

The impacts of conflict on household vulnerability to climate stress: evidence from Turkana and Kitui Districts in Kenya

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Abstract

While resource conflicts and violence are evident in many dryland areas of East Africa, there is a lack of systematic knowledge of how they affect household livelihoods and in particular capacities and ways of coping with drought and other climate stresses. With few exceptions, analytic frameworks for assessing vulnerability in drylands do not provide insights into the impacts of conflict on livelihood activities, household assets, food sources, social relations and access to resources. Analysts commonly take it for granted that household livelihoods are assembled in peaceful and stable settings. Conflict and violence are treated as epiphenomenal, if they are considered at all. In this paper, we discuss the need to examine the impacts of conflict on livelihoods and household vulnerability to climate stress. We present preliminary results from data collection carried out in 2004 in two case study sites, Turkana and Kitui Districts in Kenya. The study shows that conflict is having major impacts on coping strategies and the social distribution of vulnerability in the two communities. We conclude that conflict forms part of structural processes to gain control over resources or strengthen livelihoods and coping strategies and thus they represent a manifestation of political processes driving vulnerability. The research demonstrates some of the important linkages between climate change and human security.

1. Introduction

In this paper, we investigate the impact of conflict and violence on household vulnerability to climate stress in two sites in Kenya. Conflict and climate stress are two critical challenges faced by many African populations. While resource conflicts and violence are evident in many dryland areas of East Africa, there is a lack of systematic knowledge of how they affect household livelihoods and in particular capacities and ways of coping with drought and other climate stresses. Climate stress is prevalent in much of sub-Saharan Africa. In the drylands of East Africa, climate stress is exemplified in present year-to-year variability, seasonality, uncertainty and patchiness of rainfall and extreme events such as droughts and flash flooding. It does not necessarily include observed or projected long-term changes in climate conditions, although such changes may lead to an increase in extreme events such as drought (McCarthy et al. 2001). A large body of literature is devoted to understanding the assorted adjustments and their corresponding techniques for living with such variability and uncertainty. Within the climate change literature, there is an expanding interest in vulnerability and capacities to adapt to changes. However, analysts commonly take it for granted that household livelihoods are assembled in peaceful and stable settings. Acknowledgment that vulnerability is shaped by multiple stressors, including conflict, rather than climate change as a single stressor is fairly recent (O'Brien and Leichenko 2000). As a consequence of a single stressor focus, climate change adaptation has mainly been viewed as a series of technical adjustments that occur automatically provided there is sufficient 'adaptive capacity'. Such 'adaptive capacity' is commonly measured in terms of national indicators of technology, economic and institutional resources (Cohen et al. 1998; Yohe and Tol 2002; Eriksen and Kelly, 2005). There is an implicit assumption that 'appropriate' adaptation to climate change will occur automatically given transfers of technology and accompanying economic resources (Smith and Hitz 2003; O'Brien et al 2004). Too often, the local social and political context is missing from such analyses. While there is growing comprehension of the social and political dimensions of adaptation, little is known about how conflict and violence shape local level vulnerability and the techniques and processes through which households adapt to climate constraints.

We present preliminary results from data collection carried out in 2004 and 2005 in two case study sites in Turkana and Kitui Districts in Kenya. These sites exemplify how conflict affects household coping and adaptive strategies. The two are dryland sites where managing short-term climatic fluctuations as well as adapting to long-term changes is critical to sustain rural production systems. They were selected to demonstrate the range of conflict types experienced in drylands, as well as mixed farming and pastoralist population groups, representing the two main agricultural production systems in drylands. The impacts of conflict and violence on livelihoods are evident in much of northern Kenya, which is inhabited by predominately pastoralist peoples. Across this vast region, livelihoods are compromised by threats attributed to large-scale livestock raids and smaller-scale opportunistic attacks by armed bandits. Pastoralists inhabiting such areas must, for example, adjust grazing and farming methods in relation to the likelihood of conflict at specific times and to locations of recent insecurity. Conflict centered on access to and utilisation of forest resources, hills and wetlands affect the options available for generating livelihood in the vast drylands of Kitui in Eastern Province, as well. Kitui is inhabited by Akamba peoples who combine livestock-keeping with small-holder farming as well as Oroma and Somali

pastoral groups who visit the area seasonally. In particular, the hills are important for coping with drought. They have permanent sources of water and forests that provide food and income during drought. Conflict between local households and authorities, who want to constrain access to the hilltop forests, limit drought coping options. In addition, conflict between different agro-pastoralist groups as well as between agro-pastoralists and nomadic pastoralists over use of water and grazing leads to loss of crops and livestock as well as, occasionally, lives, which are all key livelihood assets used in drought coping.

People's ability to cope with and recover from climate related and other stresses is taken as an entry-point to understand adaptation. Livelihood and coping strategies refer to the ways that people manage climatic variability among other types of change. Adjustments in these strategies are what is meant by adaptation in a local context. Coping strategies are methods used by households to survive when confronted with unanticipated shocks and stressors whereas adaptation involves adjustments over the longer-term to enhance longer term livelihood security. Adaptation in the context of this study refers to adjustments in the use of resources in relation to climate stress (events such as drought and flooding, uncertainty and patchiness of rainfall). Adaptation is neither unproblematic nor automatic. It takes place in a dynamic and multi-stressor environment, may exacerbate existing resource conflicts as well as exclude some groups from resource access and contribute to the marginalization of the poor. Adaptation measures may thus change the distribution of resources and have implications for equity.

The main research question that this study addresses is how does conflict and violence influence and constrain ways of managing and adapting to climate stress? A related question is how does conflict and violence affect patterns of vulnerability? First, we examine the nature of the insecurity in the two sites. What are its broad impacts on people's lives? Second, we examine how insecurity and conflict have shaped adjustments in livelihoods over time, and specifically current strategies to cope with climate stress. Individual and household options to secure livelihoods during a 2004 drought incidence in both sites are studied. Third, we investigate how insecurity affects social differentiation of vulnerability. Which individuals and groups are particularly vulnerable to conflict and violence and which individuals and groups are particularly vulnerable to drought? Which groups gain, or seek to gain, material wealth, livelihood security or power from conflict? Finally, we consider the implications of the research findings for how adaptation policies can best target those with few options and are most vulnerable in a community. The study shows that conflict is having major impacts on coping strategies and contributes to increased social differentiation in terms of vulnerability to drought among the population at the two sites. We argue that conflict forms part of structural processes to gain control over resources or strengthen livelihoods and coping strategies and thus they represent a manifestation of political processes driving vulnerability.

2. Methods

Comparative case study analysis

The research questions are investigated through comparative analysis of two dryland areas in Kenya that are exposed to drought stress and are affected by conflict and violence. Three to four villages were visited in Kitui and Turkana Districts in Kenya (see Fig 1). The study areas are described in more detail below. There are differences between the study areas in the type of insecurity as well as production systems. While drought coping strategies may vary between the sites, the selected study areas allows for investigation of commonalities in political processes driving vulnerability and social manifestations of vulnerability that may exist across contexts.

The case-study approach (George 1979; Yin 1994; Fotheringham 1997) provides an appropriate means of exploring coping and vulnerability. Case studies are a useful tool when contextual conditions pertinent to the phenomenon are to be investigated as well as the phenomenon. Comparative case study analysis can be particularly informative when investigating factors that lead to variation in a phenomenon. In this study, two cases differing in production types (pastoral and agro-pastoral) and types of conflicts are compared in order to investigate whether the way that conflicts affects adaptation to climate stress displays some common patterns across contexts. In particular, we want to investigate the particular ways that conflict affects adjustments to livelihoods over time as well as coping options during a particular drought event. We also examine how conflict and insecurity affects the social differentiation of vulnerability, in terms of whether specific groups can be identified that are particularly vulnerable or which gain, or seek to gain, material wealth, livelihood security or power from conflict.

