

Full Length Research Paper

Resource-based conflicts in drought-prone North-western Kenya: The drivers and mitigation mechanisms

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Accepted 07 August 2012

The theory of “resource scarcity” dominates the debate on “ecoviolence” in pastoral areas, where conflicts among communities have traditionally been linked to competition over scarce resources and invariably drought because of its role in resource depletion. However, the notion that climate change and resultant resource scarcity directly prompt violent conflict has been challenged by the notion that conflict actually coincide with periods of resource abundance. These contesting views point to non-deterministic linkage between resource availability and conflicts and, therefore, the complexity of pastoral conflicts. This is the scenario hypothesized for the vast pastoral areas of Kenya where violent conflict has become a chronic characteristic. While focusing on drought-induced conflicts over grazing resources, this paper takes cognizance of other factors that trigger and perpetuate violent conflicts in arid north-western Kenya. We present an insight on the nature, causes, dynamics and mitigation strategies of conflicts between the Turkana and Pokot pastoralists based on research study focusing on the linkages between resource availability and conflict. The findings suggest that violent conflicts in pastoral areas result from a myriad of socio-cultural, economic and political factors that reinforce one another by limiting availability of, depleting and reducing access to natural resource base. Competition for scarce natural resources triggered by frequent droughts and exacerbated by weak local institutions, proliferation of small firearms, political incitements, unclear property right regimes and cattle-raiding, was considered central to the violent conflicts observed in the area. The authors conclude that developing integrated policies and strengthening local governance institutions that are rooted in traditional practices for managing resources and inter-community conflicts is integral to the solution

Key words: Climate change, pastoralism, resource use conflict, Pokot, Turkana, rangelands.

INTRODUCTION

Classical conflict studies have typically focused on traditional deterministic causal models dominated by the ‘resource scarcity’ theory, often overlooking or ignoring other ethnic, cultural, economic, and political dimensions which are equally important. However, the contesting opinion that links conflict with periods of resource abundance challenges this original and popular

hypothesis of ‘ecoviolence’. These opposing views compound the ideology of conflict and exemplify the complexity that surrounds violent conflicts among pastoral communities in Africa. Climate change, one of the biggest challenges of the 21st century, not only presents an extra challenge in coping with pastoral conflicts but also in understanding the complexity at their roots. The high climatic variations observed over the past few decades increase risks and uncertainties that threaten the well-being of most rural communities that depend on natural resource-based livelihoods. Climate variability manifests in extreme events notably droughts

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and floods, which have increased in frequency and severity over the past three decades (IPCC, 2007). Prolonged periods of drought are now a regular occurrence across sub-Saharan Africa, especially in arid and semi-arid areas (ASALs) inhabited by pastoral communities, whose main occupation is livestock rearing.

An analysis of climate variability in Africa between 1900 and 2100 by Hulme et al. (2001) showed that climate variability and change is not a phenomenon of the future, but one of the relatively recent past, as the continent is warmer and drier than it was 100 years ago. According to the IPCC fourth assessment report (IPCC, 2007), global mean surface temperature is projected to increase by 1.5°C - 6°C by 2100, accompanied by changes in precipitation patterns and increased frequency of extreme weather events. The length of crop growing period over the Horn of Africa is expected to decline by 5 - 20% in 2020 and over 20% by 2050 (Thornton et al., 2006; Magda et al., 2009) with implications for crop and pasture productivity. These trends are, due to their direct effects on natural resources, likely to have negative effects on the majority of rural households that rely on crop- and livestock-based livelihoods. By causing resource scarcity, extended dry periods have the potential to catalyze resource-based conflicts in pastoral areas, where grazing resources are shared among communities (Eriksen and Lind, 2005).

The central premise of conflict theory is that, as individuals and groups in a society compete to maximize their share of the limited resources, the struggle inevitably leads to conflict. Edossa et al. (2005) observed that most of the conflicts arose when customary practices are no longer viewed as legitimate or consistent with national policies, or when entities external to a community are able to pursue their interests, while ignoring the needs and requirements of the 'insiders'. Conflicts, therefore, emerge from inequalities in accessing or controlling resources (Wasonga et al., 2010).

In the absence of strong local institutions, when pastoral groups struggle to maximize their share of the limited grazing resources, especially during droughts, competition and conflict may arise. By triggering scarcity and deprivation, drought therefore may not only cause conflict but also compromise livelihoods (AU, 2010). Resource scarcity, therefore, has the potential to drive society into a self-reinforcing spiral of violence, institutional dysfunction, and social fragmentation (de Soysa, 2002). Several studies (Oba, 1992; Blench, 1996; Guyo et al., 2005; Mkutu, 2007; Kimani, 2008; Witsenburg, 2009; Moru, 2010) focusing on drought and violent conflicts have been conducted among pastoralist communities inhabiting the drylands of East Africa.

The findings attempt to explain the linkages between drought and conflict prompted by depletion of natural resources and competition over access. While numerous

factors trigger social unrests in pastoral areas, extreme weather events compound the already complex scenario. Understanding of drought as a factor in resource-based conflicts is therefore, critical in the pastoral areas given the increased rainfall unreliability associated with climate change. In Kenya, an analysis of rainfall data from the ASALs reveals widespread droughts in 1960/1961, 1969, 1973/1974, 1979, 1980/1981, 1983/1984, 1991/1992, 1995/1996, 1999/2000, 2004/2006, and 2008/2009 (Morton, 2006; Huho et al., 2011). The current decline in water and pasture resources in Kenya's ASALs have been linked to recurrent and prolonged droughts (Morton 2006). The ASALs of Kenya cover approximately 84% of the country's landmass, support 30% of the human and 70% of the livestock population, and employ about 90% of the local population (GoK, 2010a), with the majority being pastoralists who depend directly on livestock-based livelihoods. Despite their contribution to the national economy, pastoral areas in Kenya are plagued with a number of problems including poverty which is associated with livelihood insecurity due to resource degradation and scarcity, as well as the accompanying resource-based violent conflicts.

