRC.

8. Management

The group ranch management committee performs their work as provided for by the bylaws but do not have a staffed secretariat. The group ranch rangers are members of the community that were recruited to work in various community enterprises and enforce the planned grazing. They are paid a salary by the GRC. Other enterprises or groups like the Lale'enok Resource Centre have staff who are paid from the proceeds of the income-generating activities that they are involved in. The group works with consultants from time to time, depending on the requirement of any project at hand. SORALO and ACC have a team of researchers on the ground who work with the various subcommittees in data collection and wildlife monitoring. Any rangers or community members working directly with research projects receive payment from the agency running the project.

Spatial organization, scales and levels

9. Definition of the rangeland unit

The rangeland was defined based on the administrative boundaries drawn by the central government of Kenya. Most of the administrative boundaries were based on the organizations, mainly the clans. The rangeland therefore covers all area where the Maasai people from the group ranches of Shompole and Olkiramatian live.

10. Nesting and multi-level planning approach

The governance system does not have many units that are connected or overlap and therefore there is very little nesting. In a few cases, there is nesting in decision-making and functioning. The household unit is almost autonomous on some decisions, e.g. the use of household 'olpololi'—reserved grazing area—which fall within the larger communal landscape. The regulations of managing household olpololi are similar to those for rotational grazing at the wider community level. The household therefore makes a decision on when to use the olpololi but this will depend on whether the GRC has decided the area is a seasonal grazing area. The Water Resource Users Association's decisions depend on community input regarding priority for the use of the water but are also guided by the Water Act.

F. Outcomes and impacts

The rangeland condition was perceived to be degraded before the intervention. Community members felt that there were too many livestock, especially goats and sheep, and the land on which they could move around was limited. The land was unable to support all of the animals due to erosion and overgrazing; gullies formed on or around water points. The livestock body condition was very poor and productivity was low. There were fewer wildlife species, particularly the big cats, which were becoming rare locally.

Since the implementation of the intervention, there have been some improvements. The community has zoned the land into four land-use sections. There is a conservation area where wildlife and ecotourism thrive. The number of wild ungulates and big cats has increased in the area tremendously. Two lodges in the conservation areas in Shompole and Olkiramatian generate income for the community. However, there is still a high level of competition for water and pasture for livestock. Planned grazing has helped reduce the pressure within the grazing areas in the two group ranches.

The dry and wet season grazing areas are well managed and regulations on when to move livestock are closely observed (Tyrrell et al. 2017). This has led to healing of the rangelands. The community and household livestock enclosures play a significant role in holding the milking and lactating herd closer to the community settlements..

The benefits from the intervention are felt everywhere in the community; the common perception is that the physical condition of the rangeland has improved. Demarcation of seasonal grazing areas is attested as a clear benefit for everyone. Livestock has improved in body condition and milk production. There is improved interaction between the community and government agencies, e.g. KWS and human-wildlife conflict is reduced. Other economic benefits include youth employment as scouts and in the lodges.

G. Discussion

In communities that share the natural resources as commons, serious or eminent threats may lead to a collective realization that a new strategy is needed. In the early 2000s in Shompole and Olkiramatian, the local community was at that stage, but unable to decide upon a course of action to address the crisis. Unlike other group ranches, the land had not been subdivided into individual plots mainly because of ecological and historical factors. During the state of emergency in 1952, non-Maasai communities who occupied the rangelands and began to farm them were forced to leave (Grandin 1991). Since Maasai people had lost most of their rangelands elsewhere in Kenya, they held on to the southern rangelands, restricting themselves to these small areas. The fact that the two group ranches had fewer Maasai households/members to register as a group ranch made decision-making difficult. The proximity of the rangelands to Nairobi make it an easy target for economic investments, but the lack of good road infrastructure, a salty lake and the scarcity of fresh water limited investment in the area. Until recent eradication, the presence of tsetse flies in the area discouraged other farming groups. By the time development came to the community, the land was still intact, and the community was willing to welcome external support to reclaim and conserve their natural resources.

The existence of a customary governance structure is important in this case because the outside agencies found a platform on which they were able to initiate dialogue with the community. The research activities conducted by an anthropologist from ACC earned the confidence of the community members, providing another avenue for interaction. The involvement of local assistants in undertaking the research facilitated community identification with the intervention at the onset. Community participation at all stages reinforced understanding of the eminent threats to their environment and livelihoods. ACC's support for the establishment of a local, umbrella organization—SORALO—contributed to the success and sustainability of the intervention. Although ACC involvement in the intervention was significant at the beginning, the community perception is that community members were involved in all aspects of planning and implementation, which led to a strong sense of community ownership of the process and outcomes along with a desire to sustain positive systems and results. The committees that were reinvigorated or initiated are still functional and effective. The threats have been greatly reduced and productivity of the rangelands has improved. There is evidence of more wildlife, sustainable pastures and improved livestock productivity.

Currently, the community perception of the events and state of the rangeland is positive. There are more young people involved in research or employed as rangers or workers in the lodges and resource centres (Lale'enok 2012). The community is actively involved in interventions aimed at improving their livelihoods and environmental conservation. Women's groups that were established after the initiation of community-based natural resources management in the area are still active and have empowered more women to participate in sustainable business enterprises.