Endau is one of several hilltops in Kitui District. It lies between the central highlands of Kenya and the coastal forests. From the dry plains lying at 500 masl, the hill rises to several peaks, the highest at 1400 masl. Practically all the forest from the foot of the hill to the peak has been gazetted government forest. The hill is critical to people's strategies to manage drought in the area. It serves as a water catchment and has permanent sources of water, the relatively favourable microclimatic conditions on and around the hill compared to the dry plains allow cultivation of crops, and the forest itself provides dry season fodder for livestock as well as forest products. The four villages investigated around Endau hill in Kitui District included Ikisaya to the west of the hill, Malalani to the north of the hill, Twambui to the northeast of the hill and Ndetani to the southwest of the hill. This geographic spread of the sample was designed to capture the different conflict situations on different sides of the hill. In particular, government restrictions on farming on the hill and drought access to forest resources had played an important role in the history of conflicts in the agro-pastoral communities in Ndetani and Ikisaya, and contributed to out-migration and landlessness from the more pastoral Malalani. Raiding had occurred on all sides of the hill, but conflicts between population groups related to drought access to water and pasture were most pronounced in the mainly pastoral Malalani and Twambui.

Field research was conducted in three areas of Turkana District. The main considerations in selecting Kalokol, Kakuma and Katilu as study areas in Turkana site were the intensity and nature of insecurity, which vary between the different sites, as well as the livelihood activity that is most widely practiced in each site. There are important differences between the study areas in their ecology and local livelihoods, relief and development inputs, and their history of displacement, migration and settlement. Another factor that influenced the choice of the study sites was an interest to follow up a field

study on coping strategies and food sources in Turkana that was done in 1991 by a team from the Institute for Development Studies (IDS) in Sussex. The IDS team worked in three study sites: Kalorukongole, a fishing village outside of Kalokol, Lopur, a pastoralist community outside of Kakuma, and Kaputir, an agro-pastoralist community on the Turkwel River in southern Turkana. There was an interest to work in comparable sites in fieldwork undertaken for this study in order to develop a rudimentary time series on coping strategies.

Data collection

Data collection for the two areas was carried out in 2004 and 2005. A four person team carried out a social survey in four villages situated around the Endau hilltop forest in Kitui District, Ikisaya, Ndetani, Malalani and Twambui. Complementary data were provided by an ethnobotanical survey of Endau forest carried out by a three person team. Thirty seven semi-structured interviews and ten key informant and focus group interviews were carried out in the Kitui site in 2004 and a total of 24 household, focus group and key informant interviews were carried out in 2005. During the 2005 data collection, a minimum of four interviews were carried out in each village, totaling 24. Households that displayed particular histories to be followed up in greater depth were selected from those interviewed in 2004, such as landlessness, bereavement due to conflict, eviction from the forest, or role in local institutions, groups or political positions. Both male headed and female headed households, interviewees of different ages and of different relative wealth status were included in the selection. Particular care was taken to include members of different clans, an important factor determining social, economic and political stratification. Focus group discussions were carried out with women's groups, groups of elders (men), and a youth group. In order to collect the information required to answer the research questions, particular themes were covered in interviews. These themes included people's identity and how it affected their perceived rights to resources; clans, customary institutions and power relations; changes in coping strategies since 2004 and in particular how conflict had affected differential coping strategies between households; which households had been most vulnerable during the drought; use and marketing of forest products; changes over time in migration, economic activities, the conflict situation and environmental conditions; and rights to land and water sources and how such rights are gained or lost. During interviews, a list of questions pertaining to these general themes was used as a point of departure, each interview covering the two or three themes on which the interviewees life history could reveal particular insights. Informal discussions through interaction with people such as during meals or in the market place, observations of activities and invitation to homes were also important sources of data regarding power relations, conflicts and access to resources.

In Turkana, comparative data were drawn from forty five household interviews carried out early in 2005. Qualitative interview data was gathered in order to investigate particular issues in more depth with selected households and in order to identify changes in livelihoods and coping strategies over time. A four person team carried out research in three areas of Turkana District: villages near to Kalokol in proximity of Lake Turkana, villages near to Kakuma in the northern part of the District bordering Uganda, and in Katilu, site of an irrigation scheme along the Turkwel River in southern Turkana. A more detailed description of the study sites is in the following sections.

Fieldwork consisted of a household survey, interviews and discussions with key informants, and focus group discussions. The focus group discussions covered a checklist of questions. Group discussions with women focused in particular on vulnerability and food shortages while group discussions with men focused on droughts and coping strategies. However, research assistants were flexible to focus on issues they felt to be important and to follow up issues raised by participants in the groups. A feedback session was held after the focus groups to discuss issues that came up during the groups and to identify key issues to follow up in the household survey and discussions with key informants.

A household survey covering forty-five households was carried out. The questionnaire-interview technique was used, with specific questions divided into sections on livelihoods and markets, food sources, insecurity, droughts and coping strategies. Open-ended questions were used to encourage people to respond in narrative, in other words to share stories and personal experiences as a way of illustrating important local events, and trends in insecurity and coping with droughts.

Discussions and interviews were carried out with key informants including an area councillor, kraal leaders, administrative officials, elders, women's groups, church leaders, cooperative leaders and individual herdsman and farmers. The aim of these was to explore in some detail anything notable coming out of the household survey and focus groups. Discussions with key informants also covered pre-determined question-exercises, including drought and conflict trendlines, and ranking exercises on vulnerability to food shortages and coping strategies.

This paper focuses on the preliminary findings from the data collection. The policy implications of the research are gleaned with the help of a project policy consultation workshop with climate change focal points and national level policy makers held in Nairobi in January 2005. In addition, a consultation workshop was held in February 2005 with district level departmental heads and members of the communities in Kitui where research was carried out.

dominated by particular Akamba clans. This history still shapes patterns of land ownership, resource access and socio-economic differentiation as the land on which different clans settled varies in its suitability for grazing as well as cultivation.

There are several types of conflicts in Endau. First, there are conflicts over access to the forest on the hilltop. Some people started settling on the hill in the 1930s and started cultivating crops that thrived in the slightly cooler and moister climate than that of the lowlands. The colonial government, however, decided that the forest should be protected, and evicted all people from the forest in 1948. While the local population and chiefs were unhappy about the eviction, they had little power to protest or voice their concerns against the colonial District Commissioner. People started settling on the hill again in 1966, soon after independence. Access to land had been a critical issue in the Kenyan fight for independence, and the local administration allowed settlement on the hill. Formally, however, the forest was gazetted and owned by the government, to be managed by the Forest Department. In the 1990s, there was increasing concern within the government department that the forest was being cleared, threatening water catchments, the reliable supply of water downhill and leading to erosion. In early 1996, the government gave those living on the hill two weeks in which to leave, after which any person remaining on the hill would be arrested. This created massive discontent among people who regarded the land they had cultivated for decades as theirs and who felt that the government had taken away their land, crops and livelihoods. Forcible eviction mainly took place on the Malalani side of the hill. On the Ikisaya and Ndetani side of the hill, most people had moved to the lowlands when water was piped in the 1980s. Some of the people who had moved to the hill on the Malalani side came from poor families and clans with little land or came from distant areas and had no land at the foot of the hill. Others had effectively lost land that they had originally had because other members of their clan or family, and in some cases their neighbours, were now cultivating parts or all of that land. Disputes and court cases over land ownership ensued – others decided to move to other sides of the hill and try to access land there. Several people remain landless as a result of the eviction. The eviction also reduced the diversity and reliability of harvests in Endau as several crops that thrived on the hill, including sweet potatoes, sugar, bananas, avocado, mangos and other fruit trees cannot easily be grown in the lowlands while maize is less reliable. The rules prohibit anyone entering the forest without a permit, preventing access to forest products or to permanent water sources.

