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# How does climate exacerbate root causes of livestock-related conflicts in Kenya?

## An impact pathway analysis

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This factsheet gives answers on how climate exacerbates root causes of livestock-related conflict in Kenya, using an impact pathway analysis. Three main impact pathways are identified:

- 1. Resource Access and Availability:** Climate variability and extreme events are degrading natural resources and diminishing the availability of water and pasture, especially in the ASALs. Movement toward areas where there is relatively more availability of water than in the dry grasslands is leading to resource competition and conflict among pastoralist groups and between pastoralists and farmers.
- 2. Cattle Rustling and Raiding:** The most prevalent form of conflict, particularly in the north of Kenya, is the violent theft of cattle, also known as cattle rustling. Although cattle rustling has historically served as a culturally embedded practice for wealth redistribution and as a rite of passage, the level of violence has increased due to the scarcity of natural resources induced by the effects of climate change.
- 3. Livelihood and food insecurity:** The combination of climate change and conflict places severe pressure on the livelihood and food security of pastoralists, overburdening their adaptive capacities. The necessary and inherent mobility of transhumance is altered by the intensity of violence induced by conflict over resources, leading pastoralists to remain in place or choose longer distances for their migratory routes.

This publication is part of a factsheet series reporting on the findings of the CGIAR FOCUS Climate Security Observatory work in Africa (Kenya, Mali, Nigeria, Senegal, Sudan, Uganda, Zimbabwe). The research is centered around 5 questions\*:

**1 How does climate exacerbate root causes of conflict?**

Impact pathways

[Kenya](#) [Mali](#) [Nigeria](#) [Senegal](#) [Sudan](#) [Uganda](#) [Zimbabwe](#)

Econometric analysis

[Kenya](#) [Mali](#) [Nigeria](#) [Senegal](#) [Sudan](#) [Uganda](#) [Zimbabwe](#)

Scopus analysis\*\*

**2 Where are the climate insecurities hotspots?**

Spatial analysis

[Kenya](#) [Mali](#) [Nigeria](#) [Senegal](#) [Sudan](#) [Uganda](#) [Zimbabwe](#)

**3 What is the underlying structure of the climate, conflict, and socio-economic system?**

Network analysis

[Kenya](#) [Mali](#) [Nigeria](#) [Senegal](#) [Sudan](#) [Uganda](#) [Zimbabwe](#)

**4 Are climate and security policies coherent and integrated?**

Policy coherence analysis

**5 Are policy makers aware of the climate security nexus?**

Social media analysis

[Kenya](#) [Mali](#) [Nigeria](#) [Senegal](#) [Sudan](#) [Uganda](#) [Zimbabwe](#)



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\* Questions 1, 2, 3, 5 are analyzed at country level through a Climate Risk Lens (impact pathways, economic, spatial, network and social media analyses). The policy coherence and scopus analyses are at continental level.

\*\*Scopus is one of the largest curated abstract and citation databases, with a wide global and regional coverage of scientific journals, conference proceedings, and books. We used Scopus data for analyzing: (1) how global climate research addresses the dynamics between climate, socio-economic factors, and conflict, and (2) how the countries studied are represented in the database.

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## **PATHWAY#1:** **Resource Access and Availability**

Climate variability and extreme events are degrading natural resources and diminishing the availability of water and pasture, especially in the ASALs. Movement toward areas where there is relatively more availability of water than in the dry grasslands is leading to resource competition and conflict among pastoralist groups and between pastoralists and farmers. Factors that restrict access to land, pasture and water, such as development projects investing in new infrastructure or irrigated agriculture, privatization of land, designation of game reserves or forests as protected areas, all place pressure on important communal resources, increase uncertainties around land tenure, and exacerbate intercommunity conflicts.

## **PATHWAY #2:** **Cattle Rustling and Raiding**

The most prevalent form of conflict, particularly in the north of Kenya, is the violent theft of cattle, also known as cattle rustling. Although cattle rustling has historically served as a culturally embedded practice for wealth redistribution and as a rite of passage, the level of violence has increased due to the scarcity of natural resources induced by the effects of climate change that, in turn, significantly impact the well-being of pastoralist communities, leading to a loss of life, culture, property and access to land. These more profound forms of violence are compounded by the proliferation of small arms, commercialization of raiding and the dynamics of retaliation that perpetuate vicious cycles of conflict between pastoralists.