Over the years, pastoralists have lost thousands of livestock due to droughts (Huho et al., 2011). Drought, range degradation and conflict are interlinked by complex inter-reinforcing mechanisms that make them destructive to both resources and pastoralists' well-being. A study by Macharia and Ekaya (2005) shows that land degradation reduces viability of pastoralism and directly contributes to increased vulnerability of pastoral households to food insecurity. In addition, range degradation has indirect potential effects of prompting ethnic tensions over shared resources in the absence of strong local institutions and inter-community resource sharing arrangements (Berger, 2003).

Arid north-western Kenya, inhabited by several pastoralist communities that share resources under a unique and complex tenure, presents a great potential for persistent violent conflicts in the absence of functional resource governance institutions. Besides the Turkana and Pokot communities, the region provides common dry and wet seasons grazing ground for various ethnic groups that comprise the Samburu from North Eastern Kenya; Jie, Matheniko, Tepeth, and Dodoth from North Eastern Uganda; the Toposa and Jiye of South Eastern Sudan; and Nyangatom (Dongiro) and Merille from Southern border areas of Ethiopia (Dyson-Hudson and McCabe 1985). The Turkana and Pokot pastoralists who form the majority of the inhabitants in the area have a long history of traditional cattle raids, and inter-ethnic conflicts over the scarce resources (McPeak et al. 2005). In the recent years however, cattle raiding has become more violent, sophisticated, indiscriminate and destructive, thereby fuelling ethnic violence in Northern Kenya (Buchaan-Smith and Lind, 2005; Mkutu, 2007; KHRC, 2010; Omolo, 2010).

Studies by Berger (2003) and Moru (2010) show that drought periods correlate positively with increased incidences of ethnic conflicts, which together determine pastoralists grazing pattern in north-western Kenya. When insecurity is high, livestock herds tend to concentrate in small secure grazing zones, leaving large tracts of land along the borders between communities unused. Estimates by Morton (2001), show that between 15 and 21 percent of north-western Kenya remain insecure and therefore inaccessible each year. This is attested by the abandoned dry season grazing areas on the territorial borders between the Turkana and Pokot; Turkana and Karamojong of Uganda; Pokot and Karamojong and the Pokot and Samburu communities of northern Kenya. However, as observed by Okello et al., (2005) pastoral conflicts are not adequately explained by resource scarcity theories alone but also by the dynamics of cooperation and co-optation within communities, as well as the theories of economic and political ecology. Due to the inadequate presence of state security apparatus in pastoral areas, owing to their vastness and remoteness, most pastoralists acquire illegal firearms for self-protection, hence compounding the problem and creating a conducive environment for criminals to engage in commercialized livestock raids. The commercialization of cattle rustling has also been linked to loss of livelihoods and poverty among pastoral communities that drive unemployed young men, for whom there are limited economic opportunities, to engage in raids.

As indicated by Buchanan-Smith and Lind (2005), powerful and well-connected businessmen and politicians are at the centre of commercialized raiding in northern Kenya. The illicit firearms used in the raids reach Kenya from conflict-prone neighbouring countries such as Southern Sudan, Somalia, Ethiopia and Northern Uganda (Kumssa et al., 2009). The proliferation of the small firearms is already a great security concern in the larger northern Kenya and is slowly affecting communities neighbouring the region. The Government's disarmament efforts have, however, been unsuccessful because they are often ill-informed and never tailored to address the underlying conflict causes (Moru, 2010).

A similar government approach was reported by Krätli (2010) in the neighbouring Karamoja region in Uganda, which the author describes as "system-blind measures that focus on disarmament and punishment thereby exacerbating rather than reducing the violent conflicts". Despite the dire need for intervention, the enactment and strengthening of appropriate strategies to support pastoral livelihoods is slow. Nonetheless, pastoralists have survived natural and human-induced stressors for centuries through traditional institutions and coping strategies (Mworia and Kinyamario, 2008; Opiyo et al., 2011). These strategies include raising a variety of livestock species, mobility, communal land tenure, keeping large herds, herd splitting, informal social security systems, forming economic alliances with non-

pastoral communities and engaging in non-pastoralist activities like farming and trade (Wasonga, 2009; Nyariki et al., 2005). However, the current vulnerability of pastoral households to drought and recurrent resource-based conflicts add to the weakened customary institutions and ineffective pastoral coping strategies that predispose pastoral livelihoods to various stressors.

A downscaled understanding of the nature and causes of pastoral conflicts and their interaction with climate variability, among other driving factors, is critical not only in designing appropriate mitigation measures but also in achieving sustainable resource management and secure pastoral livelihoods. This study was, therefore, conducted to identify and analyze the central drivers of and potential mitigation strategies for the conflicts between the Turkana and Pokot pastoralists in north-western Kenya.

MATERIAL AND METHODS

Study area

The study was carried out in conflict prone border areas of Turkana and Pokot Counties in north-western Kenya (Figure 1). The study area is a typical semi-arid rangeland falling within agro-climatic zones IV and VI, where managing short-term climatic fluctuations as well as adapting to long-term changes is critical in sustaining livelihoods.