References

- Ahlering, M.A., Eggert, L.S., Western, D., Estes, A., Munishi, L., Fleischer, R., Roberts, M. and Maldonado, J.E. 2012. Identifying source populations and genetic structure for savannah elephants in human-dominated landscapes and protected areas in the Kenya-Tanzania borderlands. *PLOS ONE* 7(12):e52288.
- Grandin, B. E. 1991. The Maasai: Socio-historical context and group ranches. In: Bekure, S., deLeeuw, P.N., Grandin, B.E., Neate, P.J.H. (eds), *Maasai herding: An analysis of the livestock production system of Maasai pastoralists in eastern Kajiado district, Kenya*. ILCA Systems Study 4. Addis Ababa, Ethiopia: International Livestock Centre for Africa. 21–39. <http://hdl.handle.net/10568/4202>
- Lale'enok. 2012. Lale'enok Resource Centre. URL: <https://laleenok.wordpress.com/2012/07/>.
- Muthuri, J.N., Chapple, W. and Moon, J. 2009. An integrated approach to implementing 'community participation' in corporate community involvement: Lessons from Magadi Soda company in Kenya. *Journal of Business Ethics* 85(2): 431–444. <https://doi.org/10.1007/s10551-008-9739-7>
- Ng'ethe, J.C. 1993. Group ranch concept and practice in Kenya with special emphasis on Kajiado district. Food and Agriculture Organization of the United Nations (FAO). <http://www.fao.org/wairdocs/ilri/x5485E/x5485e0t.htm> (Accessed on 3 May 2018).
- Robinson, L.W., Abdu, N.H., Nganga, I. and Ontiri, E. In press. Protocol for institutional option (community-based rangeland management) Cases. Report to the *Restoration of degraded land for food security and poverty reduction in East Africa and the Sahel: Taking successes in land restoration to scale*, project. Nairobi, International Livestock Research Institute.
- Russell, S., Tyrrell, P. and Western, D. 2018. Seasonal interactions of pastoralists and wildlife in relation to pasture in an African savanna ecosystem. *Journal of Arid Environments* 154:70–81. <https://doi.org/10.1016/j.jaridenv.2018.03.007>
- Schuetz, P., Creel, S. and Christianson, D. 2013. Coexistence of African lions, livestock and people in a landscape with variable human land use and seasonal movements. *Biological Conservation* 157:148–154. <https://doi.org/10.1016/j.biocon.2012.09.011>
- Swynnerton, R.J.M. 1955 *A Plan to Intensify the Development of African Agriculture in Kenya*. Colony and Protectorate of Kenya, Nairobi, Government Printer. Cited in Grandin (1991).
- Tyrrell, P., Russell, S. and Western, D. 2017. Seasonal movements of wildlife and livestock in a heterogeneous pastoral landscape: Implications for coexistence and community based conservation. *Global Ecology and Conservation* 12:59–72. <https://doi.org/10.1016/j.gecco.2017.08.006>
- Veit, P. 2011. The rise and fall of group ranches in Kenya Focus on land in Africa Brief. Accessed 25 April 2018 at <http://www.focusonland.com/countries/rise-and-fall-of-group-ranches-in-kenya/>

Annexe: Key informant interview guide

[Informed consent text]

Community, development agency

1. Please tell us about your community- the people, social and economic activities- over the period you have been around.
2. Are there any development agencies working in the community?
3. Please us about the main development agency in the community.
4. Explain how the agency approached the community before starting to work here.
4. Were there any activities that involved assessing the capacity of the members and leaders to undertake rangeland management practices?
6. If yes to the above, tell us about the trainings in detail.

Governance design

7. Please explain the structure of leadership in the community. How are the leadership positions filled up? Is this process regular?
8. Do you have any customary or hereditary leaders who get nominated/elected automatically to the decision-making body for the group ranch?

Authority

9. Who are the main actors in the decision-making process?
10. How is the whole community involved in planning and implementing the management of natural resources?
11. Do you hold community meetings to decide on activities like grazing, dealing with livestock predation by wildlife and conflict resolution?

Change in natural resource management

12. Now, looking back over time, please describe the changes you have seen in the pastures, water and the landscape.
13. Have the livestock numbers changed over that period? What is the change, increasing or decreasing?
14. Have people adopted new livelihoods activities over the last ten years? What are the alternative livelihoods?
15. Is there any change in the social structure? Please explain.

Authority

16. What is the legal mandate of customary institutions? Is it registered by any national or county government authorities?
17. What powers does the group ranch committee have? Do they make and implement most of the decisions?
18. You improved your grazing plans with zoning as it is. How was this decision made? What motivated the improved grazing plans? Who was involved in formulating these plans?
19. Were there reports that were reviewed before making the decisions on planned grazing? Were people consulted to give their experiences and knowledge before the plans were concluded?
20. Staffing
21. Does the group ranch have a secretariat and a physical office?
22. Does the group ranch have salaried members on staff? Does the group ranch hire professional consultants to help in implementing plans for natural resources management?
23. Boundaries
24. Was there any mapping that was done to come up with the boundaries for your group ranch?
25. Are the boundaries based on any aspect?

Planning

26. When planning, do you involve smaller units that feed into a bigger unit? (such as the village level and then a group ranch level?)
27. Do you have a smaller grazing committee at the village level and a bigger one at the group ranch level?
28. Are there any other agencies that are involved in the planning process?
29. What do you do to law breakers and other offenders?
30. How is conflict resolution done in the community?

Thank you for your participation. The answers you have provided will help us understand the community efforts and processes of restoring the productivity of their rangelands while improving the livelihoods of the people and conserving wildlife. A report from the research will be shared with the community when the research is over.

ISBN: 92-9146-552-6



The International Livestock Research Institute (ILRI) works to improve food and nutritional security and reduce poverty in developing countries through research for efficient, safe and sustainable use of livestock. Co-hosted by Kenya and Ethiopia, it has regional or country offices and projects in East, South and Southeast Asia as well as Central, East, Southern and West Africa. ilri.org



CGIAR is a global agricultural research partnership for a food-secure future. Its research is carried out by 15 research centres in collaboration with hundreds of partner organizations. cgiar.org