## **PATHWAY #3:** **Livelihood and Food Security**

The combination of climate change and conflict places severe pressure on the livelihood and food security of pastoralists, overburdening their adaptive capacities. The necessary and inherent mobility of transhumance is altered by the intensity of violence induced by conflict over resources, leading pastoralists to remain in place or choose longer distances for their migratory routes. It also leads to an increase in the presence of internally displaced people within territories impacted by violence. Vulnerabilities within patriarchal pastoral communities vary along lines of gender, exposing women to violence and unequal access to resources. An increasing number of pastoralists are transitioning to other forms of livelihood but limited options lead to maladaptive alternatives with negative feedback consequences in the form of environmental degradation, vulnerability and violence.

# 1. CONTEXT

## Climate

The Greater Horn of Africa is one of the most climate vulnerable regions of the world, due to rising temperatures, erratic rainfall and rising sea levels. It is also associated with conflict and political instability, poverty and low investment in climate adaptation and mitigation action (IGAD 2022a). Most of its landmass comprises vast arid and semi-arid lands (ASALs) where the effects of climate change lead to frequent occurrences of dry spells, seasonal and multi-year droughts (IGAD 2022a). Kenya is part of the Greater Horn of Africa and has a diverse topography with a range of different climates. Its northern and northeastern regions are typically dry and extremely hot (annual mean temperature 28 °C), while the central highlands enjoy a cooler tropical climate, which becomes increasingly arid towards the country's interior (World Bank Group 2021).

In Kenya, increasing temperatures and rainfall variability are leading to more intense, frequent and prolonged droughts as well as unpredictable and destructive floods (World Bank Group 2021). According to the Notre Dame Global Adaptation Initiative (ND-GAIN) Index, Kenya ranks the 39th most vulnerable country and the 154th country most ready to improve resilience out of 182 ranked countries (ND-GAIN 2020). Since 1960, average temperatures have risen by approximately 1 °C and are projected to rise up to 1.7 °C by 2050 (UNFCCC 2015). Precipitation is highly variable and uncertain and projected to remain that way (UNFCCC 2015). When rain arrives it often pours erratically over a short time, causing flooding which leads to fatalities of people and livestock, destroys infrastructure, increases the emergence of vector diseases and causes extensive erosion (Boruru 2011). The frequency of major as well as moderate droughts has increased especially in the ASALs, with significant socioeconomic impact (World Bank Group 2021). The drought from 1998 to 2000, for example, had an estimated cost of \$2.8 billion, due to crop and livestock losses, as well as forest fires, damage to fisheries, reduced hydropower generation, industrial production and water supplies (UNFCCC 2015). During the last decade, the ASAL regions of Kenya have endured three severe droughts (2010 to 2011, 2016 to 2017 and 2020 to 2022) of which the current episode has been the longest and most severe, with 4.2 million people facing high levels of acute food insecurity (ASAL Humanitarian Network 2022). The below average performance of the 2022 March to May long rains led to all-time low pasture productivity and significantly deteriorated livestock body conditions (IPC 2022).

## Pastoralist Groups

The arid and semi-arid lands of the Greater Horn of Africa are home to one of the largest populations of pastoralists in the world, people who have sustained their way of life by adapting to the dry conditions (Ameso et al 2018; Blackwell 2010). The Karamoja cluster refers to a cross-border area shared by four countries: southwestern Ethiopia, northwestern Kenya, southeastern South Sudan and northeastern Uganda (IGAD 2022b). It is home to at least 13 pastoral and agro-pastoral groups, including the Bokora, Dessenech, Didinga, Dodoth, Jie, Matheniko, Nyangatom, Thur, Pian, Pokot, Tepeth, Topotha, and Turkana – all of whom cross these borders as part of their habitual migration patterns (IGAD 2022b).