The second type of conflict is violence related to raiding. In the 1970s, raiding of cattle started in the wet season grazing lands to the east and northeast of Endau. In addition to Akamba herders, pastoralist groups including Oroma and (Kenyan) Somali related groups use graze their cattle in these areas. Raiding peaked in the early 1990s, when pastoralist groups raided cattle in settlements close to the hill and even villages on the southwestern side of the hill away from the grazing lands, including Ikisaya and Ndetani. Armed with guns, households were attacked, the men often taken prisoners and used to carry the loot and help drive the cattle, then killed. The school and police station were also attacked in armed battle. The school closed, people fled, hiding in the forest, and cultivation was disrupted, people losing entire harvests. During this period of insecurity, people settled around Endau hill lost hundreds of cattle, some of them all their cattle, in addition to other possessions. Several lost family members, and many moved, in particularly from the least safe areas of

Twambui and Malalani in the north and east to the relatively safer areas to the southwest of the hill, including Ndetani. Some of the migrants were given land by relatives or clan members, while others essentially had to start as landless, building up their asset base afresh and buy new land. Businesses were robbed, burnt down and had to close, some of which have still not reopened due to the trauma experienced by its owners.

The interviews revealed local speculations that the raiding was instigated and sponsored by a powerful individual in the army with Somali background. They relayed accounts of raided cattle being driven into army trucks and sold in distant markets. The raiding also coincided with that individual's period of tenure, the violent raiding ceasing suddenly in 1993 when he was sacked from his post. On the other hand, there was also accounts of powerful Akamba individuals in the army, as a retaliation for having cattle raided, ordering the massacre of an entire pastoralist group, claimed to be Somali, including women, children and cattle 'to get rid of the problem once and for all' in the neighbouring district, Mwingi. Some smaller scale raiding of cattle continued in the easternmost areas of Endau until 1999, but no lives were lost. Akamba herders also stole cattle from Somali and Oroma related groups, though in smaller numbers. There was the feeling that if an Akamba herder stole cattle, the local administrator would apprehend the individual immediately and return the cattle to its Oroma or Somali owner, but that the administration in the neighbouring district, Tana River, never returned cattle stolen from Akamba herders. At the time of data collection, there was a great deal of suspicion among agro-pastoralists settled in Endau towards Oroma and Somali related groups, exemplified by allegations that pastoralists would poison their livestock when selling these to Akamba to prevent Akamba from gaining powerful herds. Kitui District administration were accused of being lax towards pastoralists by allowing them into Kitui District, which some Akamba felt 'belong to Akamba', and that no pastoralist should be allowed into the district without a permit. This was a sentiment shared by some administrators, although other administrators pointed out that there is freedom of movement according to the Kenyan constitution.

The third type of conflict centres on access to dry season water sources in the lowlands. The main sources of dry season water are shallow wells in Malalani and Twambui, while water has been piped from the hill to a few points in the southwest side of the hill, such as Ikisaya and Ndetani. Most of the shallow wells in Malalani and Twambui and Malalani are owned by a few families, typically those with land near the riverbed. Others who own no wells have to access water from these same wells, usually for free, but only after the owner has fulfilled his own water needs (wells, like land and livestock, are almost exclusively owned by men). Water access is important not only for domestic uses, but also for watering cattle during the dry season when water sources in the plains, as well as seasonal streams from Endau hill, dry up. In addition to the settled population using the shallow wells during dry seasons and droughts, Akamba herders come from other areas, such as the neighbouring district Mwingi, during dry spells, in order to water their cattle. These herders pay the well owners for access; in addition, they need to rent grazing land in order to feed their cattle while they are present in the area. The communities settled near the hill have shared wet season grazing areas with other pastoralist groups for generations; a new development in 2000, however, was the coming of pastoralist groups of Oroma and Somali origin to villages close to the hill during the dry season to rent access to shallow wells. The reason for this

recent development may have a number of reasons. Other dry season water sources in Tana River District may have become unavailable either due to decrease in streamflow or increase in livestock numbers and uses. Water, which had been relatively plentiful after the heavy El Nino rains in 1998, may have dried up by 2000. The particular groups coming to Endau may have been squeezed out of their original areas after conflicts with other pastoralist groups and lost access to critical dry season water sources that way.

The arrival of pastoralist groups has caused internal divisions among the settled population, especially in Twambui. Practically all families who own wells rent these out to pastoralists, at a much more profitable rate than the rate which herders from Mwingi pay. Mwingi herders, as well as the local population who depend on free access to the wells, are critical of other pastoralist groups who are allowed to pay a fee in order to use the wells. This is partly due to their own access being threatened and in part due to the history of raiding and killing by pastoralist groups less than a decade ago. There have been disagreements when Somali and Oroma cattle or camels have grazed in other areas than those rented, or groups have arrived with more livestock than for which they have rented well access and grazing land. There have also been disputes when the local population have stolen or killed pastoralist livestock; however, these are sporadic incidences that are normally settled through negotiation between elders and do not reach the court system. Meetings have been arranged among the settled Akamba population in order to prevent wells or grazing lands are to be rented out to Oroma or Somali pastoralists, however, no such agreement has ever been reached. In addition to renting out use of wells and grazing land, trade is profitable with the Oroma and Somali, who sell livestock and buy food and domestic goods. Those who profit from these transactions welcome the pastoralist groups.

There are also conflicts over the management of water piped from the hill. There has been very little investment in piped water provision, despite there being several permanent water sources on the hill within only a few kilometers distance from most villages. There are currently three functional or partly functional water pipelines, supplying villages to the west and south of the hill. Several other water projects failed due to corruption among the organizations carrying out the project, poor quality of pipes and poor engineering, as well as lack of maintenance. Notably, the drier areas to the east and north of the hill, including Malalani, have been unable to complete water projects that were started. Important contributing reasons for the failure of these projects have been the lack of commitment by the villagers and the failure to form functional water committees. It is possible that the provision of piped water has been perceived as less important by the powerful individuals in areas where shallow wells provide water during dry spells, especially since the powerful individuals in these villages often are the same who own these shallow wells. Ikisaya and Ndetani have no shallow well water sources and depend directly on water from the hill. Water was collected from the water sources on the hill itself in the past and was one of the motivations for living on the hill. After water was piped from these sources and brought to the lowlands, cattle no longer had to be brought to water on the hill and water for domestic purposes could also be collected in the lowlands. Control over water pipelines are a source of local disputes between clans in a village as well as between villages sharing pipelines. Clans battle for control over water committees which decide prices as well as, to some extent, the distribution of water. The water committees also arrange for the maintenance of water pipelines.

Villages have been known to sabotage each others pipelines or their maintenance in order to control where water is brought. Increasing local democratization appears to enhance participation and management of some of these committees, however.

The effect of insecurity on coping and adaptation

Conflict and insecurity affected adjustments in livelihoods over time in very diverse ways on different sides of the hill. This also affected the options available when coping or securing livelihoods during the 2004 drought. The hill is important in securing livelihoods, and critical to adaptation to frequent droughts. It is a source of dry season grazing, a source of permanent springs as well as a catchment for seasonal rivers and their shallow wells. The enhanced microclimate and groundwater enables cultivation at the foot of the hill and in the past, cultivation of diverse crops on the hill itself as well. Honey, fruit and handicraft are important forest products and game meat (partly dependent on the water from the hill) a major food source during the dry season. Making bricks for sale is a dry season source of income dependent on water from the hill. In addition, the hill is critical as the home of the spirits that control rainfall and as sites for rituals to predict and ensure good rains. Many sources of livelihoods when harvests fail are therefore related to the hill. Social networks, especially in terms of clans, are important in managing drought and other crises. Richer clan members assist poorer clan members; however, only limited assistance can be provided during drought by clans that are generally poor. In addition, casual labour on farms with better harvests, sometimes in distant areas, is an important source of survival for some households. Migration to cities by one or more family members in order to provide remittances has been an important source of spreading risk, diversifying incomes and surviving crises for many households.