The climate is generally hot and dry throughout the year, with mean annual temperature varying from 28°C to 41°C. Rainfall is unreliable and erratic in both space and time, and is bi-modally distributed within the year with the long rains falling from April to May, and the short rains from September to October. The average annual rainfall ranges from 120 mm in the East to over 200 mm in the northwest parts of the region. Seasonal rivers (laghas) and streams are the main sources of water for both domestic and livestock use in the study area. The major seasonal rivers are Kerio and Turkwel that drain the border regions of Turkana and Pokot counties. Other sources of water in the area are sandy riverbeds, shallow wells, earth dams, weirs and bore holes.

Under the precarious environmental conditions that characterize north-western Kenya, pastoralism is the most sustainable land use system because it is based on a strategic resource use pattern that is cognizant of the spatial and temporal ecological heterogeneity of the rangeland ecosystem.

Data collection and analysis

This paper is based on two pillars of extensive field research: the Drought Mitigation Initiative (DMI) project and a doctoral thesis focusing on the linkages between resource availability and conflict. The DMI project, led by

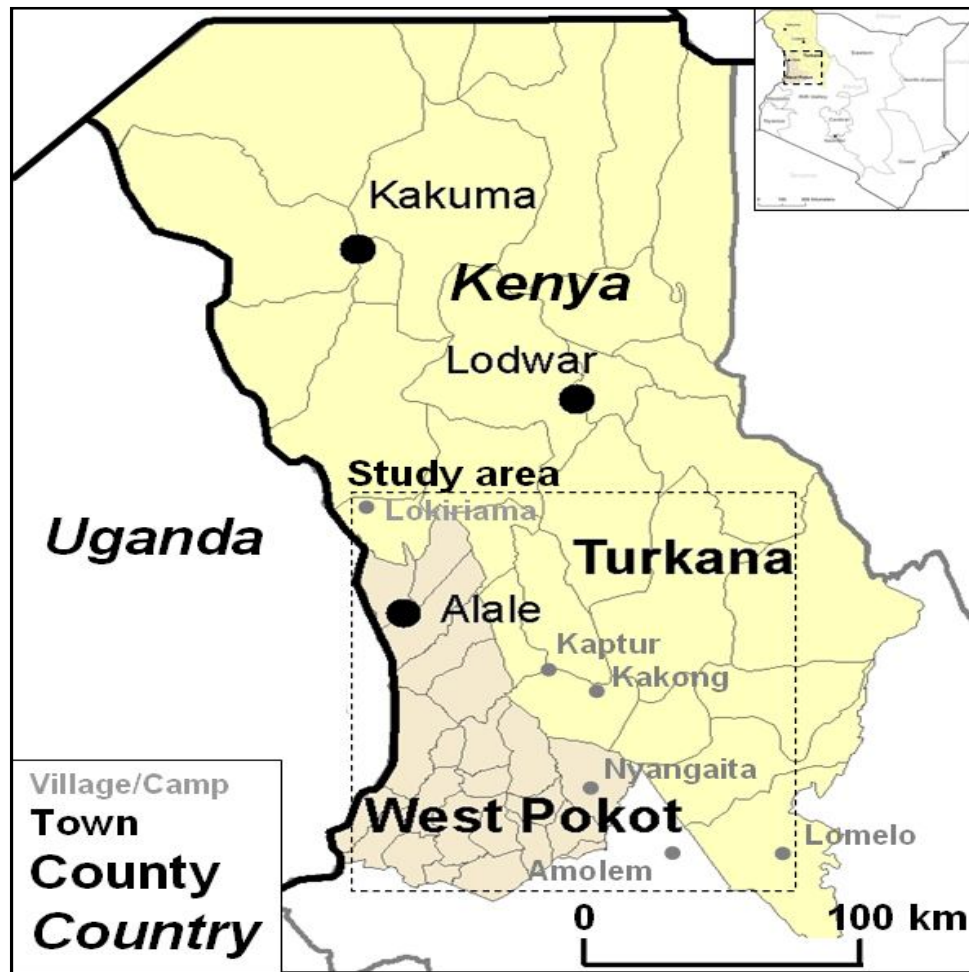


Figure 1. Study areas in Turkana and Pokot counties, Kenya.

Vétérinaires Sans Frontières-Belgium (VSF-Belgium), developed and implemented community resource use plans and inter-community reciprocal grazing agreements as strategies for mitigating resource-based conflicts. The study covered 10 mobile pastoralist villages namely: Lokwamusing, Elelea, Kakongu, and Kaptur in Turkana County and; Amolem, Nyangaita, Amaler, and Tikit in Pokot County. Data collection within the DMI project was conducted between August 2008 and December 2010. The fieldwork involved focus group discussions (FGD) and key informant interviews with herders, elders, raiders, opinion leaders, local provincial administrators and officials of development agencies working in the study area. Eight FGDs, each comprising 20 to 25 persons of different gender and age groups sampled from each village, were conducted. In order to answer the research questions, data collection focused on livestock grazing movements, resources availability, conflict causes, livestock raiding and mitigation strategies. Other sources of information included informal discussions with government officials, development agencies workers and

local leaders, and direct observations in the field. Data collection for the doctoral thesis was conducted in March and between September and December 2011 in the Southern Turkana and the Northern West Pokot regions.