Generalized livelihood zones for pastoralism and agro-pastoralism make up about two-thirds of Kenya's total land area and stretch over the entire northern part of the country, as well as on the eastern and southern heartlands (FEWS 2010). In Kenya, pastoralists are found among the Nilotic ethnic groups

that include the Luo, Maasai, Turkana, Samburu and Kalenjin (Kurian 1992). The Luo people used to be pastoralist but after disease decimated their livestock, most became settled as farmers or fishermen. 'Kalenjin' is a collective term for a diverse group of indigenous people, including the Kipsigis, Endorois, Tugen, Pokot and Sabaot who, together, encompass the largest ethnic grouping in Kenya engaged in pastoralism (Minority Rights Groups 2018). The Maasai are concentrated in southern areas bordering Tanzania, an area that includes the most visited game parks in the country. The Turkana live in the arid lands of northern Kenya and have a reputation as fierce warriors. The adjacent Samburu are nomadic people migrating between pastures in semi-arid lands. The related Maasai, Turkana and Samburu commonly practice cattle rustling as a form of cultural heritage, which is also the case for Kalenjin communities (Kurian 1992). Finally, Somali-speaking pastoralists inhabit the northeastern regions of Kenya, bordering southern Somalia (Minority Rights Groups 2018).

### **Livelihood of Pastoralists**

Nomadic pastoralism has served as an efficient adaptation mechanism under a changing climate. In a non-equilibrium system, where forage production is unpredictable and variable, pastoralists are well-adapted to navigate this uncertainty (Boles et al 2019). By diversifying their livestock among five types (camels, cattle, goat, sheep, donkeys), each with different fertility rates, are subject to different diseases, and vary in food production, feeding patterns, diet, water consumption and labour requirements, pastoralists retain flexibility and resilience when faced with exogenous shocks (Blackwell 2010). Keeping mixed herds of browsers and grazers is also a good risk management strategy, enabling use of different resources (grass, shrubs, etc.), and ways through which the animals cope with drought (Orindi et al 2007). The social and economic life of the pastoralist is, with all its aspects, ordered by livestock and the environment in which they live, with cattle constituting the central value in their society and the basis of social, political and religious institutions (Mkutu 2001). Even though owning cattle is the most prestigious form of livelihood, a combination of drought, disease and raiding have led many pastoralists in the Kenyan arid and semi-arid lands to rely increasingly on smaller livestock, donkeys and camels (Blackwell 2010). Although having evolved comprehensive adaptation mechanisms, pastoralists in Kenya are becoming increasingly vulnerable to climate change and are currently overwhelmed by significant losses due to their high dependency on natural resources and lack of alternative sources of income (Omolo and Mafongoya 2019; OCHA 2022).

Pastoral livelihoods have been shown to work in harmony with the environment and the bimodal precipitation patterns experienced in Kenya's ASAL regions. As an adaptation to the ASAL ecosystem, pastoral mobility enhances the productivity of areas that have spatially and temporally uneven resource distribution, with livestock populations that are limited by drought and diseases, which makes overgrazing less likely (Boles et al 2019). Pastoral activity has been shown to enhance soil fertility, seed redistribution, and the presence of wildlife (Boles et al 2019). These advantages are, however, not well recognized in land management policies, which typically deny access to traditional grazing routes, usually by arguing that pastoralism leads to overgrazing and resource misuse (Boles et al 2019). This stems partly from a perception that has historically seen, and to an extent still sees, pastoralism as an inefficient livelihood strategy, one that exploits commonly held land (Campbell et al 2000). The notion of its poor productivity have shaped land management policies from the time of colonial eastern Africa to current political regimes and, even today, still affects pastoral livelihoods that rely on access to natural resources (Boles et al 2019; Mkutu 2001).

Pastoralism in reality contributes about 13 percent of GDP in Kenya, a figure that considers livestock and livestock products but still ignores non-marketable elements, such as the value of smallholder subsistence livestock production and the socio-cultural benefits that are also core components of pastoralism (Nyariki 2019). With traditional pastoralism faced with the challenge posed by a changing climate, several activities including marginal agriculture and fishing, and honey, gum resin and firewood harvesting, as well as tourism, are increasingly being pursued in order to secure the pastoral way of life. Taking all these traditional and non-traditional pastoral products together, the total economic value of pastoralism in Kenya amounts to an estimated \$1.13 billion (Nyariki 2019).

