Future Agricultures

Working Paper

Into the fold: what pastoral responses to crisis tell us about the future of pastoralism in the Horn

Jeremy Lind and Lina Rivera Barrero

May 2014

Table of Contents

Executive Summary

This paper is concerned with how pastoral livelihoods are likely to evolve in areas of the Horn of Africa where processes of incorporation are intensifying. More than ever before, pastoral areas of the Horn of Africa are coming into the fold of wider economic processes. Expropriations of land and key resources in rangelands for the establishment of private ranches and commercial farms, the expansion of roads, telecommunications, and marketing facilities to promote trade and mobility, and investments in hydrocarbons are some of the ways that pastoral areas are being newly encapsulated into regional and global capitalist development. The connections between pastoral areas and wider national, regional and global processes will intensify and become more systematic, codified (in land use planning and statutory tenure, internal revenue and customs, and veterinary rules and regulations, for example), and otherwise formalised.

Taking the example of Maa-speaking herders in the Laikipia region of central Kenya as a case study, this paper considers how trends of accelerating livestock commercialisation and private investment in rangelands might change the dynamics of pastoral livelihoods and vulnerability. Laikipia stands out in this picture of regional transformation in the Horn. It has long been incorporated into national systems in Kenya and beyond, through its location in the Mt. Kenya circuit and, hence, its relative proximity to bigger markets, and by way of land expropriations negotiated during the colonial era and subsequent uses of land for the conservation of internationally-valued wildlife, cattle ranching and horticulture, and luxury tourism.

In particular, various processes of land and resource expropriation have had a pincer effect on pastoralism in Laikipia. Over the past fifty years boundaries have become more fixed and, increasingly, the Maasai have become confined to the group ranch areas. More and more Maasai have left livestock-keeping. Other Maasai who have stayed behind have been pushed to adapt production strategies, as well as go to extraordinary lengths to support livestock, particularly during crises.

The paper takes pastoral responses to the severe drought crisis of 2008-2010 in Kenya as its point of departure. The Maasai felt the impacts of the drought so severely that some began referring to it as *Olamei Oodo* or 'the Great Drought'. Although there were important innovations in Maasai responses to the 2009 severe drought, these did not prevent devastating livestock losses, with one estimate that 64% of cattle herds and 62% of sheep were lost.

The paper reports the findings of a survey of 110 Maasai households in seven sites in Laikipia on pastoral livelihoods and strategies to manage and recover from the severe drought crisis of 2008-2010. Key findings of the household survey are as follows:

- Those reporting they are now 'dependent' or 'struggling' has spiked, indicating a steep drop in living conditions when comparing 2002-2003 and 2009-2011.
- Respondents across all wealth groups reported a precipitous drop in livestock numbers between 2009 and 2010. Sheep was the most common animal in herds for households across all wealth categories.
- All of the households combine livestock with a variety of off-range activities such as farming, bee-keeping, and casual work.
- The most lucrative as well as most widely practiced livelihood activity is rearing and selling livestock, followed by raising cereal food crops, selling food crops and bee-keeping. Around one third of households (31%) reported having a salaried job. Smaller proportions of households are involved in livestock-related activities such as selling hides and skins or dairy products.
- The highest proportion of households involved in livestock-keeping is in the poorest wealth category. Greater proportions of households in the middle and better-off wealth categories are involved in farming and other off-farm activities.
- A majority of households overall indicated they were seeking to buy animals, including over 70% of better-off households, just over half of households in the middle and poorer wealth categories.
- For poorer households, sheep are clearly preferred compared to other livestock types, whereas preferences are more split for households in the middle (between sheep and cattle) and better-off (between cattle and goats) wealth categories.

In Laikipia, while some have benefited from changes that have taken place (such as acquiring exclusive rights to 'private ranches', profiting from livestock marketing, value-added livelihood diversification, or improving education for young people), most have faced more uncertain prospects. Many have simply left livestock-keeping to do other things. For those that have stayed behind in the Maasai group ranches, those who are better-off are less dependent on livestock-keeping. Involvement in farming and off-farm work such as bee-keeping and salaried work distinguishes those who are better off from those who are poorer, and provides the means to recover from bad years. Yet, the fact that many have diversified does not imply that they have abandoned livestock-keeping. Following the severe drought crisis of 2008-2010, majorities of pastoralists in all wealth categories were seeking to buy livestock.

Marketing and trade were important considerations in the decisions of many herders of what animals to acquire. The shift to a 'marketing herd' is especially apparent amongst younger Maa-speaking herders. Indeed, post-drought recovery in Laikipia laid bare generational contrasts and the tendency of young people from pastoral backgrounds to exploit new forms of commoditisation/ commercialisation that are happening.

The restructuring of economic relationships that is currently happening in the Horn of Africa, and the rapid growth in wealth for some who are poised to exploit new opportunities inherent in trends of commodification/ commercialisation, suggests very different futures for pastoralism in the region. The experience of Maa-speaking herders in Laikipia portends a future in which many will scrape-by or be pushed into doing other things while a fraction of the herding population will derive certain and great advantage from economic transformation.

Introduction

The pressures on pastoral production systems have rarely been greater. The functionality of customary systems as we have known them – livestock-keeping centred on mobility and key resource access – is under threat and the pressures are intensifying. The famine in parts of southern Somalia in 2011 and food crisis in neighbouring areas of northeast Kenya and eastern Ethiopia once again raised concern that pastoralist livelihoods are fundamentally unsustainable, that predominant policy and developmental strategies and approaches in rangelands have failed, and that new options and opportunities must be found.

Yet, for all the doom and gloom that pastoralists are a dying breed, and despair at the seeming failure of states in the region and their developmental partners to demonstrably reduce vulnerability over the long-term and prevent food crises from recurring, the pastoral areas of northern Kenya and southern and eastern Ethiopia are at the precipice of a profound transformation. Already, livestock exports from Ethiopia are booming; the war in Darfur displaced the lucrative trade in camels, with large traders quickly coming to the fore in Ethiopia to supply markets in the Arabian Peninsula and Middle East (Aklilu and Catley, 2013). This is having ripple effects into Kenya, with many herders in the northeast now selling to traders in Moyale who supply the Ethiopia trade (Mahmoud, 2013). Commercialisation trends and improved infrastructure are quickly changing the landscape of pastoralism in Borana as apparent in fodder plantations, saleyard facilities, tarmacked roads reaching further and further into the rangelands, expanding mobile phone coverage, and improved supply and distribution of veterinary drugs.

These processes of incorporation are also evident in pastoral areas of Kenya. The Tana Delta is being reconfigured by large land deals involving a range of domestic and commercial investors (Duvail et al., 2012; Smalley and Corbera, 2012). At the same time, improvements in communication and transport – through the use of motorboats and motorbikes within the delta, as well as an increase in the number of passenger vehicles plying the routes linking the area with regional market centres – has greatly improved access to markets for pastoralists, who are taking full advantage (Nunow, 2013). In northern Kenya, the establishment of Isiolo as a regional centre, and proposed rail and road links and an oil pipeline from Lamu to Southern Sudan and Ethiopia as part of the Lamu Port-South Sudan-Ethiopia Transport Corridor Project (LAPSSET) – portend further considerable change in the region (Copeland and Kvelland, 2013; Rift Valley Institute, 2013).

In addition to these processes of capitalist development and commercialisation, political change in the region is providing many further opportunities to do things differently. In Ethiopia, regional states with predominantly pastoral populations, such as Afar and Somali, are using powers conferred under Ethiopia's federalist system of government to introduce new state-level land legislation that for the first time seeks to acknowledge and protect the rights of pastoral mobility and key resource access (Mulatu and Bekure, 2013). In Kenya, implementation of the new constitution provides considerable opportunities to address the situation of weak livelihoods for many pastoralists (Elmi and Birch, 2013). This includes better representation within a decentralised system of government, bringing decisions concerning the allocation of public resources much closer to ordinary people who are directly affected by these decisions, as well as reform processes including for land.

Against this backdrop of transformation but also continuing high levels of vulnerability, this paper is concerned with how pastoral livelihoods are likely to evolve in areas of the Horn of Africa where processes of incorporation are intensifying. Taking the example of Maa-speaking herders in the Laikipia region of central Kenya as a case study, it considers how trends of accelerating livestock commercialisation and private investment in rangelands might change the dynamics of pastoral livelihoods and vulnerability. Laikipia stands out in this picture of transformation. The impacts of commercialisation trends and processes of incorporation happening across the Horn are all the more dramatic because they affect areas that have long been viewed as 'marginalised' and disconnected from national and regional markets. Laikipia is very different. It has long been incorporated into national systems in Kenya and beyond, through land expropriations negotiated during the colonial era and subsequent uses of land for the conservation of internationally-valued wildlife, cattle ranching and horticulture, and luxury tourism (Letai and Lind, 2013).