Individual interviews using semi-structured questionnaires and FGDs were used to gather data from 166 persons, including community members (raiders, pastoralists, elders, chiefs and women), as well as representatives of governmental and non-governmental organizations. The questionnaires were group specific but had a common set of core questions designed to understand the main drivers of the conflict and potential mitigation measures.

The FGDs were further used to explore issues which turned out to be contradictory during the interviews. In addition to the field data, secondary information from various governmental agencies such as Conflict Early Warning and Response Mechanism (CEWARN) and non-governmental organizations such as Turkana Pastoralist Development Organization (TUPADO) was synthesized and incorporated. The data was analyzed within and

across groups using the statistical package for social sciences (SPSS) to generate descriptive statistics.

RESULTS

Human and livestock population characteristics

The Turkana (72.8%) and Pokot (27.2%) were the main ethnic groups in the study area. Lokwamusing, Elelea, Kakongu and Kaptur Divisions in Turkana south District had a human population of 23,828 persons, while Amolem, Nyangaita, Amaler and Tikit Divisions that form Pokot Central district had 8,881 persons.

The average population density was 12 persons per km² and 61 per km² for Turkana South and Pokot Central districts, respectively (GoK, 2010b). However, it was observed during the study period that, these figures are subject to constant fluxes given the nomadic nature of communities living in the region. Frequent population influxuations from other areas into Kangitit, Lopii, Lomelo, Napeitom, Kamuge, Akiriamet, Nasolot, Sarmach, Kainuk and Masol areas that lie at the border of the territories of the Turkana and Pokot communities was reported during the study.

The livestock species kept, average household herd sizes and livestock populations for Turkana South and Pokot Central are summarized in Table 1. The livestock types include cattle, sheep, goat, camel and donkey. In both the Turkana and Pokot pastoral communities, goats were the most dominant species in the household herds followed by sheep, and cattle. Although the overall livestock population was found to be higher in Turkana than Pokot community, the highest margin was observed in the camel population, with the Turkana holding over 99% of the estimated herd size in the region. The livestock population in the study area was reported to follow spatial and temporal fluctuations in human populations occasioned by mobility.

Livestock grazing movements

Information obtained from the elders and herders indicate that livestock mobility is the main strategy used by the Turkana and Pokot pastoralists to cope with climate related-risks and uncertainties associated with resource fluctuations. During the dry seasons, the Pokot herding itineraries begin at their traditional homelands on the west over to the neighbouring areas of Turkana South district, then towards Samburu District and back to their territory after the rains. During the dry seasons in Nyangaita and Ngaina, the Pokot move their herds towards Masol hills where they graze for two to three months before proceeding to Chepaywat towards the onset of rains. Between January and March, they move the herds from Chepaywat and Ngaina to Lotongot in Amolem.

In case the onset of the long rains in April is delayed, the herds take two main routes; some through Sarmach, Turkwel, Kainuk, Nakwamuru and Kaptir, while others move to Lomelo, Napeitom, Silale, Longewan and finally to Suguta valley. During the wet seasons in April-June and October-December, the herders from Turkana South graze their livestock in Katilu, Kaptir and Lokichar while the herders from Turkana East graze towards Lokori, Katilu and Lochakula (Figure 2). During the long dry season (January to March), both the Turkana and Pokot move towards the dry season grazing areas at the shared border. It is at this time that conflicts normally arise as the two pastoral communities compete to take control over grazing resources.

Resource availability and pastoral conflicts

The results show that pastoral conflicts occur mostly during the dry seasons when key resources (pasture and water) are scarce (Table 2). Due to insecurity arising from such conflicts, most of the grazing lands in the dry season grazing areas remain under-utilized, implying that livestock herds are confined to smaller and drier areas and thereby potentially contributing to rangeland degradation. The abandonment of the critical dry season grazing areas have negative ecological impact as the ungrazed lands lose productivity due to bush encroachment and invasion by undesirable and unpalatable species that replace key forage species (Krätli and Swift 2001).

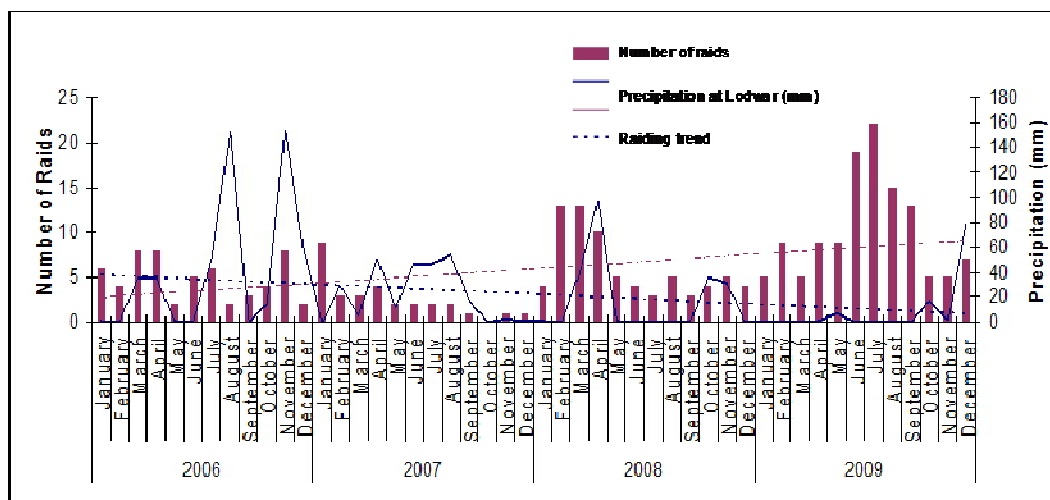
Community-based conflict mitigation strategies

Selection of the planning committees was found to be an important factor in the formulation of a successful resource use planning. Involving the communities in the selection of the planning committees fosters ownership, community cohesion, ensures equity and enhances sustainability of resource use plans. During the planning process, livestock herders, local authorities, administration officials as well as local political leaders were identified as the lead stakeholders in the range use planning process. Other stakeholders included the County Council and Government institutions such as the Ministry of Lands, and Ministry of State for Development of Northern Kenya and other Arid Lands.