In Malalani, eviction from the forest had led to destitution among some households, who no longer had land and could not keep cattle. These destitute households often borrowed a small piece of land from a clan member or social relation in order to cultivate. The land was often borrowed for free or for minor favours such as sharing labour or a small part of the harvest; however, tenure was not secure. A good harvest could allow these households to sell crops and invest in building up a herd, the sale of which could then finance the buying of land. While some households succeeded, many households were not able to build up assets this way because the plot of land was too small to yield large crops. Many were dependent on doing casual labour or on assistance from other clan members. At the time of the eviction, many households who had lived on the hill migrated to Ndetani, hoping to be able to buy land there. Eviction from the hill also made it more difficult to find dry season grazing. As the hill is protected as a water catchment, no permits for grazing are supposed to be granted. Recently, the Forest Department had nevertheless started managing controlled dry season grazing on the hill through a permit system because the hill is critical for livestock survival during drought. This permit system means that livestock have to be driven up and down the hill every day rather than remaining on the hill for the entire drought period, although this creates extra work as well as stress for the cattle. Some herders tried to keep cattle on the hill illegally while others who did not want any conflict with the Forest Department abstained from herding on the hill and reduced cattle numbers as a result. Most respondents reported that they had fewer cattle than they used to, affecting the viability of selling livestock as a source of income during a crisis such as drought.

While some households in Twambui had had farms on the hill, livestock keeping had always been the main source of livelihoods and there was less resentment regarding the eviction in this area. Here, the raiding by pastoralist groups had had huge impacts on livelihoods. Some had lost their entire herds, others had had their business burnt down, others had lost a family member, often the husband and main breadwinner. Some households moved to 'safer areas' such as Ndetani, with or without livestock or land, increasingly turning from livestock keeping to cultivation as the area is more suitable for cultivation while grazing lands are less extensive than in Twambui. Wet season grazing areas were also considered unsafe by some due to the historical raiding, and many grazed their cattle in areas closer to the hill, which could support fewer livestock. Raiding had therefore resulted in long term destitution, migration, landlessness and reduction in livestock numbers, in a similar manner to that of eviction from the forest in Malalani. At the same time, the recent renting out of wells and grazing land as well as trading with pastoralist groups had provided a profitable source of income during drought. Respondents explained that these transactions funded childrens' education as well as weddings and some younger people now preferred starting up local businesses to migrating to cities to look for work which is increasingly difficult to find. Various forms of business and trade had therefore increased in importance as a way of managing drought compared to labour migration and remittances.

People in Ikisaya had lost cattle and people during the raiding and killing, but there were fewer signs of destitution or migration here. Social networks appeared relatively strong. Conflict with a neighbouring village over the maintenance of the pipeline had led to leaks in the waterpipe, although the pipe appeared fairly functional. The conflict hindered further expansion of the pipeline to other areas, however. Conflicts among clans over control over the water committee could slow down further water development. The provision of water had enabled people to leave the hill, where many explained that life had been harsh. Respondents said that cattle had contracted diseases, the weather was cold and transportation very difficult as steep paths had to be climbed in order to get to water sources or to roads, markets, schools or medical services in the lowlands. Herding livestock was made easier by water provision in the lowlands, therefore. Poorer members of the community felt that their survival might be easier if they were allowed to farm on the hill, however. Both Ikisaya and Ndetani communities had lost diversity of crops. It is worth noting that during the 1996 severe region-wide drought, households had been able to sell agricultural produce cultivated on the hill to other drought-stricken areas. 2004, which was meteorologically a less severe drought, had more severe effects on households because they no longer cultivated crops on the hill. The eviction from the forest and conflict with the government over access, had increased famine as no other similar sources of drought food existed. Respondents in Ikisaya as well as Ndetani and Malalani lamented that they no longer had access to fruit trees that had provided important nutrition during drought: "Why should monkeys eat the fruit while we starve?".

Eviction from the forest had a larger impact on Ndetani than Ikisaya. The forest boundary was set lower in this area, sometimes cutting through people's farms. Some people lost farmland and had had to reduce both farming and livestock keeping. In addition, the area had received migrants from the Malalani side evicted from the hilltop as well as victims of

raiding and there were several landless and destitute families. Many families were unable to harvest enough to feed them through the dry season or droughts and there was increased reliance on casual labour as a source of livelihoods.

Winners and losers in the context of conflict and adaptation

Conflict had contributed to increased social differentiation and vulnerability to drought in Endau. There were no new or alternative sources livelihoods in the villages that had relied on farming on the hill, and the eviction essentially reduced livelihood options. Significantly, conflict contributed to the creation of destitute groups. The eviction had led to landlessness, especially in Malalani and Ndetani. The landless were particularly vulnerable as they could seldom harvest enough food from borrowed land to last them through dry seasons; in addition, they could seldom keep many livestock, the sale of which is an important source of drought coping. It is likely that the pre-existing social inequality in Malalani contributed to the landlessness. Poor clans are more likely to have started farming farmland belonging to clan members living on the hill, and the evicted people would rather migrate elsewhere than try to force poor clan members off their land, knowing that these clan members had little land to cultivate.

Women were particularly vulnerable to insecurity and conflict. As a women's group in Twambui explained, women were responsible for their children and could not flee during periods of raiding. Husbands and men could flee to other safer areas to find jobs, but women often stayed to look after the children and the farm. Raiding and killing had also led to several women losing their husbands. Women headed households are particularly vulnerable because women have poor customary rights to land, wells and livestock, which may be inherited by a brother of the deceased husband if the family had no sons. Secure access to land, wells and livestock is critical livelihood and drought coping strategies. A woman, once married, belongs to the husband's clan, but in some cases found that the clan was less forthcoming with assistance to her than to her deceased husband. Women had traditionally had power in the community through 'Mwambaa', groups of older women who performed customary rituals on the hill. Due to their contact with the spirits, these groups command respect in the community and can order people to pay fines if they do not obey customs, for example in relation to timing of planting and ensuring good rains. They also commanded power in development projects by being able to institute similar fines on households that did not contribute to community goals such as building of a school or of water pipelines. This power was strong where the local administrator recognised and collaborated with this customary institution, such as in Ikisaya. However, the spread of Christianity was reducing membership and authority of this institution. At the same time, women were seldom members of or had any influence on the newer and formal development and water committees. Some men actively sought to undermine the power of Mwambaa.

The increased trade and renting out of wells and grazing land to pastoralists were the main 'new' or strengthened source of livelihoods. This source benefited a few individuals who owned wells or businesses, while those who did not own wells found their access to water less secure. A few individuals therefore benefited from negotiation, rather than conflict, with pastoralists, although this resulted in greater inequality and conflicts within the village. Access to grazing and wells

for the most vulnerable was threatened. This development contributed to increased social differentiation although not necessarily to destitution, therefore.

It is worth noting that the conflict with pastoralists, in terms of the raiding, may have been economically motivated, possibly instigated by a powerful individual in the army as a way of amassing wealth. Those households among the settled population for whom raiding had led to destitution were particularly vulnerable during drought. At the same time, the pastoralists themselves may have been losers in the long run, as illustrated by their present precarious rights to natural resources around Endau, expensive access to wells, and distrust from parts of the settled population. They may also have been targets of raiding and conflict from other pastoralist groups, excluding them from other dry season water sources and forcing them into areas such as those close to Endau.

Both inequality and conflict were also actively used by local politicians to gain power. Some politicians promised that if elected, they would allow poor people to farm on the hill. Others promised that if elected, they would make sure that no Oroma or Somali pastoralists would be allowed to access water or grazing. These could be powerful arguments among poor people depending on continued free access to shallow wells owned by others. The lack of piped water made poor households particularly dependent on the wells owned by a few rich individuals. It is likely that the current power base commanded by those owning shallow wells in a situation where these were the only dry season sources of water would be changed and weakened by the provision of piped water, especially if the pipes were controlled by other individuals in the community. Similarly, directing attention to the government eviction of people from the forest could be preferable in terms of maintaining current power relations to addressing a situation of unequal land distribution and landlessness. When faced with landlessness and eviction from the forest, those in small or poor clans and thus few sources of assistance became particularly vulnerable. Unequal access to land, grazing and water; exacerbated by the lack of development and investment in basic services such as water provision, and struggle for political power and control over wealth were underlying causes of conflict in the Endau area.