One reason why it is so illuminating to examine patterns of pastoral change in Laikipia is because it has for so long been incorporated into larger systems, with many competing land uses and interests and a variety of domestic and foreign capital all affecting pastoral livelihood options and opportunities. Thus, as we speculate about the future of pastoralism in the region, and the new forms of pastoralism that may arise as other types die-out, it is instructive to learn from what has happened with pastoral livelihoods in Laikipia over-time, and what might happen in the future.

The paper takes pastoral responses to the severe drought crisis of 2008-2010 in Kenya as its point of departure. It might be questioned what can be learned from a crisis, from a time that might be regarded as exceptional and out of the ordinary. Crises, like that of 2008-2010, unmask vulnerability as well as wealth, time-old coping strategies as well as innovation, conflict as well as cooperation. Maa-speaking herders in Laikipia have been leaving pastoralism for over 50 years, unable to access high-value fodder to support livestock or social support to rebuild herds. Many have fallen out during times of crisis. Yet, these crises have also led to innovation and cooperation, opening new pathways to pursue livestock-keeping. Thus, they can provide a looking glass into how pastoral production systems and livelihoods have changed and may continue to evolve.

The paper is structured in four parts. The following section introduces Laikipia and reviews why it was so challenging for Maasai herders to respond to the 2008-2010 drought crisis as well as the extraordinary measures that were taken to support livestock at the height of the drought. The subsequent section ('Livelihoods on the move') presents the findings of a household survey of livelihoods, livestock holdings and herd composition of amongst pastoral households in Laikipia. The penultimate section ('Building back') assesses trends of livestock diversification amongst Maa-speaking herders on the Laikipia plateau against survey data on trends in herd sizes as well as livestock marketing that indicates a shift from a 'breeding herd' to a 'trading herd'. The conclusion considers the significance of the findings in view of transformations happening more widely in pastoral areas of the Horn and what the experience of Laikipia herders might foreshadow for the future of pastoralism in the region.

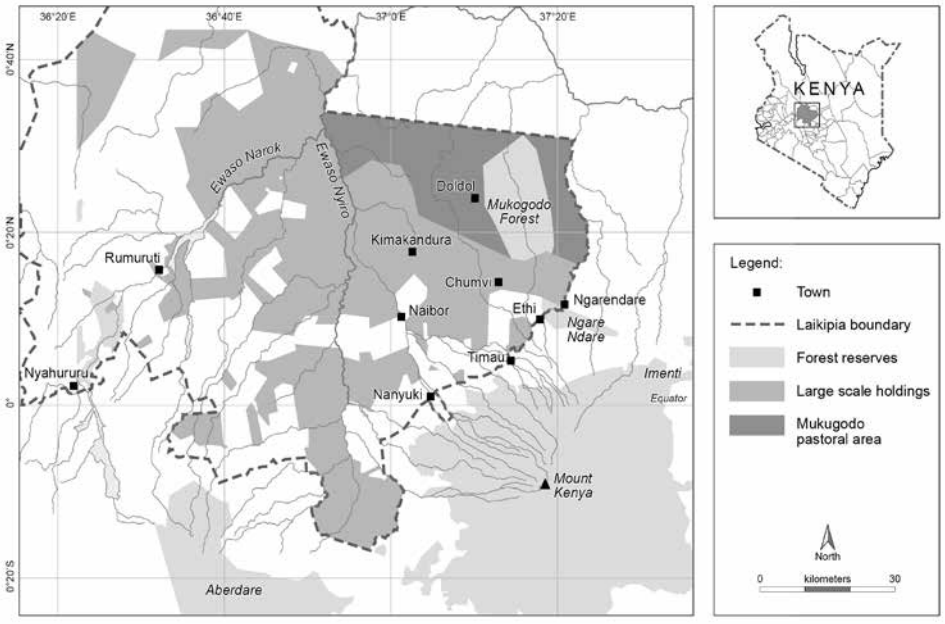
The 2008-2010 severe drought crisis in Laikipia

Laikipia straddles the border between the highlands of central Kenya and the expansive rangelands of the country's north (Map 1). It reaches from the ecologically fecund lower slopes of Mt. Kenya westward across a plateau that grows increasingly drier as it stretches toward Baringo County in the west and Samburu and Isiolo Counties to the north. The plateau is a patchwork of different land holding types, including large ranches that are owned by a mix of descendents of white Kenyan settlers and international investors, large-scale farms, group ranches belonging to Maasai, private ranches owned by Maasai elites, plots belonging to individual small-holders, government outspans and forest reserves. Forty eight large ranches take up approximately 40 percent of the land area (Letai, 2011). Most Maasai pastoralists reside in group ranches, an area covering approximately 7 percent of the plateau, or in nearby areas designated for small-holders.

The nature of Maasai pastoralism in Laikipia reflects a long experience of negotiating profound changes in land and resource access. The plateau was originally inhabited by a mix of Maa-speaking livestock-keepers and Yaaku hunter-gatherers. Maasai who originally inhabited rangelands around Nakuku and Naivasha were forcibly moved to the Northern Masai Reserve (what is now Laikipia) in 1904-05. A separate Southern Reserve was created on the semi-arid plains lying south of Nairobi stretching to the border of Tanzania (then German East Africa). Shortly thereafter the administration of British East Africa sought to move Maasai from Laikipia in order to create a disease-free area for dairy and beef ranching by white settlers. The Maasai in Laikipia were eventually moved to the Southern Reserve over a two year period beginning in 1911. Maasai from the Mukogodo Section who affiliated themselves with the Yaaku stayed behind. These Mukogodo Maasai prospered over many years: the removal of other Maasai sections meant there was little competition for grazing, and ranches were not fenced until after the Second World War. The boundaries of the Mukogodo Reserve were not tightly controlled until 1950. The reserve was divided into thirteen group ranches following the Group Representative Act of 1976, and a further 36 private ranches were delineated for Maasai elites (Letai and Lind, 2013).

Over the past fifty years boundaries have become more fixed and, increasingly, the Maasai have become confined to the group ranch areas. As pressure increased on the group ranches, some Maasai began settling on plots held by absentee Kikuyu, who were allocated land following independence by former President Jomo Kenyatta. Other Maasai sought to use government lands but were in some instances pushed out after lands were grabbed by senior government officials, military officers and politicians, including Maasai. Various processes of land and resource expropriation have had a pincer

Map 1. Laikipia County (indicating main land use categories)



effect on pastoralism in Laikipia, pushing more and more Maasai to leave livestock-keeping (Letai and Lind, 2013). Other Maasai who have stayed behind have been pushed to adapt production strategies, as well as go to extraordinary lengths to support livestock, particularly during crises. Grazing reserves that would typically be used during droughts have been exhausted by years of compressed grazing, meaning that the impacts of drought are felt more severely even if there is relatively little drop in rainfall (Western, 2011). For example, four of six stations in northern Kenya monitored by the Kenya Meteorological Department reported higher rainfall deficits during droughts in the 1980s and 1990s than in the two years preceding the 2011 food security crisis (ibid.). Still, the Maasai felt the impacts of the drought so severely that some began referring to it as *Olamei Oodo* or 'the Great Drought'. One estimate is that 64 percent of cattle herds and 62 percent of sheep were lost (ILRI, 2010).

The severe drought conditions that unfolded during 2009 in Laikipia followed consecutive seasons of poor rainfall in 2008. In previous droughts in 2000 and 2004, some Maasai entered large ranches to access grazing before being forcibly removed by the military General Services Unit. As grazing conditions deteriorated early in 2009, livestock owners resorted to a variety of measures in an attempt to sustain herds (Box1).

Box 1. Surviving Olamei Oodo and beyond

The drought caught us unaware. We are a mixed group in Laikipia. We have livestock-keepers. We have others who do agriculture and livestock. And others who depend just on farming. And others who do trade. When the drought came, it impacted all of these groups. Livestock traders were affected because the body condition of animals was so poor. When the drought began, we grazed within the group ranches. When the drought persisted, we moved into the conservancies and finished the grazing there. Then we moved to the commercial ranches. We did not go direct to the ranch owners at first. We did night grazing. But the ranch owners were also surveying to ensure there was not night grazing. So this led to tension. The ranchers were confiscating the livestock and taking them back, and pastoralists would try to enter again. So they decided to negotiate. In group ranches, they appointed representatives to approach the ranch owners to negotiate. We formed a committee. The work of this committee was to go around to all the ranchers to request a grazing quota. We reached an agreement. Each group ranch was given a quota to graze in the commercial ranch. Depending on the size of the ranch, we were given a different quota. Pastoralists looked within their herd and picked the most vulnerable livestock to graze in the ranch, which was the milking herd. The ranchers asked us to stop night grazing. The elders went back to the group ranches and addressed their communities, asking them to stop night grazing and to find an alternative to take the remaining herd.