Building capacity of resource use planning committees and the target communities was found to be a prerequisite for successful conflict mitigation planning processes, as well as a vital tool in reinforcing the agreed grazing practices. Multi-stakeholder participation, collaboration and consensus building between the planning committees and key players were reported to be indispensable for a successful land use planning and conflict resolution. Interviews with key informants in the sampled villages revealed that the community leaders together with local public and informal institutions are

Table 1. Estimated livestock population in Turkana South and Pokot central districts.

Type of livestock	Turkana South		Pokot Central	
	Mean household herd size	Total number of livestock	Mean household herd size	Total number of livestock
Cattle	24	685,832	16	479,212
Sheep	59	1,682,418	25	746,300
Goats	100	2,846,748	67	1,513,141
Camels	15	412,577	1	1,050
Donkey	10	273,686	6	6,559

**Figure 2.** Grazing pattern of the Turkana and Pokot herds.

currently responsible for land and other natural resources related decisions. One important lesson learnt from the project is that range resource use planning should be carried out at ecosystem level rather than basing it on specific administrative boundaries.

This is because pastoralists and their herds are mobile and ecosystems and livestock grazing resources transcend the administrative boundaries. It was reported that after developing participatory land use plans, it became necessary to institutionalize the negotiated reciprocal grazing arrangements as one way of further minimizing the resource competition and conflicts between the Turkana and Pokot pastoralists. Table 3 presents the strategies proposed by communities to mitigate resource-based conflicts, the envisaged benefits and challenges for their implementation.

In order to minimize resource use conflicts during droughts, there is need to strengthen the existing local institutions mandated to implement the land use plans; develop the inter-communities resource use plans; encourage inter-community dialogues and experiential learning; and promote alternative livelihood strategies that are compatible with pastoralism. Equally emphasized was the need for local institutions' representatives to

work jointly on procedures of maintaining peace in the shared grazing areas, as well as creation of by-laws to govern resource use.

DISCUSSION

Mobility and herd diversification

In-depth discussions with the key informants revealed that herd mobility is one of the key strategies used by the Turkana and Pokot pastoralists to cope with climate related-risks and uncertainties associated with resource fluctuations. Under normal circumstances, each community in north-western Kenya has its own grazing territory over which they have an exclusive right of access. In addition, they traditionally acquire secondary rights to neighbours' territories through the principle of reciprocity especially during droughts. The constant fluctuation of human and livestock populations reported in the study area attest to the inter-territorial herd movements. Whereas herd movements are restricted to each community's own territory, protracted droughts normally lead to inter-territorial movements, which in the