The Turkana case

The nature of insecurity

Livestock theft is the centre of current insecurity in south Turkana. One 1985 assessment found that 47% of the District had a moderate or serious raiding risk (Ecosystems, 1985). No comparable assessment has been done in recent years. However, the problem of insecurity has not improved since the 1980s and many argue that it has worsened. There is enormous variation in the size and impacts of livestock raids in Turkana that is reflected in local perceptions of the problem. At one extreme is the large inter-tribal raids across the boundary between Turkana District and neighbouring areas within Kenya and in Uganda. Up to several hundred armed men from one side execute a coordinated attack on neighbouring villages lying across the border in the largest attacks. Large raids result in many human casualties

(typically less than one hundred in any given attack), the destruction of homesteads over a wide area and the loss of several thousand livestock. The devastation of the largest raids is so complete that they are memorialised by recalling the season and year in which a raid has occurred after the name of the area where it took place.

At the other extreme is smaller-scale theft of animals and household goods by organised bands of up to ten *ngoroko*, or bandits. *Ngoroko* are often of the same ethnic origin of those they attack, although usually of a different sectional affiliation. Many *ngoroko* are believed to originate in northwest Turkana. They move southwards along the western flank of the District abutting the escarpment on their way to raid in West Pokot, Baringo and Samburu Districts to the south and east of Turkanaland. *Ngoroko* opportunistically attack vulnerable homesteads or small cluster of homes lying in remote bush areas, as well as vehicles travelling along isolated stretches of road. They typically take a small number of milking livestock kept at homesteads, as well as grain reserves, fuelwood, kitchen utensils and other household goods. Although attacks by *ngoroko* are less severe in terms of loss of life and livestock and destruction of property, they are more frequent and their longer-term impacts are felt to be equally or more pernicious than the occasional raids staged at a larger scale.

Violence centred on livestock theft has led to depletion of livelihood assets for individuals, households and communities, displacement of people from insecure areas, destabilisation of the setting for generating livelihood, and destruction of the means for making a living. In particular, the depletion of the household herd features centrally in individual recollections of violence and insecurity. While the severity of loss understandably varies between households, it must be emphasized that the loss of animals in raids and other violent incidents is a near universally shared experience for many Turkana people.

Before considering in more detail the impacts of chronic violence and insecurity on coping and adaptation, it is instructive to consider the broader livelihood context in Kalokol, Kakuma and Katilu, the three areas in Turkana District visited for this study. There are important differences between the study areas in their ecology and local livelihoods, relief and development inputs, and their history of displacement, migration and settlement.

Kalokol was the centre of the former fishing industry that was at one time the mainstay of the local economy in this part of Turkana District. Natole is a small village outside of Kalokol and is situated near to the lakeshore. In common with many of the villages in the Kalokol area, Natole has its origin as a distribution centre for relief assistance. A combination of conflict and drought has displaced many people from different parts of Turkana District, leading to the establishment of destitute camps around Kalokol. This history dates back to the 1930s in colonial Turkana District when the administration created a '*maskini*' camp at Fergusons Gulf for people who had lost their herds. The camp inhabitants were given nets and taught how to fish. They were also given food aid as a supplement to their catch.

According to local sources, modern Kalokol town was created around the time of *Uhuru*. Many people were moved out of the camps around Kalokol to satellite centres up and down the western shore of Lake Turkana. Natole was one of the villages created. There was a large influx of displaced people to the area from northern Turkana in 1980, when drought combined with livestock disease precipitated a major humanitarian crisis in Turkana District. Destitute people were settled by the Kenyan government and aid agencies in many of the villages around Kalokol. Since then, there has been spontaneous resettlement of people displaced by drought and armed violence. Many inhabitants of Natole came during the 1990s from Lowarengak and Todayeng, fishing communities on the upper shores of the Lake bordering Ethiopia, after being attacked by neighbouring Merille raiders.

The history of resettlement and in-migration means that Turkana from many different kinship sections inhabit the Kalokol area. Relations are mostly peaceful between the original inhabitants, earlier resettlers and more recent newcomers. The Ngimataperi, the kinship group that is native to Kalokol, welcomed the resettlers, gave them fishing gear and instructed them in fishing. Levels of insecurity are low. Raiding is non-existent in this part of Turkana. Local people report that *ngoroko* are also not known. Boran and Merille raiders are the only source of insecurity. They attack Turkana fishing parties that navigate far out on the Lake. But they do not venture near to the lakeshore at Kalokol. However, Merille attackers regularly raid the fishing communities to the north of Kalokol that are located nearer to the border with Ethiopia.

Many of the resettlers in Kalokol come from Lukumong-land, an area inhabited by people of the Ngilukumong kinship section of the Turkana. It is located north of Kakuma town and stretches up the escarpment to the border with Uganda. It is a second area that was visited for this study. Cross-border raiding has long been a fixture of life in the area and is the main type of insecurity recalled by local people visited for this study. Like Kalokol, many of the settlements in this region originated as distribution centres for relief assistance in the early 1980s. Kakuma town itself experienced significant growth in 1980 when first the Diocese of Lodwar and later the Turkana Rehabilitation Project (TRP) established feeding camps in the town to provide assistance to thousands of people who had lost their herds to drought and animal disease. A 'camp crisis' ensued, culminating in a cholera outbreak in Kakuma and the deaths of many people.

Following the crisis, TRP resettled the Kakuma camp population in settlements scattered over a wide area of northern Turkana, including centres and encampments in Lukumong-land. One such centre was Kalobeyei, heart of the ancestral land of the Ngilukumong people. In the early 1980s TRP assisted resettlers to take up millet and sorghum gardening along the seasonal river that cuts across the northern edge of Kalobeyei. Although there is a tradition of cultivating ephemeral plots of sorghum in many areas of Turkana, farming was less familiar to the Ngilukumong. Customarily, they focus almost entirely on keeping livestock, in addition to gathering wild foods. They acquired grains, gourds and honey through trade with Dodoth people in Uganda and the Teuso, a small tribe straddling the Kenya-Uganda border.

The third study area is Katilu in southern Turkana. The Katilu Irrigation Scheme was established in the 1960s with substantial support from FAO and UNDP. The Scheme expanded in the 1970s and in the early 1980s to support people from northern Turkana, as well as destitute people from Kalokol. Thus, Turkana from many different kinship sections inhabit the area. Katilu is considered the ancestral land of the Ngisonyoka, the kinship section that is dominant in southern Turkana. Traditionally, the Ngisonyoka do flood retreat gardening of sorghum along seasonal rivers. However, few were settled on the Katilu Irrigation Scheme, although the native Ngisonyoka welcomed the original Turkana inhabitants of the Scheme, according to local sources. Since the establishment of the Scheme, many Ngisonyoka have taken up farming of small rain-fed plots. Farmers with rain-fed plots are far more numerous than those with a scheme plot, who number around 600 households.

Another Turkana section that is native to the Katilu area is the Ngikebotok. They inhabit the area immediately along the Turkwel River. Customarily, they are farmers in addition to keeping small herds. Some are hunter-gatherers. Uniquely for southern Turkana sections, they maintain close links with the neighbouring Pokot people. Although this raises suspicion among some Turkana from other sections, a tradition of intermarriage and trade bonds members belonging to different communities and underpins (mostly) peaceful inter-section relations. The Ngisonyoka privilege exchange relations with the Ngikebotok, from whom they get sorghum and gazelle skins, both of which hold cultural importance for the Ngisonyoka.

The impacts of chronic insecurity and violence on coping and adaptation

Changes in how the Turkana manage and adapt, and more specifically survive periods of food scarcity, must be considered in view of a long running shift away from having herds. Other important trends are the halting commodification of herds and the re-emerging importance of migration and access to regional markets. An external support system has become more important since the late 1970s, notably relief assistance but also remittances from relatives working in large Turkana towns and further afield as farm labourers in the highland agricultural areas or as watchmen in the major Kenyan cities. The significant structural changes in Turkana pastoralism predate the proliferation of weapons and began after *Uhuru* in the 1960s and 1970s when large-scale relief operations were first initiated and many Turkana were resettled in fishing and farming communities as part of development programmes. Alternatives to livestock keeping have increased in importance as customary pastoralism has become less reliable and adequate to cover a household's nutrition and food security needs. Insecurity has not initiated diversification and the shift away from having herds but it has hastened these trends. Livestock keeping has become less reliable over time. As a matter of course, Turkana people have sought alternative economic activities. For this reason, it is misleading to do a simple comparison between current and past coping strategies since the structural context for pastoralism has undergone such significant change.