## **CLIMATE SECURITY PATHWAY ANALYSIS (CSPA)**

The increasing climatic impact on natural resources, particularly in the ASALs, threatens the sustainability of livelihoods practiced by Kenyan pastoralists and agro-pastoralists. Climate variability is compounded by inter- and intra-communal violence as well as socioeconomic hardship. In the following sections, three different pathways are identified that draw links between climate change and conflict: (i) Resource Access and Availability; (ii) Cattle Rustling and Raiding; and (iii) Livelihood and Food Security.

The Climate Security pathways presented here, identified through a systematic literature review, are complemented with results from fieldwork research conducted with community members in Kenya between September and October 2022, which applied participatory appraisal methods to understand local perspectives on the links between climate change and insecurity.

### **PATHWAY #1: Resource Access and Availability**

Climate variability and extreme events are degrading natural resources and diminishing the availability of water and pasture, especially in the ASALs. Movement toward areas where there is relatively more availability of water than in the dry grasslands is leading to resource competition and conflict among pastoralist groups and between pastoralists and farmers. Factors that restrict access to land, pasture and water, such as development projects investing in new infrastructure or irrigated agriculture, privatization of land, designation of game reserves or forests as protected areas, all place pressure on important communal resources, increase uncertainties around land tenure, and exacerbate intercommunity conflicts.

Changing climatic conditions together with natural and anthropogenic environmental changes like deforestation, overgrazing and occurrence of invasive species reduce access to water and pasture, thereby imposing significant pressures on pastoral livelihoods (Mouk et al 2021). Rainfall variability in semi-arid and arid rangelands is likely to increase over time, which will further impact rangeland productivity and impose significant negative effects on herd dynamics, stocking density and productivity of pastoral systems (Herrero et al 2016). More frequent and intense droughts are now a constant stressor on the availability of water resources and the productivity of pasture lands in Kenya's ASALs (Orindi et al. 2007). The scarcity of these resources is leading to increased competition among different pastoralist groups as well as between farmers and herders (Ong'eta Mose 2021; Campbell et al 2000). As increased competition over shrinking pasture and water sources escalates, incidents of livestock raiding, violent disputes over water sources, highway banditry, abductions and killing among pastoralists will likely rise (Rutoh et al 2019; Blackwell 2010).

Water scarcity is high and the few water points available are shared by livestock, people and wildlife, amplifying the spread of waterborne diseases for both livestock and humans (Boruru 2011). To adapt to increasingly frequent dry spells and inadequate water and pasture, pastoralists are forced to adopt long alternative routes for transhumance or dig deep wells on the dry river beds (Waila et al 2018). Trekking distances during the current drought went up by 150 percent, with most pastoralists walking 20 to 35 kilometers daily to bring their livestock to water sources and return home (OCHA 2022). In the ASALs, conflicts often arise in areas where there is higher water availability compared to the surrounding dry grasslands, as the search for grazing and water forces migration from the lowlands to highlands, which increases competition over natural resources and brings into conflict different land use patterns between pastoralism, agriculture and wildlife within a limited space (Rutoh et al 2019; Campbell et al. 2000). Grazing routes often belong to specific clans and can cause conflict if this is not respected by other groups or they are in an insecure and contested area (Blackwell 2010). Limited seasonal migration for fodder and water further exacerbates poverty (Blackwell 2010). This means that pastoralists have to opt for longer migratory routes, such as in northeastern Kenya along the Turkwel and Kerio rivers, where high levels of insecurity forced 78 percent of pastoralists to migrate with their livestock to water sources in neighbouring Karamoja, Uganda (Schilling et al. 2012). As the bordering Karamoja region is also suffering from increasing effects of drought, new concentrations of people and livestock are over-exploiting available resources, with the potential to spark new sources of conflict.

Watering points often become a source of conflict, especially in the dry season, as in the town of Lokiriama where the Turkana and Pokot are fighting over access to a borehole (Schilling et al. 2012). Grazing corridors between pastoral and agricultural sectors that are too narrow, causing animals to graze on the crops on either side, also have the potential to aggravate conflicts between farmers and herders (Orindi et al 2007). Due to the severity of the current drought, 80 to 90 percent of all livestock species across the pastoral counties of Kenya migrated to dry season grazing areas and are expected to remain there, which will further increase conflict and insecurity given the large concentration of livestock now exerting pressure on already limited resources (IPC 2022). The long drought is also inducing the occurrence of resource-based conflicts in grazing areas where different herders and communities congregate, as well as sparking inter-communal conflicts due to migration of livestock herders into private ranches and farms (OCHA 2022).