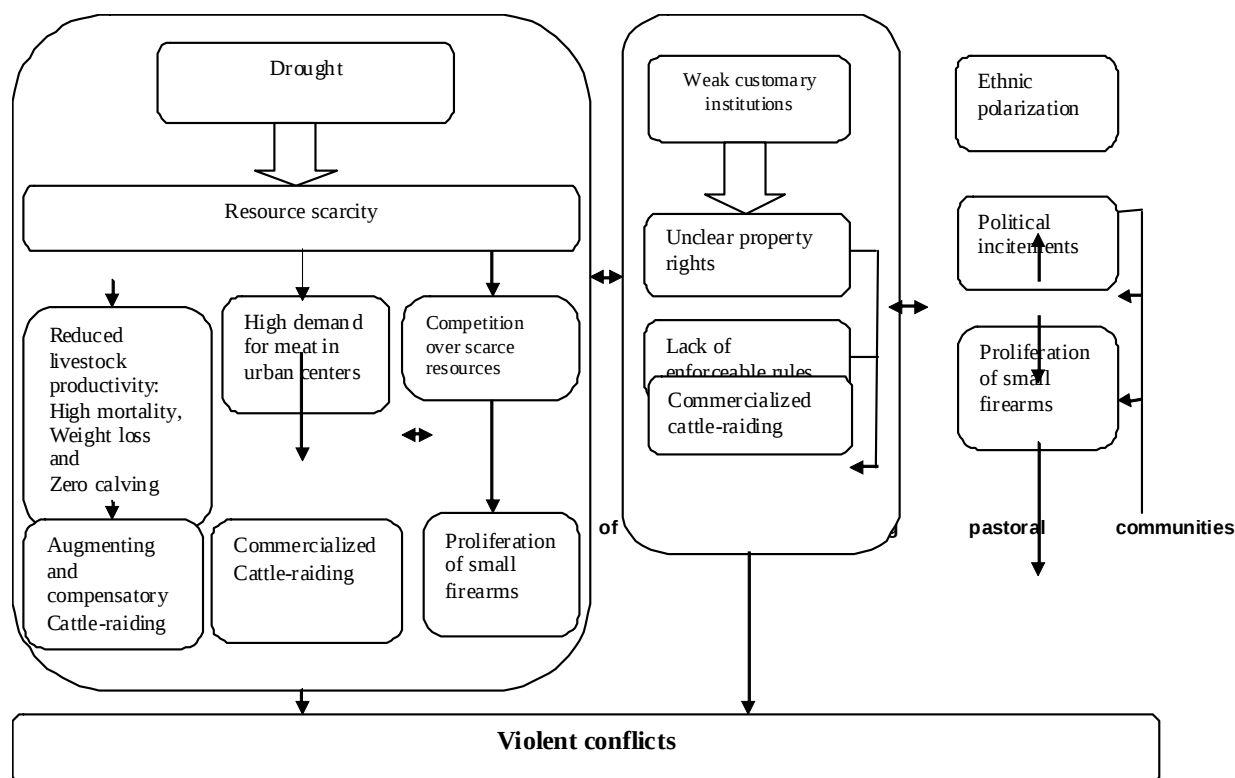


Figure 3. Precipitation and number of raids in Turkana between 2006 and 2009 (Source: Schilling et al., 2011).

absence of prior resource sharing agreements, trigger clashes among communities over key resource areas (Mureithi and Opiyo, 2010). Despite the frequent conflicts, insecurity, droughts, disease outbreaks, and cattle raids that disrupt their grazing patterns, the Turkana and Pokot herders follow relatively well-defined seasonal grazing routes.

Besides mobility, rearing of mixed-species herds is another coping and risk management strategy employed by pastoral households to optimize the use of heterogeneous ecosystem and meet different socio-economic obligations. Livestock species have different uses, feeding preferences, levels of physiological and behavioural adaptation, and tolerance to environmental stressors. Therefore, keeping a herd of mixed species is necessary for exploitation of the different ecological niches and the animals' complementary adaptabilities, as well as for meeting social and economic needs. The higher population of sheep and goats (collectively referred to as shoats) was partly attributed to their drought tolerance and socio-cultural roles. In addition, shoats can be readily sold for cash to meet basic needs of pastoral households.

The large disparity observed between the Turkana and Pokot camel herd sizes can be explained by cultural preferences. Customarily, the Pokot do not keep camels but have in the recent past adopted camel keeping because of its drought tolerance and disease resistance.

The Pokots' shift to rearing of camels is an adaptation to the increasing frequency and severity of droughts in the recent past, a strategy that underscores the flexibility of pastoral production systems in response to a changing climatic conditions and environment.

Resource availability and conflict nexus

The positive correlation between resource scarcity and conflict corroborates the findings of Aredo and Ame (2004) and the environment-conflict paradigm, which suggests that unfulfilled needs for scarce water and pasture fuel conflict between pastoralist groups (Homer-Dixon, 1999; Sulim, 1999).

In contrast, other studies (Witsenburg and Adano, 2009; Butler and Gates, 2010; Theisen, 2010) show that cattle raiding in Kenya escalates during the wet seasons. Witsenburg and Adano (2009) correlated monthly rainfall data with cattle raiding data from 1960 to 2006 in the Marsabit district of Northern Kenya and found that wetter years had more than twice (50) as many people killed in violent raids as compared to drier years (23). They associated this trend to the opportunistic behaviour whereby raids increase when there is need to restock after a devastating dry spell, when livestock are stronger to walk long distances and healthier to fetch better prices and when there is enough bush cover for the raiders.

As indicated by Schilling et al. (2011), raiding in the months preceding the long rains (March to May) and short rains (October to December) could be explained by raiders' anticipation of favourable conditions for herd re-building after dry season losses. However, in their analysis to determine the relationship between climate and raids in the study area, Schilling et al. (2011) found no clear correlations between the number of raids and the level of precipitation (Figure 3). This is contrary to a study by Meir and Bond (2007), which reported a positive correlation between pasture abundance and the frequency of raids in the borderline areas of Uganda, Kenya and Ethiopia.

Using analytical framework of a Contest Success Function (CSF), Butler and Gates (2010) corroborate the findings of Meir and Bond (2007) but point out that the positive correlation between conflict and resources abundance is contingent on property right regime. They argue that, in the absence of property rights, individual resources can be allocated either to production or to appropriation. The cattle-raiding trend in north-western Kenya can be attributed to a case where the actors chose to allocate their individual resources to appropriation as opposed to production. However, more contrary findings bring to the fore the contest between the theories of "resource abundance" and "resource scarcity". As observed by Witsenburg and Adano (2009), the high correlation between raids and pronounced drought of 2009, challenges the generally accepted assumption that during severe drought periods, water and pasture is shared peacefully.

One explanation for the contradictory findings on the relationship between raiding and climatic conditions can be that there are different types of cattle raiding, which may overlap time. Generally, there are two types of raiding: First, raiding to acquire livestock either for restocking or commercial purposes (Figure 4). This type is mostly conducted just before and during the long and short rains in anticipation of favourable conditions for herd re-building (Eaton, 2008; Witsenburg and Adano, 2009; Schilling et al., 2011). The augmenting and compensatory cattle-raiding is an integral part of pastoral culture in Africa, mainly used to acquire livestock for restocking purposes after losses due to drought, raiding and death, and to meet customary obligations such as payment of dowry and, as a rite of passage for young men into manhood. Such raids are traditionally sanctioned by elders and governed by customary values (Kumssa et al., 2009).