We sent the same committee to the District Commissioner to access Mt Kenya. But people had already started moving to the mountain. We used 3 different routes up to the Mountain – one was the road up to Mt Kenya Safari Club. Some went up the Meru side [of the mountain], some went up the Nyeri side. When we went to the mountain, each person began negotiating with individual farmers living at the forest's edge. The farmers agreed you can have space to kraal livestock but you will give me manure and any milk from the herd. Once we had these agreements with farmers, we had no need for the government to intervene. Everyone sought to enter the forest, backed by the agreements they had formed with the farmers. Once the government saw that individuals had formed these agreements, the government told the people you must live in peace. A committee was formed involving pastoralists and farmers to keep the peace. From then, the government stepped back. Pastoralists accessed the mountain from all sides.

... Some began to move once the grazing on the mountain was finished. When I moved to the mountain I had 100 cows. I returned with only 14. I decided there was no need to keep 14 cows on the mountain. I decided to purchase hay for the remaining cows and remove them from the mountain. Because the population of livestock had decreased, many returned and began selling goats to purchase hay for the few remaining herds. The price of a bale of hay increased to 500 Ksh. The rains soon followed. Large animals died when the rains first started, more than on the mountain. The body condition of livestock was weak so that you had to wake up the animals the day after it rained. People on the mountain tried to run away once the rains started.

... The drought equalised everyone in terms of livestock wealth. The better-off suffered big losses. Those who were poor became wealthier – if you had a small herd, you were able to support them on the group ranches. The poor were wealthier than those who had moved up the mountain and lost everything.

Maasai Councillor, Jua Kali (Laikipia). 'Workshop on land, livestock and the changing political economy of pastoralism in Laikipia and Samburu.' September 15-16th, 2011. Nanyuki.

By January and February, some Maasai began to enter large ranches surreptitiously under the cover of darkness to graze livestock, a practice known locally as 'night grazing'. However, there was no repeat of the wider-scale ranch invasions that happened in 2000 and 2004. Recognising the seriousness of the situation, some ranch owners negotiated with Maasai representatives to permit a limited number of livestock into ranches (Letai and Lind, 2013). The way in which this worked was that a designated community was given a quota, which was divided amongst livestock owners. The results of a survey of Maasai households in Laikipia found that approximately 40 percent of livestock owners were able to put livestock inside large ranches in this way. The numbers were typically small – around 10 animals per livestock owner – but still significant for helping to support a number of animals that could be used to rebuild the herd when drought conditions subsided (Table 1).

Table 1. Average livestock numbers on commercial ranches

	Communal land	Individual holdings	Disputed land	Average
Percentage of HHs that put livestock in ranches	39.7	37.8	25	39.7
Average number of livestock in ranch	9.8	9.5	11.1	10.1
Average number of cows in ranch	10.2	10.6	4.6	8.5
Average number of sheep in ranch	2.9	0	17.6	6.8
Average number of goats in ranch	0	2.1	11	4.4

However, many Maasai were pushed to quit the ranches as conditions worsened. Beginning in April and May, many livestock owners began driving part of their herd to the slopes of Mt. Kenya to seek forage and fodder inside the forests. This required careful negotiations with Meru and Kikuyu small-holders who occupy the lower slopes of the mountain bordering the forest's edge. Maasai herders had come to the mountain in previous years and tensions had erupted when livestock went missing on some farms; farmers also alleged that herders had trampled on crops and interfered with water points. In 2009, Maasai representatives visited with farmer representatives in advance of large-scale livestock movements from the group ranches to the mountain. These negotiations paved the way for individual livestock owners to move their livestock to the mountain and negotiate individual agreements with different small-holders. By August, pastoralists were prevented by the Forest Department from staying in the forest at night. This made it essential for livestock owners to find space to kraal their livestock on farms near to the forest's edge. Herder-farmer agreements had many benefits for farmers, as well, including enhanced soil fertility from livestock dung and urine, fees paid by herders to graze standing and residual crops, selling farm produce to herders, and purchasing weak animals at a discount (Letai and Lind, 2013). For herders, besides having a place to kraal their animals, they also acquired valuable agro-ecological knowledge to expand their involvement in farming, paid lower prices for vegetables and grain acquired from farmers, and also sold their livestock at a higher price to farmers compared to market prices for weak animals that were paid on the group ranches (ibid.).

Significantly, movements to Mt. Kenya (as well as to the Aberdares Range) and cooperative agreements with small-holder farmers were more important for the poorest households that were surveyed (Table 2). Moving herds to distant sites for grazing and water as well as relying on government relief assistance were the most common coping strategies pursued by all households during the 2008 – 2010 drought cycle. During early drought conditions that began in December 2008, the most common coping strategies were pruning trees to get fodder to feed weak animals, grazing within group ranches, and migrating further afield. As conditions deteriorated, 68 percent of households reported that they resorted to 'night grazing' within group ranches, in addition to seeking relief assistance and reducing household expenditure on non-food items. After the long rains failed in April and May 2009, households continued to rely on relief assistance while moving some livestock to Mt. Kenya or the Aberdares (Table 2).

Table 2. Important coping strategies for different wealth categories during the 2008 – 2010 drought cycle

	Coping Strategies	WC1	WC2	WC3	Average for all wealth categories
Dec 2008 – March 2009	Prune trees for fodder to feed weak animals	91%	98%	57%	82%
	Grazing around and within group ranches	89%	95%	57%	80%
	Migrate to distant grazing sites	89%	98%	57%	81%
April 2009 - June 2009	Illegal night grazing in commercial ranches	83%	63%	57%	68%
	Depend on relief food from government and NGOs	66%	65%	29%	53%
	Reduce spending on non-food goods	61%	49%	38%	49%
July 2009 - October 2009	Depend on relief food from government and NGOs	66%	55%	52%	58%
	Migrate to either Mt. Kenya / Aberdares	73%	42%	43%	53%
	Exchange milk, meat and manure with farmers for food stuffs	63%	44%	38%	48%
November 2009 - February 2010	Migrate to distant grazing sites	79%	100%	43%	74%
	Depend on relief food from government and NGOs	64%	71%	52%	62%
	Prune trees for fodder to feed weak animals	57%	79%	43%	60%

Although there were important innovations in Maasai responses to the 2009 severe drought, these did not prevent devastating livestock losses. When conditions turned on the mountain in late 2009 and heavy rains and cold ensued, many livestock were lost (see also Box 1). Indeed, many livestock owners lost more animals on the mountain than they did to drought conditions on the plateau. Some owners began driving their herds back down the mountain before the rains returned and sustained their livestock by purchasing hay in Nanyuki and elsewhere. However, this was not an option for poorer herders who were unable to afford the high prices for hay that prevailed late in the drought cycle. Consecutive seasons of good rainfall in late 2009 and in March-May 2010 led to favourable conditions for rebuilding herds. However, conditions were still desperate and many were starting from very few animals.

The difficult conditions the Maasai faced following the severe drought is confirmed by the results of a household survey conducted in Laikipia in early 2012. The survey, described more fully in the following section, covered 110 households randomly selected in seven sites in Laikipia. Households were asked to describe their overall condition in two periods: during the years 2002-2003 when the region was recovering from a serious drought that lasted between 1999-2001 and 2009-2011 to cover the period of severe drought conditions in 2010 as well as 2011 when good rains aided recovery efforts. Households were asked to indicate which of the following three states best described their household's condition in these periods: doing well (able to meet household needs by their own efforts, making something extra for stores and savings), struggling (able to meet household needs but with nothing to save or invest, only by resorting to crisis activities in some years or by making distress sales of livestock), or dependent (on support from community members and/or relief assistance).

Households in all wealth categories and land tenure settings reported a steep drop in their overall condition between 2002-2003 and 2009-2011 (Table 3). Amongst households in the poorest wealth category, 4 percent of households reported being dependent in 2002-2003 compared with 20 percent in 2009-2011. Those who were struggling jumped from 25 percent in 2002-2003 to 72 percent in 2009-2011 while those who reported they were doing well fell from 71 percent to 8 percent. Similarly, households in the middle wealth category reporting they were doing well decreased from 82 percent to 11 percent. Those who reported they were struggling increased from 18 percent to 87 percent. Notably, households residing in areas with individual land holdings fared worse than households living in areas with communal land tenure. Greater percentages of households in the poorest and middle wealth categories living in areas with individual land tenure reported they were doing well in 2002-2003 compared to households living in areas with communal land tenure. Fortunes reversed, however, with a greater proportion of households living in areas with individual land tenure reporting that they were struggling in 2009-2011 compared with households in group ranch areas. The greatest levels of dependency were observed amongst households in the poorest wealth category living in areas where land tenure was disputed.