Intertwined with competition over natural resources are land use and resource management policies that regulate access to available resources. This can have detrimental effects, especially for pastoralists who rely on communal ownership and the ability to move freely in their search for water and pasture at different times of the year (Akall 2021; Orindi et al. 2007). Mobility is often limited by the establishment of farming settlements and the privatization of land, reducing communal lands and common pooled resources (Akall 2021; Orindi et al. 2007). For the Maasai of Kajiado County, vulnerability to drought is exacerbated by a shift of land ownership towards commercial purposes, pushing pastoralists into drier areas (Orindi et al. 2007). These changes in land ownership and land use practices undermine access to streams and wetlands, dry season pasture and migration corridors (Orindi et al. 2007). In the Nanyee area of Turkana, the promotion of irrigated agriculture for former residents of famine relief camps has reduced much of the common grazing land traditionally used by local herders, causing conflict when farmers deny pastoralists access to dry season grazing and water points (Akall 2021).

The Community Land Act 2016 has strengthened indigenous peoples' rights by recognizing local populations as capable and legitimate managers of land, but its implementation has been slow and awareness about it remains low among pastoralists, the intended primary beneficiaries (Mouk et al 2021).

For the conservation of diminishing natural resources, sound environmental governance policies are crucial. They have, however, been associated with increasing competition for political positions at the county level and between different interest groups concerning the recognition of land and resource rights (Mouk et al 2021). Projects for the development of new infrastructure and irrigated agriculture, as well as conservation of forests and game reserves, further diminish access to grazing areas and communal systems (Schilling et al 2015). Local politicians may also play a role in the exclusion of certain groups by constructing water points on private land or denying access to land for a specific ethnic group, such as for Somali and Orda pastoralists in Endau, or Samburu pastoralists in grazing lands around the Mukogodo forest (Mouk et al 2021; Owour et al 2011). In fact, pastoral livelihoods often contain practices that use natural resources sustainably, such as 'ekawar', a traditional system that protects pasture for dry season grazing, or 'aminin', referring to the peak of a hill that is left for its flora and fauna, both of which ensure preservation of environmental goods (Yongo et al. 2010).

In an effort to conserve biodiversity from threats of population growth and climate change, Kenya has implemented community conservancies, such as the Northern Rangelands Trust (NRT). These recruit armed rangers as National Police Reservists (NPR) from among local communities to enforce access rights, include pastoralists in developing the conservancies and to strengthen security structures (Mouk et al 2021). Pastoralists, however, considered the community conservancies with their rapid response teams to be part of the problem rather than the solution to increasing violence, due to the further proliferation of guns and exacerbation of tensions and ethnic violence arising over the necessary renegotiation of access to and control over land (Mouk et al 2021).

The occurrence of conflict further threatens access and availability of important natural resources. In conflict-prone rangelands that are insecure because of intense raiding or conflict between communities, the loss of access to pasture and water points is a common phenomenon (Schilling et al. 2012). At the same time, pastoralists tend to move together in bigger groups due to insecurity, which is straining the capacities and thereby availability of the resources along their migratory routes (Orindi et al 2007).



### **CASE STUDY FARMER – HERDER**

Laikipia County, located in northern Kenya, is predominantly a plateau bounded by the Great Rift Valley to the west and the Aberdare uplands and Mount Kenya to the South (Mkuto 2001). The case of Laikipia displays the various ecological, social and institutional layers contributing to natural resource conflicts (Bond 2014). It is a relatively small, semi-arid area prone to drought with a mixed livelihood zone of pastoralism in the lower-lying drier areas and farming in the higher, wetter areas (Bond 2014). Variable rainfall patterns in the district are affecting the availability of water and pasture, with the highest incidence of violence occurring around Mukogodo and Rumuruti, which also experience the most unpredictable and lowest annual rainfall (Mkuto 2001). After Kenya's independence, changes in the agricultural system led to the grabbing of land for ranching, unclear land rights and increased competition over water between small-scale farmers, pastoralists and wildlife (Bond 2014). Nomadic pastoralists migrate to Laikipia in the dry season, and with grass becoming scarce in times of drought, livestock enter private ranches or farms leading to conflict with agro-pastoralists (Mkuto 2001; Bond 2014). The incentives for these conflicts are often based on a perceived entitlement to a resource. Pastoralists claim they are entitled to grass regardless of whose land it is on, while farmers believe they can exclude pastoralists from public dams because the livestock dirty the water (Bond 2014). Traditional institutions which would be consulted in times of drought, epidemics and during raids have been weakened and are no longer effective in solving such conflicts (Mkuto 2001). The Laikipia case indicates that while environmental degradation does occur, its narrative is often used to legitimize the exclusion of certain groups from accessing resources.