However, the current form is a departure from the traditional one and has been commercialized due to improved access to markets because of growth of urban populations and infrastructure close to pastoral regions (GoK and UNDP, 2007). In contrast, the second type of raiding is used as a means to gain or secure control over critical resources (Mkutu, 2007). This type of raiding is higher during the dry season as suggested by the

findings of this study. In view of the foregoing logic, it is apparent that cattle raiding, a major source of violent conflicts in pastoral areas occurs during the dry periods as well as in the rainy seasons.

This therefore, suggests that the two contesting resources-based theories apply not as discrete scenarios but in a "resource abundance-resource scarcity" continuum, thereby creating non-deterministic relationship between resource availability and pastoral conflicts. Schilling et al., (2011) explains this scenario using the concept of "Resource Abundance and Scarcity Threshold" (RAST), which hypothesizes that, in case the rains partly or completely fail, a certain threshold of resource scarcity is reached that triggers raids regardless of the prevailing unfavourable restocking conditions. The deterministic relationship between resource scarcity and violent conflicts is however, rare to non-existent under pastoral set up due to customary institutions that foster relations between neighbouring and distant pastoral communities, for example, through reciprocal resource sharing. It is therefore, in the absence of strong traditional institutions and existence of external interference (extreme climatic events and unfavourable Government policies) that violent conflicts thrive (Figure 4). Berger (2003) highlights some of the potential pastoral conflict drivers such as, natural resource scarcity, competition, ethnic polarization and poverty.

In order to develop effective conflict mitigation strategies, it is imperative to understand the fundamental causes of conflict and the motivation of the conflict actors. In our study, we find the major conflict causes to be asymmetric. On the Turkana side, drought-related hunger, poverty and lack of pasture are the central conflict stimuli, while on the Pokot side the accumulation of wealth, payment of dowry and the expansion of territory are the main motives behind raiding (Table 2). This finding corroborates those of a study by Eaton (2010) which indicated that raided livestock is often not kept but predominantly sold to traders. Indications for this tendency were found in interviews with elders, and government officials. The key informant interviews revealed that three decades ago, the Turkana and Pokot pastoralists organized raids in large groups of 50 to 100 men ("mass raids"), but today they raid in groups of three to ten and can conduct five to eight raids at a time in different areas. Other mentioned causes of conflicts include proliferation of automatic firearms, political incitements, and disputes over territorial boundaries and control of key resources.

These findings are consistent with those of Mwaniki et al. (2007), Mkutu (2007) and Kumssa et al. (2009) who reported similar causes of violent conflicts among north-eastern Kenya and southern Ethiopia pastoralists. It is, therefore, evident as presented in Table 2 and Figure that violent conflicts in pastoral areas result from a number of factors that jointly limit availability of, deplete and reduce access to natural resource base. These factors are

Table 2. Causes of conflict and raiding motives in north-western Kenya.

Causes of conflict	Raiding motives (ranked by importance)	
	Turkana South	Pokot North and Central
1. Cattle raiding	1. Hunger / poverty	1. Payment of dowry
2. Territorial control and tenure claims over key resources	2. Drought / lack of pasture and water	2. Wealth accumulation
3. Unclear land rights and government policies	3. Payment of dowry	3. Defending / expansion of territory
4. Political incitements	4. Defending / expansion of territory	
5. Proliferation of small firearms		
6. Weak presence of state security machinery		
7. Ethnic polarization and historical rivalries		

Table 3. Strategies proposed to mitigate drought-induced conflicts in north-western Kenya.

Suggested interventions	Potential benefits	Challenges
Development of inter-community resources use and grazing management plans	Organized and sustainable resource use, enhanced mobility and access to pasture and water	Ethnic polarization and, frequent and prolonged droughts make it difficult to follow the grazing plans
Strengthening of existing customary institutions and conflict-resolution mechanisms	Enhanced acceptability, ownership and sustainability of established grazing plans and inter-community conflict resolution mechanisms	Weak or absence of local institutions and failure of the state to recognize the role of customary institutions in conflict resolution
Development of inter-community reciprocal grazing agreements between pastoral communities	Enhanced mobility, access to grazing resources and peaceful sharing of resources across territorial boundaries	Absence of effective customary institutions and increased ethnic polarization and political incitements
Resolution of the disputes over administrative boundary in the interface land of the Turkana and Pokot communities	Increased access to dry season grazing land and reduced disputes over resource ownership and access rights	Weak or absence of local institutions and lack of community involvement by the state in demarcation of administrative boundaries and, ethnic animosity and political incitements that deter consensus
Strengthening of state security presence in the conflict hot spots	Improved security leading to increased mobility and access to dry season grazing, minimal cattle raids and conflicts	Inadequate state personnel, infrastructure and ill-informed government approach to pastoral conflicts
Mainstreaming of communal land tenure in the national land policy	Devolved resource governance and secure land rights that enable enforcement of customary resources use regulations leading to sustainable resource management	Weakened local institutions and lack of appreciation of traditional resource governance systems by the decision makers
Promotion of exchange visits and interaction between communities	Increased inter-community dialogues and experiential learning and, strong inter-community social alliances	Political incitements, ethnic animosity and lack of financial resources required to facilitate exchange programmes
Promotion of livelihood diversification options compatible with pastoralism	Diversified asset portfolios that complement livestock-based livelihoods and, therefore cushion pastoral households from diverse impacts of drought and other shocks	Little effort by the state to commit resources for developing and promoting viable livelihood options and, limited choices of viable activities in the drylands besides livestock rearing

related to changes in the pastoral ecosystem that are directly or indirectly linked to natural resource, resource users and the larger geo-political system that undermine pastoralists' capacity to adapt to social, political and environmental shocks (GoK and UNDP, 2007).