Table 3. Trends in livelihoods of Maasai households (by wealth category and land tenure situation)

		Communal land		Individual holdings		Disputed land		Average	
		2009-2011	2002-2003	2009-2011	2002-2003	2009-2011	2002-2003	2009-2011	2002-2003
WC1	Dependent *	23%	0%	11%	12%	27%	0%	20%	4%
	Struggling**	62%	45%	80%	29%	73%	0%	72%	25%
	Doing well***	15%	55%	9%	59%	0%	100%	8%	71%
WC2	Dependent	6%	0%	0%	0%	0%	0%	2%	0%
	Struggling	61%	33%	100%	22%	100%	0%	87%	18%
	Doing well	33%	67%	0%	78%	0%	100%	11%	82%
WC3	Dependent	0%	0%	0%	0%	0%	0%	0%	0%
	Struggling	66%	50%	100%	0%	0%	0%	83%	25%
	Doing well	34%	50%	0%	100%	0%	0%	17%	75%

* Dependent on support from community or relief assistance

** Able to meet HH needs, but with nothing to save or invest/ only by resorting to crisis activities in some years or distress sales

*** Able to meet HH needs by your own efforts, making some extra for stores and savings

Livelihoods on the move

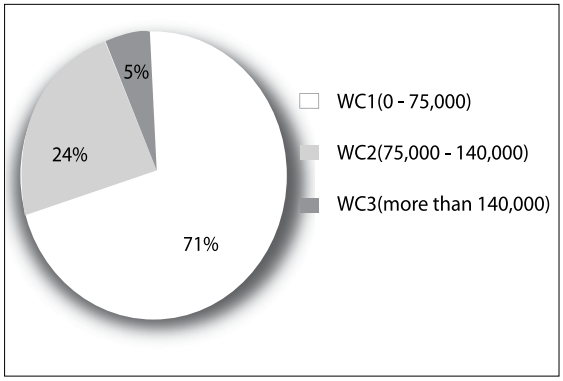
Pastoralism in Laikipia has been shaped over the past 100 years by its location in the Mt. Kenya circuit and, hence, its relative proximity to bigger markets, and also by virtue of existing alongside other land uses – small-holder farming, ranching, commercial agriculture, conservation and tourism. Thus, there is not a single-type of pastoralism that exists, but rather many forms. These range from commercial ranching to feed urban abattoirs, to subsistence herding with some value-added (such as supplying milk to towns like Nanyuki and Timau and meat to small butchers), to agro-pastoralism, including mixing herding with farming small-plots of wheat and maize, or gathering wild foods, and other types of diversified livelihood in which herders combine some level of herding with a variety of tasks-for-cash and casual labour.

Yet, as discussed above, a history of land and resource expropriations coupled with population growth has driven more and more Maasai out of livestock-keeping. The majority that have 'stayed behind' in livestock-keeping confront considerable obstacles to find adequate grazing to sustain herds. In order to better understand the nature of pastoralism that has evolved in Laikipia as well as how people have sought to move on from the severe drought crisis in 2008-2010, a survey was conducted of 110 Maasai households in seven sites in Laikipia. In each site, households were randomly selected. Thirty two respondents were women [29 percent]; seventy respondents [64 percent] were over the age of 35. Ninety seven [88 percent] respondents were married. Of the seven sites selected, three are in areas where there are recognised individual small-holdings, three are in group ranch areas, and land tenure is disputed in one site (Kimakandura, one of the flash points for the 2004 ranch invasions) (Table 4).These locations were purposely selected to ensure a cross-section of households living in different land tenure situations were included given that many Maasai have left the group ranches and shifted into a range of other off-range livelihood activities. Land tenure was a variable considered when analysing the household survey data. The sample was also stratified by wealth to assess the different dynamics between poorer households (defined as those whose annual cumulative income of less than 75,000 Ksh), those 'in the middle' (whose annual income is between 75,000 and 140,000 Ksh), and the better-off who report making more than 140,000 Ksh each year. 71 percent of the sample was in the poorest wealth category (WC1) as compared with 24 percent in the middle category (WC2) and 5 percent in the better-off category (WC3) (Figure 1).

Table 4. Household survey respondents in Laikipia

Location	Land tenure setting	Number of households interviewed	%
Ireri	Individual small-holding	12	10.9
Ngarengiro	Individual small-holding	19	17.3
Ilpolei	Communal	11	10
Kimakandura	Disputed	12	10.9
Chumvi	Individual small-holding	21	19.1
Makurian	Communal	19	17.3
Dol-Dol	Communal	16	14.5
Total		**110**	**100**

Figure 1. Cumulative annual income of household wealth groups



Households were asked to report their livelihood activities as well as the income they gain from these. Overall, the most lucrative as well as most widely practiced livelihood activity is rearing and selling livestock (Table 5). The second most common activity is raising cereal food crops, following by selling food crops and bee-keeping. Around one third of households (31 percent) reported having a salaried job. Smaller proportions of households are involved in livestock-related activities including selling livestock products (12.5 percent of all households), selling hides and skins (6 percent) or dairy products (1.8 percent); the income generated from these activities is also small compared with rearing and selling animals, raising food crops for home consumption or sale, bee-keeping or salaried work.

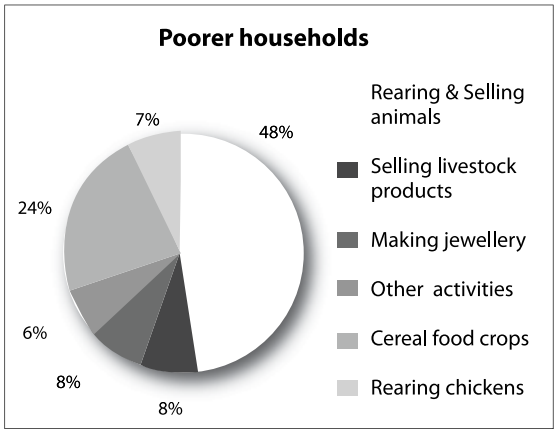
The highest proportion of households involved in livestock-keeping is in the poorest wealth category. Nearly half (48 percent) of households in this category reported they rear and sell livestock as one of their livelihood activities; 8 percent also reported income from selling livestock products such as milk or hides and skins (Figure 2). It is perhaps unsurprising that households who focus on livestock-keeping are also the poorest given that the survey was conducted in early 2012 at the end of the dry season and at a time when many pastoral households were still recovering from the effects of the 2009 severe drought. By comparison, 24 percent of households in the middle income category reported income from rearing and selling livestock and 12 percent from selling crops; 13 percent of better-off households reported rearing and selling livestock. Thus, in our sample, fewer better-off households are involved in livestock-keeping compared with poorer households, for which rearing and selling animals is the most widely reported activity. This should be treated with caution, as it might imply that households who do not focus on livestock-keeping are by nature better-off. Crucially, this sample excludes the wealthiest households (elite Maasai), including those who own private ranches, who generate substantial income from livestock marketing and trade.

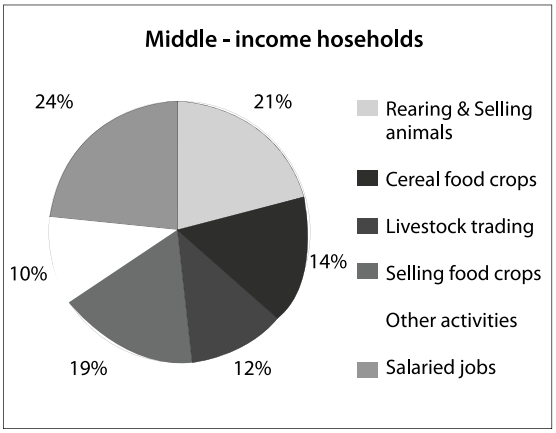
Involvement in farming and other off-farm activities distinguishes the middle and better-off households from poorer households. This is not surprising when considering that access to non-livestock income streams is important for recovering from drought and, thus, would help to differentiate between those in different socio-economic situations. For households in the middle wealth category, the greatest proportion of households report salaried work as an income activity (24 percent); it is also the most lucrative activity, generating an average of 38,000 Ksh of income per year. Rearing and selling animals is the second most common activity reported by households in the middle wealth category, closely followed by selling produce from crops. Bee-keeping is the most widely practiced activity amongst the better-off households followed by farming activities and rearing and selling animals. Bee-keeping is also the most lucrative activity for the better-off, generating an average annual income of 68,000 Ksh.