The Turkana have a rich experience living with drought and other climate stress. People interviewed for this study report doing a number of tasks-for-cash to survive from one hungry season to the next, such as burning charcoal, fetching water, collecting and selling wild foods, fuelwood, seeds from trees, and construction poles, and participation on public workfare schemes. Women do many of the newly important work activities. Sequencing of activities is also evident, with more extreme survival strategies taken up at the end of a long sequence of activities undertaken over the course of a long dry season or during drought. Examples include bleeding animals, migrations of whole families to distant border grazing, temporarily leaving pastoralism to seek other opportunities to survive, drawing down grain stores, slaughter or sale of animals, and feeding on dead animals. It is noteworthy that many coping and crisis strategies have become more regular in the calendar of work activities (See Table 1).

Table 1. Commonly practiced coping strategies in Turkana District, March 2005 (based on small group discussions with men in three study sites).

	All the time	Late dry season only	Early dry season only	Only during severe drought
KALOKOL				
Fishing	X			
Rely on food aid		X		
Basketry	X			
Burn charcoal and sell fuelwood	X			
Gather wild foods			X	
Gather traditional salt and black powder				X
Collect fish bones for sale	X			
Feed on dead animals				X
Depend on gifts of food and animals	X			
Blacksmithing	X			
KAKUMA				
Sale of livestock	X			
Gather wild foods			X	
Split herd in dry season		X		
Depend on gifts of food and animals				X
Rely on food aid	X			
Rely on cereal stock from rainfed cropping			X	
Animal exchanges		X		
Negotiate peace		X		
KATILU				
Farming		X		
Sell animals			X	
Slaughter animals		X		
Split the herd		X		
Gather wild foods			X	
Depend on gifts of food and animals				X
Bleed animals	X			
Chase old claims	X			
Bridewealth	X			
Reduce consumption	X			
Migration				X

An important observation is that the high prevalence of diversification as a livelihood strategy signals efforts by the Turkana to actively manage vulnerability by increasing the reliability of livelihood assets. But peoples' involvement in so many coping and survival strategies is also a sign of distress in Turkana livelihood systems. There is a risk of misinterpreting diversification and market activity for a thriving local economy and robust community and household

livelihoods. For example, high levels of livestock sales is an indicator of distress. The overriding interest of most Turkana to preserve assets and increase the chances of recovering from drought was summed up by one herd owner questioned for this study: ‘the more I sell the more I lose.’

The life histories and current situations of Turkana households that were visited for this study illustrate these general points and observations. In Kalokol the establishment and eventual collapse of the fishing industry features centrally in local explanations of the decline in wellbeing. Colonial administrators gave nascent support to the establishment of a small fishing industry at Kalokol as a way of supporting victims of famine. But their attempts were frustrated by difficulties in procuring fishing gear, treacherous conditions on the lake, and a lack of interest in fishing by inhabitants of the famine camps at Kalokol. The Norwegian development agency (NORAD) supported the construction of a fish factory at Kalokol town and the establishment of the Turkana Fisherman’s Co-operative Society. Natole fishermen sold their catch to the factory, which opened in 1982. Women were trained in cleaning, weighing and packing the fish for export. Nile perch fish fillets were exported to Nigeria. Dried fish was exported to Congo-Brazzaville and Zaire. The factory served as a guaranteed source of income for many people in Natole. Infamously, the Kenyan government severed diplomatic ties with Norway in 1990, leading to the immediate withdrawal of funds. The factory closed shortly thereafter and the Co-operative became inactive after the leaders embezzled the funds.

Today most people rely on subsistence fishing and the collection of fruits from *Eengol*, the doum palm. Women gather and sell the seeds of the *Eengol* to traders in Kalokol, who make oil from the seeds for frying fish. Women also gather building materials from the *Eengol* and make a porridge by grinding a powder from the hard fruit. Basket making is another important activity undertaken by women. However, markets are undeveloped. Most women sell their baskets at very low prices to Turkana traders from Lodwar, the administrative and commercial centre of Turkana District. Men complain of similar market problems, in particular the ‘exploitative’ prices paid by middlemen who buy directly from fishermen at the lakeshore.

Levels of poverty are very high, even by Turkana standards. Wealth ranking with local elders showed that a wealthy household has 20 or more goats, which would be considered poor in other parts of the District. Most households in Natole have diversified livelihoods but earn meagre amounts of income. There are few development inputs. A Turkana NGO is helping women to develop markets for products made from the *Eengol*. The fish factory remains closed.

Relief assistance is more common and has been provided in 2005 as part of a WFP led emergency operation (EMOP) in food insecure districts. Households that were interviewed report significant problems with relief distributions. Local leaders that were interviewed claim that five people died of starvation in November and December 2004 before food aid was distributed in sufficient quantities. The area councillor confirmed the starvation cases. The victims were both men and women and from different age groups. Only one was a long term resident of Natole. Four had resettled in Natole in the early 1990s from Lowarengak.

Experiences of violence feature centrally in the livelihood trajectories of many pastoralist households near to and outside of Kakuma. Natira is a large encampment of displaced pastoralists along the tarmac road linking Kakuma town to Lokichoggio, a large town one hundred kilometres to the north that serves as the base for humanitarian operations in southern Sudan. Natira has absorbed several hundred survivors of the Kaabong incident, a humanitarian crisis that unfolded over March and April 2004. Kaabong is the name of a water point in Dodoth-land, across the escarpment in neighbouring Uganda. In 2003, NGOs facilitated a peace dialogue between the Ngilukumong (the Turkana kinship section that inhabits this part of Turkana District) and the Dodoth. Senior leaders and high level officials from both sides participated in the talks, which led to an agreement. Assured by the agreement, Ngilukumong migrated to Kaabong late in the dry season in March 2004 to water their animals. Dodoth raiders attacked them as they approached the water point. People escaped back to Lukumong-land, an arduous journey that lasted four days and nights, over difficult terrain and without water. Up to thirty Turkana were killed or kidnapped in the melee at the time of the attack. Many others died of thirst on the journey back to Kenya. Several hundred animals died after becoming stuck in a muddy water pan on the Kenya side of the border. For this study, other survivors of the crisis were visited in Nakoyo, a village on the northern outskirts of Kakuma that was formed in the months after the attack at Kaabong.

The Kaabong incident was a turning point for many Ngilukumong, and a focus for discussions on the impacts of armed violence on coping strategies. People were asked to recall their experiences. Many households have a small residual herd, mostly composed of lactating animals that had been left behind at the time of the migration to Kaabong. The animals remained behind to provide milk for members of households who do not migrate, including infants, youngest children, children in school, pregnant women, the elderly and the destitute with no herds to look after. Many people focus on natural reproduction of the remaining herd. Goats are highly valued since they reproduce quickly, require little labour, and can graze within the dry rangelands that are safe to access. Customarily, exchange of animals between stock associates plays an important role in the efforts of the herd owner to make adjustments to the herd structure after incurring significant losses. Household specific herding strategies over the long term inform the participation of herd owners in such exchanges. However, few people that were visited for this study in the Kakuma area currently exchange animals since their herds have been depleted. There is a threshold for participating in animal exchanges and thus being able to use exchanges as a means to recover from loss. Many are too poor to participate in animal exchanges.

Other coping strategies include collecting wild foods (although people complain that areas where wild foods are gathered are not safe), burning charcoal, receiving relief assistance, and participating in the cash for work bush clearance along the Kakuma-Lokichoggio road. However, the line between coping and survival is fine and calls into question the labels we use to describe household efforts to make ends meet.