Pastoral conflict mitigation strategies

Cattle raids have been reported by many (Omollo, 2010; Moru, 2010; Schilling et al., 2011) to be among the

main causes of violent pastoral conflicts in north-western Kenya. Traditionally, raiding related conflicts were resolved through mediations steered by council of elders (Edossa, 2005; Eaton, 2008). Following a raid, the aggrieved community through their council of elders would initiate consultation with the elders from the raiders' community to negotiate for compensations and punishments of the culprits in a non-violent manner. The recurrent and prolonged violence between the Pokot and Turkana partly points to the weakened customary conflict resolution institutions and overall decline of the influence

of the elders on the youth's activities. The role of the elders in conflict mitigation has been further undermined by the Government's attempts to take over conflict resolution in pastoral areas (Knighton, 2003; Mieth, 2007; Schilling and Remling, 2011).

At County level, the State security system is coordinated by the District commissioner who relies on the information from the local chiefs to take action on already executed or intended raids. This however, becomes cumbersome when raiding occurs across different administrative boundaries, as information has to be relayed back and forth over a long command chain. Due to poor roads and communication infrastructure as well as underequipped security personnel, the Government system may only prevent the traditional mass raids, which require a longer period to organize and are therefore, easier to detect as opposed to the contemporary raids.

According to the Tupado (2011) conflict register, the Government took action in 13.4% of the raids reported between 2006 and 2009 and recovered 8.2% of the stolen animals. Not surprisingly, the majority of both the Pokot and Turkana expressed disappointment and distrust towards the Government's conflict mitigation efforts. The pastoralists, elders and women from both communities expressed similar views indicating the need to change focus from disarmaments to address the root cause of conflicts in an integrated approach. As an alternative to the state's reactive response to pastoral conflicts, participatory rangeland use planning that is consistent with the principles of traditional resource and conflict management systems, has the potential to mitigate drought-induced resource based conflicts. According to Berger (2003), resource-based conflict mitigation begins with the premise that access, ownership and management of resources are intricately linked and therefore conflict resolution cannot be addressed in isolation from resource use and management. During the past two decades, the concept of land use planning emerged to be one of the most suitable and innovative tools for sustainable utilization of limited resources in the rangelands (Morton, 2001). Land use planning has also become an avenue for successful negotiations over tenure, access and resources stewardship rights to avoid potential conflicts among pastoralists.

At the core of the proposed interventions are the recognition and strengthening of traditional institutions and involvement of all stakeholders in conflict resolution. However, the already weakened customary institutions, inappropriate government approaches to conflict resolution and extreme climatic events, present a significant challenge to the realization of the desired results. As observed by Brown et al. (2007), the adaptive capacity of pastoralist communities currently seem not to be sufficiently robust to respond to the otherwise ordinary stressors and, therefore, extreme climatic variability can only exacerbate the situation. Weakened resource

governance institutions work in concert with insecurity, reduced mobility, diminishing resource base and a myriad of socio-political factors.

Together, these undermine pastoral risk management strategies and resilience to changing climatic and environmental conditions. One of the primary manifestations of this is large scale losses of livestock and famine that make pastoralists chronically dependent on food aid and susceptible to various stressors, among them, violent conflicts.

Conclusion

This study shows that competition for scarce natural resources aggravated by frequent droughts is central to the violent conflicts witnessed in the study area. The persistence of conflicts in north-western Kenya is an indication of weak local institutions, disregard of traditional role of communities' participation in resolving resource-based conflicts, ill-informed interventions that address the symptoms instead of the root cause of the problem, and inadequate policies to address complex tenure issues in pastoral areas. Therefore, development of integrated policies and institutions rooted in traditional practices for managing natural resources and inter-community conflicts is central to finding lasting solutions for recurrent unrest in the study area.

Communities' participation in the elaboration and formulation of pastoral policies and implementation of resource and conflict management interventions is crucial for uptake and sustainability. However, any conflict resolution intervention must be cognizant of other equally important factors that work in combination with drought to cause resource scarcity thereby triggering competition and violent conflicts. Chief of these conflict catalysts are weak local institutions, poverty, proliferation of small firearms, political incitements, unclear property right regimes and commercialized cattle raiding.

Several recommendations key to achieving sustainable conflict-free resource sharing among pastoral communities arise from this study:

1. Integration of customary and statutory institutions of governance by recognizing and supporting enforcement of the customary regulations;
2. Enhancement of the presence and capacity of the state and community security and justice systems;
3. Ensuring that all conflict resolution interventions in pastoral areas are planned and conducted in a manner that is sensitive to local values and priorities; and
4. Application of conflict-sensitive approaches to pastoral development.

The authors conclude that diminishing natural resource base does not automatically lead to violent conflict if there are functional local institutions, enforceable and

respected land use plans, and mechanisms for negotiating cross-territorial grazing access in periods of scarcity. Participatory land use planning complemented with reciprocal grazing arrangements, therefore, provides the basis for achieving sustainable peaceful resource sharing among pastoral communities not only in north-western Kenya but also in other areas which bear similarities with the region.

ACKNOWLEDGEMENT

The authors would like to express their gratitude to the Turkana and Pokot pastoralists who volunteered information on this article. We also convey our gratitude to various agencies that supported this research study in one way or the other such as VSF-Belgium, Practical Action, Oxfam GB, and VSF- Germany, ACTED, International Rescue Committee, Reconcile and Tupado.

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