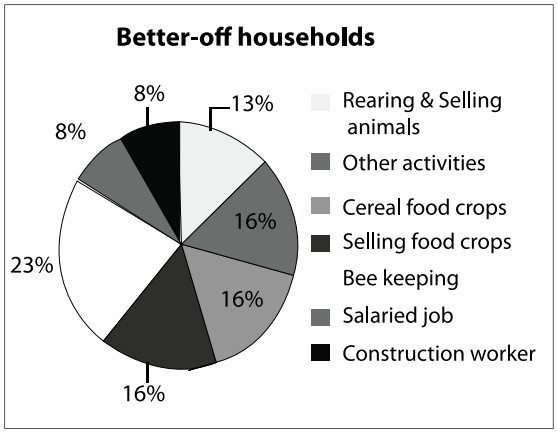
Table 5. Income generated from different livelihood activities

Most lucrative activities	Average income per year (Ksh)	% of HH who practice this activity
Rearing and selling animals	88,905	82%
Cereal food crops	77,180	53.3%
Selling food crops	76,000	34.4%
Bee keeping	68,000	23.6%
Salaried job	61,000	31%
Least lucrative activities	**Average income per year (Ksh)**	**% of HH who practice this activity**
Selling livestock products	12,745	12.5%
Making jewellery	6,430	10.6%
Selling hides and skin	4,137	6%
Selling dairy products	3,000	1.8%
Selling eggs	510	1.5%

Figure 2. Livelihood activities for households by wealth category







Households were also asked to report their livestock holdings. The findings are presented in Table 6, differentiated according to wealth category and land tenure type. A large majority of households in all wealth categories reported keeping goats, sheep and cattle. Land tenure situation does not appear to significantly affect the types of livestock that households keep. The exception is donkeys: for all wealth categories, a greater proportion of households living in areas with individual land holdings reported keeping donkeys compared with households living either in areas with communal land tenure or where land tenure was disputed. Although a greater proportion of poorer households reported rearing and selling livestock as a livelihood activity, the percentages of poorer households keeping cattle and small-stock is slightly below that of households in the middle and better-off wealth categories.

Looking more closely at data on the composition of herds, poorer households keep an average of 21 small-stock and 6 large livestock, 4 of these being female animals that are critical for rebuilding herds (Table 7). Households in the middle wealth category reported keeping an average of 39 small livestock and 26 large animals (20 being female) while better off households kept 38 small livestock and 13 large animals, of which 9 were female. There are significant differences in livestock holdings across the seven study sites. However, no discernible pattern is apparent when looking at the land tenure setting.

Table 6. Livestock ownership according to wealth category and land tenure type

	Land tenure	Camels (%)	Cattle (%)	Goats (%)	Sheep (%)	Donkeys (%)	No. of HH
WC 1	Communal land ownership	7	67.7	78.6	59.3	18.9	27
	Individual land ownership	0	74.3	96	84.3	35.3	40
	Disputed land	0	73	82	82	9	11
WC 2	Communal land ownership	30	93.3	100	91.7	27.3	15
	Individual land ownership	0	91.7	100	83.3	50	10
	Disputed land	0	100	100	100	0	1
WC3	Communal land ownership	0	100	100	100	16.5	4
	Individual land ownership	0	100	100	100	50	2
	Total						110

Table 7 . Herd composition for households by wealth category [2011]

	Type of livestock	Dol-Dol	Makurian	Ilpolei	Chumvi	Ngarengiro	Ireri	Kimakandura	Overall
WC 1	Small-stock (goats and sheep)	44	30	2	32	8	21	12	21
	Mature large livestock (camels and cattle)	1M - 4F	1M - 4F	1M- 0F	1M - 3F	1M -2F	1M-1F	1M- 2F	1M - 2F
	Young large livestock (camels and cattle)	2M- 3F	2M - 4F	0M-0F	1M - 3F	1M -2F	1M-3F	1M-2F	1M - 2F
WC 2	Small-stock (goats and sheep)	47	61	35	42	36	32	22	39
	Mature large livestock (camels and cattle)	2M - 12F	4M - 14F	2M -10F	2M - 8F	1M-11F	5M-10F	1M-4F	2M - 10F
	Young large livestock (camels and cattle)	3M - 11F	4M - 15F	2M-7F	3M - 9F	6M-18F	5M-10 F	4M - 4F	4M- 10F
WC 3	Small-stock (goats and sheep)	35.5		35	55		25		38
	Mature large livestock (camels and cattle)	1M - 4F		1M-0F	1M - 8F		1M-8F		1M-5F
	Young large livestock (camels and cattle)	1M - 5F		0M -1F	8M -8F		4M-4F		3M-4F
	Overall	1M -6F	2M -9F	1M-3F	3M - 6F	2M-8F	3M-6F	2M-3F	2M-5F

Building back

Livelihood diversification has played a significant role in helping the Maasai to rebuild their herds following the 2009 catastrophe. Given the close proximity of the Mukogodo rangelands to neighbouring farming areas as well as the markets and towns in the central Kenya highlands, there were clear pathways for Maasai herders who suffered livestock losses to exit pastoralism in search of new livelihoods. The livelihoods data presented in the preceding section are gathered from Maasai residing in Mukogodo. Yet, many have left over time in search of plots to take up farming, to seek casual and salaried work in Nanyuki and other nearby large towns, or to move further afield to Nairobi and Kenya's other cities. While the full extent of diversification that has happened is not represented in the above data, it does reflect the movement away from pastoralism on the plateau over the past 50 years, particularly amongst those having small and medium-sized herds.

A range of factors have contributed to these diversification trends outside of livestock-keeping (Table 8). These include familiar 'push factors' like poverty and the lack of reliable access to high quality grazing to support herds. One Maasai participant at a workshop on changing pastoral livelihoods noted, "Everything is in a mess now, nothing is improving. Land is going, going, going. Livestock are being lost in large numbers. Although we initiated coping mechanisms [during the 2009 drought] and while we survived, to what extent are these sustainable?" Violence happening in recent years in neighbouring areas of Baringo, Samburu and Isiolo and the incorporation of livestock raiding into wider economic predation has also moved some pastoralists to consider alternatives. A Maasai elder noted, "The threat of raiding means that people are also tending to keep fewer animals because of concern that animals will be stolen by the Pokot. But this has encouraged theft amongst Samburu, since people want to take livestock for sale."[1] But factors contributing to diversification also include many 'pull' factors that show a more deliberate and tried attempt to add complementary activities to livestock-keeping. All of the households in our survey combine livestock with a variety of off-range activities such as farming, bee-keeping, and casual work. One Maasai participant at the workshop noted, "We are not so different from other peoples in the country. There is a culture of business, and livestock is a part of this. What will the herd bring to my table? Will it pay for my school fees, for transportation? If you can have livestock alongside running a small business, then why not?"[2] Still, livestock-keeping is the most lucrative activity available for most Maasai. Thus, those with access to alternative income streams often invest back into keeping herds as a way to generate wealth and fund further efforts in value-added diversification. In this way, pursuing alternative economic activities is a way for pastoralists to generate income to invest and try new things both on and off the range, or to scale up things that people have long practiced.

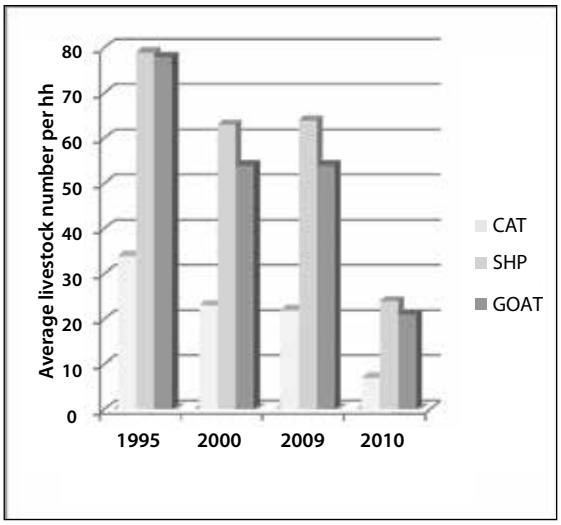
The fact that many Maasai have moved off the range does not imply that they have entirely abandoned livestock-keeping or stay disconnected from pastoral production. Some in fact have returned. Maasai elders at the workshop emphasised that there are many examples of Maasai who have come back and shared their new knowledge and experiences with others (Table 8). For many diversification has happened through experimentation and learning by doing. One example of this is the agro-ecological knowledge that herders acquired from Meru and Kikuyu farmers living by the Mt. Kenya forest. Focus group discussions confirmed that many herders had maintained contact with farmers long after they had come back from the mountain in the last half of 2009. According to some, farmers helped Maasai to start cultivating by providing seeds and even visiting their plots to lend their advice.