An important outlet for significant numbers of Kaabong survivors, as well as other Ngilukumong who were not involved in the attack, is to provide cheap labour in Kakuma town. Kakuma is the location of a large refugee camp run by the

UNHCR. Since the first refugee camp was established in the early 1990s, Kakuma has become a destination for people seeking to provide services to the camp population, such as washing clothes, collecting fuelwood and thorn-fencing for sale, burning charcoal, and carrying goods. However, relations between the camp population and the Turkana are uneasy at the best of times, and violence in 2004 between Dinka refugees and Turkana labourers forced many Dinka to seek refuge at the Chief's camp in Kakuma. Turkana were also prohibited from entering the camp for a time until tensions subsided. Many Turkana resent the presence of refugees and the international assistance they receive. Yet, many Turkana depend on the existence of a large refugee population as a market for their goods and services. They also benefit from the free secondary education and vocational training, as well as free health facilities, made available to the local Turkana population under host community programmes run by the UNHCR and various aid agencies.

In Katilu, the demise of the irrigation scheme featured centrally in discussions held for this study. The story is remarkably similar to that told by fisherfolk in Kalokol: a catastrophic decline of a local economy and way of life leading to problems with food security and nutrition. NORAD picked up funding of the Katilu Irrigation Scheme in the early 1980s after FAO withdrew, and continued its support until 1990. Notably, NORAD changed the system of irrigation from furrow to basin irrigation, which local farmers blame for lower yields in later years after NORAD departed. It also created a Management Committee for the Scheme that was separate from the Katilu Farmer's Cooperative Society. The Scheme has experienced a precipitous decline since 1990. The Cooperative collapsed due to mismanagement and embezzlement of funds by the Co-op leaders. The infrastructure of the Scheme has fallen into disrepair and ruin. Farmers have had limited access to improved varieties of seeds, fertiliser and insecticide, and markets for their products. For example, a bag of maize sells for 900Ksh in Lodwar, which is the nearest sizeable market, located some 120KM from Katilu. It costs 150Ksh to transport a bag to Lodwar using public transport, 200Ksh each way for the seller, in addition to any expenses incurred staying overnight in Lodwar. Thus, at least half the cost of a bag of maize is lost through trying to get it to market. The Management Committee has continued after the collapse of the Coop. Since 1990 and up until recently, the Kenyan government and NGOs have provided little or no assistance to the Scheme or to farmers. Farmers have found their own ways of coping, such as shifting from cash to subsistence crops, and relying on locally available seeds.

Chronic insecurity is another factor that features strongly in local explanations in Katilu of how livelihood security has declined. Cross-border raids between Turkana and neighbouring Pokot people occur with some regularity in Katilu. However, according to local opinion, attacks by groups of armed *ngoroko* are a more significant problem. This view was especially strong among women and relates to the nature of violence that involves *ngoroko*, who engage in systematic rape of young girls and women. *Ngoroko* also enter homes, demand grains and cooked food, threaten children and take away girls as wives. Cross-border raiders rarely cross the Turkwel River and enter Lopur, Katilu and other Turkana villages lying to the east of the river. In most cases, attacks by raiders are confined to grazing sites on the western side of the river where large herds are found. Thus, *ngoroko* violence disproportionately affects women. It has created an atmosphere of intimidation and fear and has clear detrimental impacts on livelihoods.

Coping strategies have become routinised in Katilu. Private transfers of small amounts of money and grains, and gifts of one or two animals, within extended families are common and possibly more important than receipts of food aid in this part of Turkana District. Interestingly, a women's group in Lopur ranked (better off) households with many dependents to be among the first to be vulnerable to food shortages.

Winners and losers in a context of chronic violence and livelihood change

The key to living with uncertainty and insecurity is to constantly seek to enlarge the reliability of assets, in other words to reduce vulnerability. For many Turkana, the key to reducing vulnerability is to manage the probability of violence affecting one's livelihood. It is mistaken to view the Turkana as victims who react passively to incidences of violence, market fluctuations and changing economic fortunes. Violence is embedded in livelihood strategies. The discussion here focuses on four aspects of Turkana livelihoods in which this can be observed: the structure of household herds, sources of food, indigenous defense mechanisms and recovery strategies. These are discussed in turn.

There are two ways in which the structure of household herds can be used to indicate efforts to manage the threat of violence. One way relates to restrictions on mobility and access to key resources due to insecurity. The threat of raiding and banditry has forced most people away from borderlands that are ecologically fecund compared to the interior areas of Turkana District that are drier, squeezing herders lower down the ecological gradient. Shifting to drought tolerant animal species is one way that herders can accommodate this change and avoid having to move to insecure border areas in search of pasture and water. Camels and goats are the more drought tolerant animals in mixed Turkana herds. A second way is that certain characteristics of particular animals are perceived to be advantageous in situations of violence. Insecurity is among the considerations of Turkana herders in discussing the comparative advantages and disadvantages of different animals. For example, conventional wisdom in Turkana is that a cow knows its home kraal and may return if it is stolen. It is also thought that goats are useful for warning of an unfamiliar presence near to the homestead by making a purring noise. An advantage of donkeys in relation to this discussion is that they can help to quickly and easily transport household goods when under attack.

Goats are the most valued animal species in mixed Turkana herds and have many advantages seen from the perspective of violence. One is that they reproduce quickly. Many herd owners pursue a shoats (sheep and goats) strategy after a catastrophe as a way of reconstituting the herd (Dahl and Hjort, 1979). A second is that goats have a short gestation period compared to other animals and so they produce milk quickly. The biophysical consequences of frequent or unplanned movements associated with violence include worsening household food security and nutrition (Pike, 2004). Although lactating goats will produce milk over a shorter period, the fact that they can produce milk quickly means they are attractive to households who have seen sudden and unpredictable declines in nutrition and food security of household members linked to violence and displacement. A third advantage is that goats are easily zero grazed in the homestead

implying that herd owners do not need to risk taking their goats to insecure grazing areas. The recent emergence of a market in Katilu for acacia pods, which are sold in large maize sacks by women gatherers, is linked to a continuing threat of violence and the interest of herd owners to adopt zero grazing techniques. Another advantage is that goats are easily bartered and acquired. There is a long and precipitous decline in per capita tropical livestock units (TLUs) in Turkana due to a combination of losses to drought, theft and disease and because of population growth. Many Turkana report the centrality of violence in the decline of their own household's herds. Goats have become more important as a way of covering acute needs for food, medicine and school fees as poverty levels have deepened.

The shift away from having herds and the growing unreliability of pastoralism linked to chronic violence is reflected in changing sources of food. Most Turkana used to rely primarily on animal products from their herds but now purchase grains from income earned through various tasks-for-cash and other survival work (see Table 2). The decline of the herd and the adoption of new work activities have meant that people look for different sources of food. Shifting food sources is a longer-term adjustment to the changed circumstances surrounding pastoralism and the diversification of Turkana livelihood systems away from a high dependence on livestock keeping. Limited contact between groups because of insecurity has damaged exchange relations and cross border trade through which Turkana formerly accessed millet, pulses, sugar and other commodities. Turkana rely more on itinerant traders that operate within the District, as well as shop keepers and relief distributions for such commodities. Affordability and convenience are among the advantages of maize meal most commonly reported. Several people who were interviewed point out that maize meal goes well with vegetables, wild foods and fish, as well.

Table 2. Primary food sources in select Turkana villages, March 2005 (out of sample size of fifteen households per study site; some households report more than one primary source of food).

Study site	Kalokol	Kakuma	Katilu
Food source			
Goats and sheep	7 (47%)	-	1 (7%)
Cattle	2 (13%)	-	-
Camels	1 (7%)	-	-
Maize	3 (20%)	12 (80%)	13 (87%)
Sorghum	-	-	7 (47%)
Fish	4 (27%)	-	-
Wild foods	8 (53%)	3 (20%)	-
Other	1 (7%)	1 (7%)	1 (7%)

Another aspect of Turkana livelihoods in which people can be seen to manage the probability of violence is in indigenous mechanisms for protection and defense. The Turkana have a variety of ways of minimising the threat of insecurity. Mechanisms that were mentioned by people visited for this study include fencing homesteads, reporting to Chiefs and other administrative officials, settling in permanent centres, negotiating with enemies (peace meetings), organising security patrols to defend animals, acquiring illegal guns, zero grazing animals in homesteads or on farms,

traveling in groups and/or with an armed escort, conducting rituals for seers, kraaling animals, taking animals out later and returning them earlier to the kraal, and holding nightly security meetings between sharpshooters, young men and kraal leaders.