Table 8 . Factors influencing the uptake of alternative economic activities amongst Maasai in Laikipia

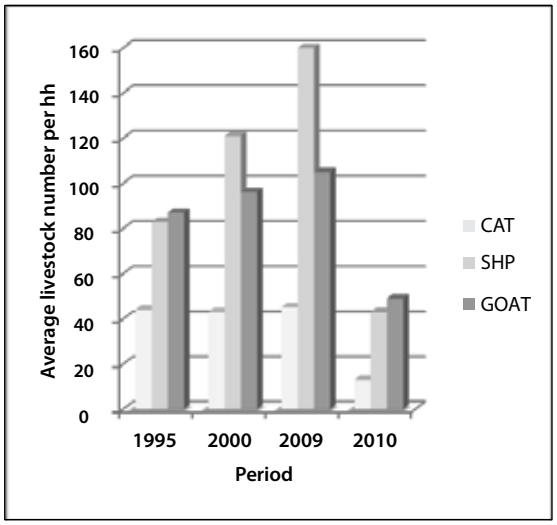
Pull factors	Push factors
• Learning by doing (experimentation, trial and error) • Influence of pastoral innovators (those who have gone to school, or migrated elsewhere and learned new ways of doing, bringing back and sharing their ideas with others) • Opportunities to make money • Changing diet from protein (meat) to *githeri* (maize, peas and corn)	• Fencing that cuts off access to pasture • The poor condition of rangelands in group ranch areas • Poverty and the need for cash to meet a household's needs • Impunity and lawlessness linked to cattle rustling itself an economic activity

Figure 3 . Changes in herd size and composition

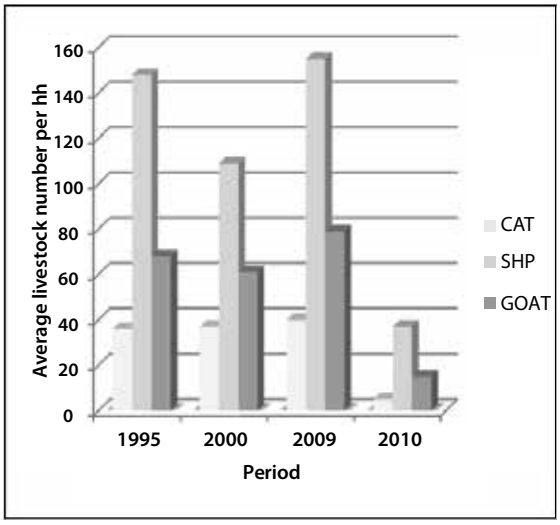
Poorer households(WC1)



Middle income - households(WC2)



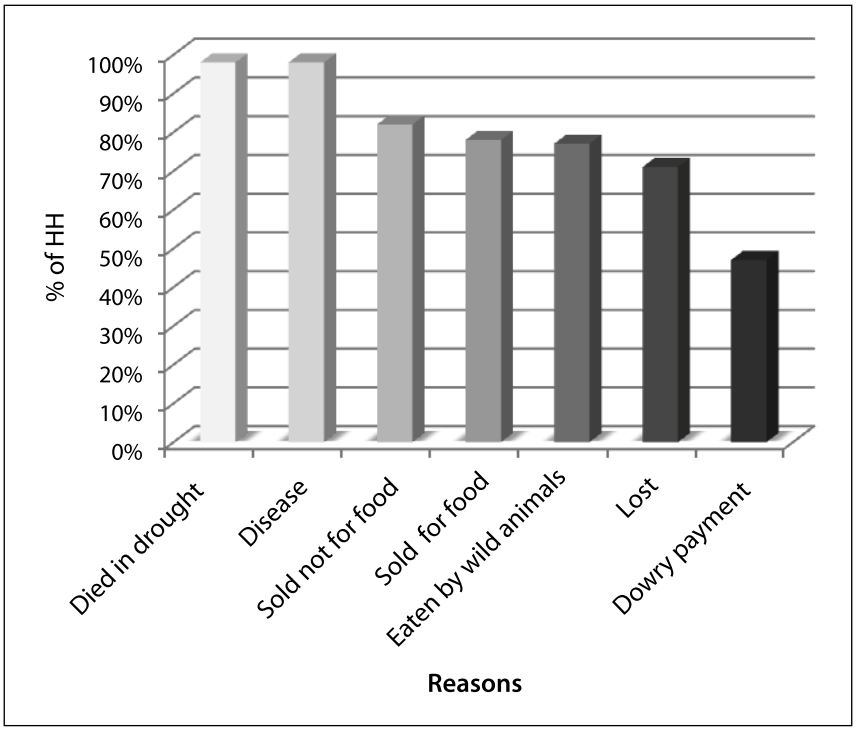
Better-off households(WC3)



While many Maa herders have exited pastoralism, those remaining in livestock-keeping have continued to invest in and expand their herds when conditions allow. Household survey respondents were asked to report changes in the composition and size of their herds, indicating details for 1995 (prior to a drought that affected the region in 1996-1997), 2000 (a drought year), early 2009 when environmental conditions began to deteriorate, and in 2010 when many herders were starting to recover from the severe drought crisis. Respondents across all wealth groups reported a precipitous drop in livestock numbers between 2009 and 2010 (Figure 3). Respondents in the middle and better-off wealth groups reported peak herd sizes in early 2009 just as drought conditions intensified on the plateau. For poorer households, herd sizes were reported to be the highest in 1995. Herd sizes had diminished by 2000 (a drought year) and were virtually unchanged in 2009. Sheep was the most common animal in herds for households in all wealth categories followed by goats and cattle.

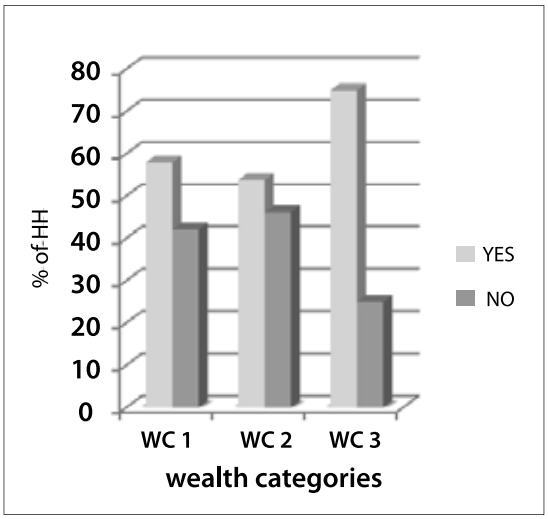
Household survey respondents were also asked to indicate the reasons for changes over time in the size of herds (Figure 4). The two leading causes of a decline in livestock numbers were drought and disease. These are closely related phenomena, as well. Drought weakens livestock, making them more susceptible to diseases. Furthermore, during the 2009 severe drought conditions, livestock owners were pushed to distant grazing sites, including Mt. Kenya and the Aberdares, where they were exposed to cold and insect-borne diseases that are not prevalent in the rangelands. Distress sales closely follow drought and disease as a reason for livestock losses. Overall, nearly 80 percent of households reported making distress sales to meet household needs for food and other needs, such as purchasing livestock and human medicines, paying school fees or buying food.

Figure 4 . Reasons for change in herd size over time



All households were asked whether they were seeking to purchase livestock (at the time when the survey was being conducted). A majority of households overall indicated they were seeking to buy animals, including over 70 percent of better-off households, just over half of households in the middle and poorer wealth categories (Figure 5). Following the severe drought in 2009, Laikipia experienced good rains in 2010, creating conditions more favourable for herd recovery and growth and encouraging many to acquire animals for fattening and sale.

Figure 5 . Households seeking to buy livestock (per wealth category)



One of the notable features of Maasai recovery efforts since the 2009 severe drought has been the growing tendency to engage in livestock marketing. Some have noted the trend away from a 'breeding herd' to keeping a 'marketing herd' (Karwitha, 2009). While in practice it can be difficult and misleading to make such a distinction, marketing characteristics of different animals have weighed on herd owner decisions concerning which livestock to acquire since the drought. Looking at data from the household survey on livestock preferences, there are differences across the wealth categories (Figure 6). For poorer households, sheep are clearly preferred compared to other livestock types, whereas preferences are more split for households in the middle (between sheep and cattle) and better-off (between cattle and goats) wealth categories. Sheep are the most preferred livestock type for households who are poor or in the middle wealth category. Cattle are the most preferred livestock amongst better-off households. For poorer and better-off households alike, goats are the second preference whereas cattle closely follow sheep as the second preference for households in the middle wealth category. A small minority of households who are poor or in the middle income categories indicated a preference for camels.

In order to better understand these preferences, households were also asked to report whether they were seeking to buy livestock and, if so, which animals. Mirroring the livestock preferences reported above, wealthier and poorer households alike were seeking to buy goats (Figure 7). According to survey respondents, goats are easier to support when access to grazing is limited. However, although indicating the same preference, the

Figure 6 . Livestock preferences for different wealth categories

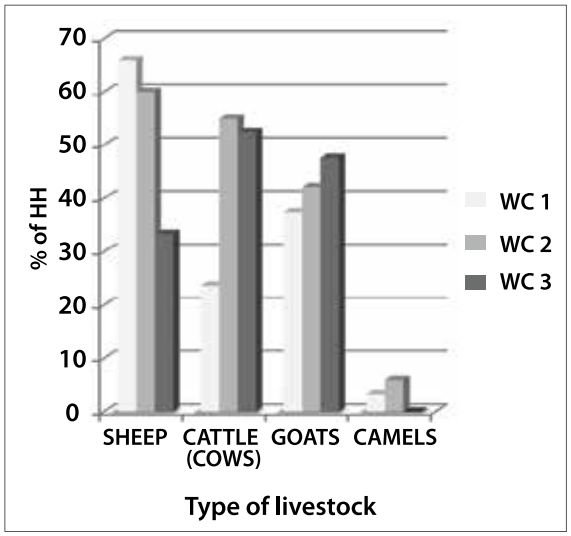
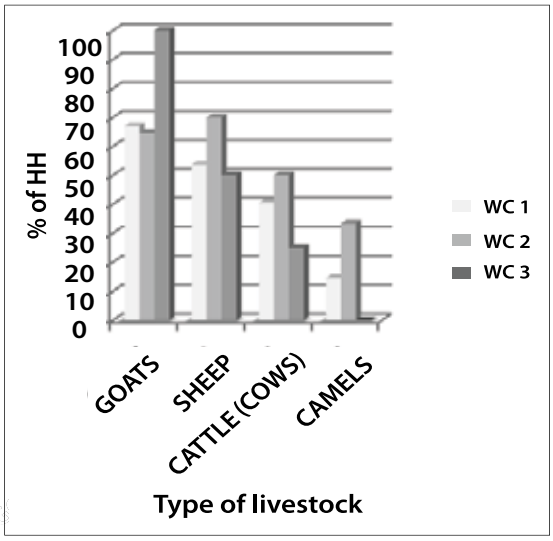


Figure 7 . Livestock types that households are seeking to acquire



reasons can be very different. For poorer households in Laikipia, goats have become a type of currency that is easily convertible into things that households need, such as medicine, school supplies, and food. Thus, a preference for goats amongst poorer households reflects their need for cash to cover their various consumption needs as much as it does a strategy to rebuild their herd. Many wealthier households acquire a large number of goats (particularly bucks) for fattening and selling either by 'trading-up' to acquire larger livestock or investing in other activities.

Following goats, overall sheep ranked second (and first for households in the middle category) as the type of livestock that households were seeking to buy. Advantages of sheep that were mentioned by respondents were that they breed quickly and there is a ready market for sheep (Table 9).

For a majority of households in all wealth categories, smaller proportions of households were seeking to buy cattle. Although cows are valued for their milk and for trading purposes (Table 9), household survey respondents indicated that they are expensive to purchase and that access to sufficient grazing is not guaranteed. In contrast, smaller livestock are preferred because they are both cheaper to acquire and are easier to sustain.

Smaller proportions of household respondents in all wealth groups indicated they were seeking to acquire camels, although they are valued for being resistant to drought as well as for milk production (Table 9).

Involvement in livestock marketing is particularly striking amongst younger Maasai who are eager to generate income independent of their fathers. The following quotes from the workshop participants signify the generational divide that characterises approaches to pastoral production and efforts to rebuild herds:

> Pastoralists are divided into two – the new and old generations. The old generation is so into animals, they do not value cash. The new generation are into business and commerce. They buy animals in order to fatten them for 6 months and then they sell them. But the old men say that when you buy an emaciated cow it is very cheap, he keeps it since he wants to rebuild the herd. The old men have a norm that if you sell, you won't get others.[3]

> People have become cleverer in responding to drought. We have learned a lot. Most of the people buy a lot of shoats [sheep and goats] for marketing. When you sell many livestock, you also realise that the land base is small so it is better to fatten and sell animals and then buy more.[4]

> Value addition pastoralism has emerged since the 2009 drought. Before you could trace a cow back several generations. Now you collect a cow that is sold from someone from Moyale, then you fatten and sell it. It is short-term, value addition pastoralism that has emerged.[5]

> Herders are now employed. The herds are owned by people elsewhere. People find it difficult to follow the herds. Cows are very difficult. The chances of migrating with cows to the mountain is difficult. The migration interrupts your life. With sheep and goats, unless the situation is extreme, you can manage. You can stay in your home area for longer, grazing the livestock near homesteads and within the group ranches. This is also advantageous because you can engage in all the other alternative economic activities.[6]

Table 9 . Advantageous traits of different livestock types, poultry and bees		
Type of animal	**Traits**	**%**
Goats	Drought resistant	93%
	Easy to trade	7%
	Breed fast	4%
	Ease of husbandry	2%
Camels	Drought resistant	96%
	Milk	87%
	Easy to trade	18%
Sheep	Breed fast	96%
	Easy to trade	90%
	Use in traditional events	14%
	Well-suited to local climatic conditions	14%
	Well-suited to physical terrain	7%
Cows	Milk	96%
	Valuable as trade-able commodity	84%
Poultry	Micro-enterprise potential	100%
	Drought resistant	100%
Bees	Micro-enterprise potential	100%

Conclusion

More than ever before, pastoral areas of the Horn of Africa are coming into the fold of wider economic processes. Expropriations of land and key resources in rangelands for the establishment of private ranches and commercial farms, the expansion of roads, telecommunications, and marketing facilities to promote trade and mobility, and investments in hydrocarbons are some of the ways that pastoral areas are being newly encapsulated into regional and global capitalist development. The connections between pastoral areas and wider national, regional and global processes will intensify and become more systematic, codified (in land use planning and statutory tenure, internal revenue and customs, and veterinary rules and regulations, for example), and otherwise formalised. Overlaying these processes are complex political developments that continue to unfold, including political devolution in Kenya, shifting dynamics of insurgency and clan alliances in Somalia's protracted war, and persistent low-level conflict in the Ethiopian lowlands. How do these various complex transformations affect pastoralists? What are the likely trajectories of pastoral livelihoods? And what new variants of pastoralism might emerge in the future and which others could become untenable?

By no means are all pastoralists sidelined by these developments. Some have cashed in on the booming export trade in livestock from Ethiopia through the Gulf of Aden ports to the Arabian Peninsula and elsewhere. Others have established private ranches and boreholes where herders pay for grazing and water. Wealthy pastoralists in some areas have acquired valuable plots on new irrigation schemes. Still others have opened businesses and constructed rental homes in the growing towns and centres that dot the rangelands. Yet, while some herders are 'making it' in the changing economic contexts of the Horn, a significant proportion of pastoral populations in the region scrape by and are deeply vulnerable. As Aklilu and Catley (2009, 2010) show, wealth accumulated from the recent boom in livestock exports from pastoral areas of the Ethiopian lowlands is highly concentrated amongst the better-off. This suggests that patterns of differentiation and class-formation can be expected to become yet more distinct as pastoral areas of the Horn increasingly come into the fold of wider systems of trade, marketing and investment driven by external interests and capital.

It follows that transformations that are taking place across the Horn of Africa do not necessarily entail broad-based benefits for pastoral populations. One reason why it is so illuminating to examine patterns of pastoral change in Laikipia is because it has for so long been incorporated into larger systems, with many competing land uses and interests and a variety of domestic and foreign capital all affecting pastoral livelihood options and opportunities. Thus, as we speculate about the future of pastoralism in the region, and the new forms of pastoralism that may arise as other types die-out, it is instructive to learn from what has happened with pastoral livelihoods in Laikipia over-time, and what might happen in the future.