In addition, Turkana communities manage the probability of violence by digging trenches near to gate passes, a point (usually a mountain pass) through which people from neighbouring communities pass through on their way into or out of the Turkana plains. A notable indigenous defense mechanism has been the formation of *arumrum*. These are large residential units and grazing associations that comprise up to several hundred families. The obvious advantage of *arumrum* from the perspective of reducing vulnerability is that they offer safety in numbers. These have multiplied across insecure parts of southern and northwestern Turkana since the early 1980s in response to the continuing threat of armed violence (Buchanan-Smith and Lind, 2005).

The indigenous defense mechanisms described here are coupled with livelihood activities. Insecurity has challenged many drought coping strategies such as movement to key resource areas (use of distant border grazing), exchange relations with neighbouring groups that inhabit a different grade of the ecological gradient, collecting wild foods, accessing market information and markets to sell animals to purchase grains. However, the Turkana have devised a number of mechanisms to minimize the threat of violence, which are too easily overlooked in discussions of the impacts of conflict.

Turkana herders also reduce future vulnerability to the threat of violence through recovery strategies following a catastrophe. It is already observed that many herders pursue a 'shoats strategy' as a way of building up the herd after catastrophe and that goats have certain advantages in respect to living with the threat of violence. However, insecurity also exerts a downward pressure on pathways to recover and expand the herd after catastrophe. Community-wide losses mean that it is much harder to rebuild through customary social networks (Lind, 2005). The experience of Turkana pastoralists who survived the Kaabong emergency is an example of how widely shared asset losses can frustrate later recovery and rehabilitation options. Redistribution through bridewealth is also less of an option since most people are poor and unable to pay out a large number of animals. Instead, people increase their engagement in arduous survival activities such as burning charcoal and collecting and selling wild foods and fuelwood as a way of making very small amounts of income to build up and purchase animals. People also use savings from work activities to buy food as a way of protecting existing animal assets, or rely on relief assistance in order to prevent having to slaughter or sell. The widespread lack of cash underlines the difficulty of recovering for most people. Some households who lost animals in the Kaabong emergency had split their herds before the attack and thus had some remaining animals to care for and use as seed stock to reconstitute the herd. Some households who have lost animals in violent attacks do receive gifts of food and animals from other community members. However, the number of animals given is very few and not enough to reconstitute a viable herd. Another observation relevant to this discussion is that there is little vertical movement of

animals between people belonging to different socio-economic groups. In part this relates to increasing destitution and the shrinking number of people who can be considered as better off.

Very few people can be considered 'winners' in the context of chronic violence and insecurity in Turkana District. Instead, there are gradations among those who are considered to be 'losers'. There is a need to better understand the different categories of the poor in order to inform possible inputs and interventions that can reduce vulnerability and enhance livelihood security for the very poor and destitute.

Synthesis

It is noteworthy that violence is more chronic and severe in Turkana and that levels of destitution are greater compared to Kitui. In other ways, there are important similarities between the two cases. Conflict and violence form part of the structural processes to gain control over resources or (in Kitui) to strengthen livelihoods and coping strategies. Thus they represent a manifestation of political processes driving vulnerability. In both Turkana and Kitui, raiding can be viewed as a strategy to violently acquire wealth in livestock. In Kitui, raids were apparently instigated by a powerful individual, although livestock theft continues between Akamba, Oroma and Somali both as a way of acquiring cattle and as retribution. Some Akamba farmers steal livestock belonging to pastoralists who have invaded their land as a way to protest the presence of pastoralists belonging to different ethnic groups. Conflict between the government and the community is rooted in the eviction of people from Endau hilltop, a strategy by the Kenyan government to regain control over the forest. In the Kitui case, conflict is also used to gain political control and redirect attention to the perceived injustice of past evictions from the hilltop and away from the current state of unequal ownership and access to resources and the lack of basic services. In Turkana, insecurity centres on the violent theft of livestock. A point related to this is that insecurity in south Turkana should not be seen as the desperate action of impoverished herders who attempt violently to claim scarce resources in an increasingly degraded environment. Most violence appears to be exclusionary, implying that there are few 'winners' from raiding and banditry. Although 'theft' is mentioned as a survival strategy, what is often being referred to is theft of small amounts of milk and grain by very poor people within villages. There are clear methodological challenges to investigating raiding and *ngoroko* attacks. Further work is needed on the sociology of violence in Turkana and neighbouring areas.

In both cases, conflict and violence have contributed to growing numbers of destitute people. In Kitui, eviction from the forest and raiding had led to landlessness, migration and loss of livestock. In Turkana, violence features centrally in peoples' recollections of a long process of livelihood decline and deepening poverty. Many households have become 'assetless' due to raiding. It is also difficult to reconstitute a herd through customary social networks since livestock losses are broad based across communities. Large scale humanitarian operations and an increasing number of those judged to be in need of food aid is the outcome of chronic violence and the lack of rehabilitation and recovery options.

The destitute are particularly vulnerable during drought because they lack productive assets and have limited options to cope and survive. Significantly, this state of destitution rather than meteorological conditions may be the main reason that necessitated the declaration of a national drought emergency in Kenya in July 2004. Many officials in aid and donor agencies believe that emergency food aid is an inappropriate response to chronic food insecurity and that the creation of other social protection measures is needed (Lind, 2005). The chronically food insecure are unable to meet their annual food needs even in 'normal' years (Sharp et al, 2003).

In both Turkana and Kitui, the loss of productive assets is so extensive for the destitute that they are unable to recover without a redistribution of wealth. Many destitute survive on casual labour and assistance from social networks and clans in Kitui. In Turkana, destitute people similarly rely on tasks-for-cash, as well as food aid or simply reduce consumption. In this situation of extending and deepening poverty, it is difficult to discuss adaptation when many people are trying to survive.

4 Conclusions

The two cases reveal critical lessons for adaptation. There is no one-size-fits all solution to adaptation – people adjust their livelihoods to many stressors at the same time. Any government measures aimed at enhancing local adaptation to climate stress clearly have to take account of such other stressors, including any presence of conflict. For example, many technical type measures, such as the introduction of improved breeds, are unlikely to be effective in a situation of raiding. Measures aimed at supporting local adaptation, such as the provision of water, need to consider the context of conflicts over water access and control over water sources. The Kitui case also illustrates that reducing land degradation in the narrow environmental sense of enhancing hilltop vegetation and catchment properties may in fact increase vulnerability. Instead, improving local access, social equity, and livelihood security are critical to enhancing climate change adaptation.

The study shows that the main challenge to achieving adaptation is destitution and loss of productive assets. If the most vulnerable are to be enabled to adapt their livelihood strategies, destitution has to be addressed. Targeted measures to lift people out of destitution may be an important component of any national climate change adaptation strategy. The most vulnerable can be targeted through measures to strengthen their existing livelihood strategies. Flexibility is critical to managing dryland livelihoods under climate change, such as through: mobility of people and livestock (access to grazing); diversity of crops; diversity of livelihoods; and flexible access to forest areas. Investing in dryland development, so obviously lacking in the two case study areas, is one way of addressing destitution. Fees and taxes currently collected from the local population can be invested in development activities such as water and roads. Drylands have a lot of resources – lack of development of these resources and access to these resources is the problem, not resource scarcity. In Kitui, tapping water sources and availing to different areas and groups in the lowlands (including

pastoral areas) would enhance livelihood options. Similarly, potentially high value dryland niche products such as gum Arabica could provide new economic opportunities.

In order to effectively address vulnerability, the actual drivers of inequality and destitution also have to be addressed, however.. Conflict is an important stressor contributing to destitution. Addressing the causes of conflict, in particular the political processes to gain power and wealth of which such conflicts form part, is important if local adaptation is to be strengthened. Adaptation and reduction of vulnerability are essentially political and need to address political issues such as the representation of vulnerable groups (the poor, landless, small clans) in local powerful institutions, and the rights of the same groups to land, grazing and water.

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