In Laikipia, while some have benefited from changes that have taken place (such as acquiring exclusive rights to 'private ranches', profiting from livestock marketing, value-added livelihood diversification, or improving education for young people), most have faced more uncertain prospects. Vulnerability intensified and options

for supporting livestock became increasingly constricted, forcing many to look for alternatives to a primary reliance on livestock-keeping. Pastoralism in Laikipia today reflects a lengthy experience of pastoralists negotiating significant changes in land and resource access. As the Laikipia plateau has been carved up into many different land-holding types, which in turn support varying land uses, pastoralists have been pushed to adapt livestock-keeping practices. This includes more intensive grazing of the pockets of rangeland that are still accessible to Maa-speaking herders, as well as negotiating access to other restricted areas including commercial ranches and protected areas on Mt. Kenya and the Aberdares. Yet, innovative pastoral responses to the 2008-2010 severe drought crisis did not prevent catastrophic livestock losses for many. Those reporting they are now 'dependent' or 'struggling' has spiked, indicating a steep drop in living conditions when comparing 2002-2003 and 2009-2011.

Many have simply left livestock-keeping to do other things. For those that have stayed behind in the Maasai group ranches, those who are better-off are less dependent on livestock-keeping. Involvement in farming and off-farm work such as bee-keeping and salaried work distinguishes those who are better off from those who are poorer, and provides the means to recover from bad years. Yet, the fact that many have diversified does not imply that they have abandoned livestock-keeping. Following the severe drought crisis of 2008-2010, majorities of pastoralists in all wealth categories were seeking to buy livestock. Marketing and trade were important considerations in the decisions of many herders of what animals to acquire. The shift to a 'marketing herd' is especially apparent amongst younger Maa-speaking herders. Indeed, post-drought recovery in Laikipia laid bare generational contrasts and the tendency of young people from pastoral backgrounds to exploit new forms of commoditisation/commercialisation that are happening.

The fact remains that many will continue to leave pastoralism. Many living in pastoral areas have already left in that they are very poor, keeping only a residual herd, and must cobble together a livelihood from a range of tasks-for-cash and other work. Provided there were more basic services in these places, many more would likely leave. A clear limitation of this study is its exclusive focus on those who have remained in pastoralism. It did not consider, for example, 'elite pastoralists' who often are based in large towns and regional centres (and further afield) and contract herding activities to various family, friends and hired help. It also did not cover pastoralists living in towns who work as casual labourers or in other salaried work but who often keep a herd, which they manage remotely. It did not consider other 'ex-pastoralists' living in towns who have exited livestock-keeping altogether and engage in other economic activities and survival work. Increasingly, the 'field' of pastoral studies needs to move off the range into regional centres, large towns and beyond.

As the region changes and pastoralists do things differently, both out of necessity and opportunity, we badly need a longer-term perspective – one looking forwards and backwards. The restructuring of economic relationships that is currently happening in the Horn of Africa, and the rapid growth in wealth for some who are poised to exploit new opportunities inherent in trends of commodification/commercialisation, suggests very different futures for pastoralism in the region. The experience of Maa-speaking herders in Laikipia portends a future in which many will scrape-by or be pushed into doing other things while a fraction of the herding population will derive certain and great advantage from economic transformation.

We need to break the mould and think big about what the future of pastoralism in the region might be. While there is an enormous field of policy work and research on de-agrarianisation (on when and why people leave farming, the mechanisms through which they leave, what else they do, and how they maintain or lose their connections with agriculture), there is no comparable field of study or consolidated knowledge on how people exit mobile livestock-keeping. Further, de-agrarianisation literature does not address livestock-keeping contexts, nor indeed do most agrarian studies. Yet, pastoralists continuously adjust their livelihoods to a changing resource base, and shifting political and economic conditions, with the result that new forms of pastoralism arise (such as a commercialised form that depends on having a certain amount of wealth and influence) while many exit altogether. As pastoral areas of the Horn of Africa become ever more enfolded into broader economies and are penetrated by external capital and interests, greater efforts are required to understand how and why pastoralists innovate, specialise, diversify and leave.

End Notes

1 Participant contribution, 'Workshop on land, livestock and the changing political economy of pastoralism in Laikipia and Samburu,' 15-16 September 2011, Nanyuki.

2 Ibid.

3 Ibid.

4 Ibid.

5 Ibid.

6 Ibid.

References

Aklilu, Y. and Catley, A. 2009. *Livestock exports from pastoralist areas: an analysis of benefits by pastoral wealth group.* Report for the IGAD/FAO Livestock Policy Initiative. Addis Ababa: Feinstein International Center, Tufts University.

Aklilu, Y. and Catley, A. 2010. *Mind the gap: commercialization, livelihoods and wealth disparity in pastoralist areas of Ethiopia.* Addis Ababa: Feinstein International Center, Tufts University.

Catley, A. and Aklilu, Y. 2013. Moving up or moving out? Commercialization, growth and destitution in pastoralist areas. In Pastoralism and development in *Africa: dynamic change at the margins.* Edited by Catley, A., Lind, J. and Scoones, I. Abingdon: Earthscan/Routledge.

Copeland, F. and Kvelland, E. 2013. *LAPSSET transport corridor: transit and oil infrastructure in east Africa.* Civil-Military Fusion Centre. September 2013.

Duvail, S., Médard, C., Hamerlynck, O., and Wanja Nyingi, D. 2012. Land and water grabbing in an east African coastal wetland: the case of the Tana Delta. *Water Alternatives* 5 (2): 322-343.

Elmi, M. and Birch, I. 2013. *Creating policy space for pastoralism in Kenya.* Future Agricultures Working Paper no. 68. Brighton: Future Agricultures Consortium.

ILRI. 2010. *An assessment of the response to the 2008-2009 drought in Kenya*. A report to the European Union Delegation to the Republic of Kenya. Nairobi: International Livestock Research Institute.

Karwitha, C. 2009. *A drought assessment in Il Ngwesi Group Ranch*. Report for the Northern Rangelands Trust. Isiolo.

Letai, J. 2011. *Land deals in Kenya: the genesis of land deals in Kenya and its implication on pastoral livelihoods. A case study of Laikipia District, 2011*. Unpublished background report for the Future Agricultures Consortium. Brighton: Future Agricultures Consortium.

Letai, J. and Lind, J. 2013. Squeezed from all sides: changing resource tenure and pastoral innovation on the Laikipia Plateau, Kenya. In *Pastoralism and development in Africa: dynamic change at the margins.* Edited by Catley, A., Lind, J. and Scoones, I. Abingdon: Earthscan/Routledge.

Mahmoud, H. 2013. Pastoral innovative responses to new camel export market opportunities on the Kenya/Ethiopia borderlands. In *Pastoralism and development in Africa: dynamic change at the margins.* Edited by Catley, A., Lind, J. and Scoones, I. Abingdon: Earthscan/Routledge.

Mulatu, A. and Bekure, S. 2013. The need to strengthen land laws in Ethiopia to protect pastoral rights. In *Pastoralism and development in Africa: dynamic change at the margins.* Edited by Catley, A., Lind, J. and Scoones, I. Abingdon: Earthscan/Routledge.

Nunow, A. 2013. Land deals and the changing political economy of livelihoods in the Tana Delta, Kenya. In *Pastoralism and development in Africa: dynamic change at the margins.* Edited by Catley, A., Lind, J. and Scoones, I. Abingdon: Earthscan/Routledge.

Rift Valley Institute. 2013. *LAPSSET: transformative project or pipe dream?* Meeting report of the Nairobi Forum, October 2013. Nairobi: Rift Valley Institute.

Smalley, R. and Corbera, E. 2012. Large scale land deals from the inside out: findings from Kenya's Tana Delta. *Journal of Peasant Studies* 39 (3-4): 1039-1075.

Western, D. 2011. *Better grazing practices hold key to Kenyan drought*. August 5, 2011. Opinion-editorial available at http://www.scidev.net/global/desert-science/opinion/better-grazing-practices-hold-key-to-kenyan-droughts.html. Accessed November 23, 2013.

Future Agriculture

This **Working Paper** was written by **Jeremy Lind** and **Lina Rivera Barrero** for the **Future Agricultures Consortium.** The FAC Working Paper series publishes work in progress by FAC members. All papers are technical research papers which have been peer reviewed, and are available in open access format. The series editors are **Paul Cox** and **Beatrice Ouma**. Further information about this series of Working Papers at: **www. future-agricultures.org**

The Future Agricultures Consortium aims to encourage critical debate and policy dialogue on the future of agriculture in Africa. The Consortium is a partnership between research-based organisations across Africa and in the UK. Future Agricultures Consortium Secretariat at the University of Sussex, Brighton BN1 9RE UK **T** +44 (0) 1273 915670 **E** info@future-agricultures.org

Funded By

UKaid from the British people

The views expressed do not necessarily reflect the UK Government's official policies.