### **VOICES FROM THE FIELD**

Mukogodo forest is a government protected reserve and one of the few remaining examples of dry forest of any significant size in Kenya. It serves as a natural habitat for over 45 species of mammals, 200 birds and 100 butterfly species, many of which are endangered. It is also a migratory corridor for both pastoralists and wildlife, including the largest population of elephants outside protected areas in Kenya. A community forest association led by representatives from the Yaaku community, an indigenous peoples group who have inhabited the forest for over a century, works in partnership with the Kenya Forest Service in the management of the reserve. While retaining ownership of the forest land through KFS, Kenya's government acknowledges that Mukogodo is Yaaku ancestral land and guarantees the community rights to access and use the forest. However, the Yaaku are severely limited in the ways through which they can rely on the forest for their livelihood. Under the current conditions of drought, Yaaku pastoralists have lost the majority of their cattle, forcing them to rely mostly on goat herding, charcoal burning and the production of cultural beaded jewellery to be sold in urban markets. Although ecotourism activities do take place within the forest, which benefit the Yaaku, community members report that their preference would be to create a community-managed conservation reserve.

More intense and frequent droughts, rapid population growth, and intense competition over water and pasture have increasingly driven surrounding pastoral communities into the forest, effectively displacing the Yaaku from their gazetted lands and increasing inter-communal conflict. Mostly Samburu herders have entered Mukogodo from the north in search of pasture, a pattern that since 2017 has led to an ethnically charged conflict with the Yaaku. Although the forest management plan allows for designated grazing areas during drought periods, the mechanisms have failed to reconcile the supply of required fodder with the need for sustainable forest use. Furthermore, pressure from surrounding conservancies, agricultural expansion, illegal logging, and unclear zoning has also pushed pastoralists and private ranchers into the reserve, frequently overwhelming the forest association's capacity to control deforestation. Community members live in constant fear of being displaced from their land due to conflicting forest conservation interests from the side of the Kenyan government.

## **PATHWAY #2: Cattle Rustling and Raiding**

Pastoral communities in Kenya have a long history of conflict. The predominant form, particularly in the northern regions of the country, revolves around livestock and the related need for water, land and pasture (Schilling et al 2012). The articulation of these conflicts is mostly the violent theft of livestock – referred to as cattle raiding or rustling. Raids can be distinguished at different scales, from highly organized mass attacks with hundreds or even thousand of raiders targeting a neighbouring community, through smaller ‘adakar’ raids with several dozen up to few hundred raiders coming together to attack one village or kraal, to raids of less than 15 individuals who target small unprotected kraals or groups of migrating herds (Schilling et al. 2012). The term “raiding” may therefore encompass very different levels of violence, with varying drivers and motives, and so it is important to diversify its different forms.

Traditionally, sacred beliefs and cultural practices shape the relationship between different pastoral groups and their cattle through heroism, dowry payments, initiation rites and social status as a warrior (Medina et al 2022). Resource-based conflicts are often referred to as cattle rustling and involve small-scale violence to replace or restock animals in times of drought or disease (Medina et al 2022; Schilling et al 2012). It has been recognized that this redistributive form of rustling was in fact a livelihood-enhancer to recover herd population, carried out according to strict rules governing the preparation, engagement, disengagement and onset of conflict. The presence and enforcement of these rules successfully avoided extreme violence, especially against women or children (Hendrickson et al. 1996).

In more recent times, these cultural practices have become much more violent, amplified through the proliferation of small arms, commercialization of livestock raiding, disputes over land tenure rights, banditry and predation, as well as climate-induced resource scarcity (Schilling et al 2012; Mkutu 2001). In this modern version, cattle raids are fueled by the attempts to sustain dwindling livestock with limited water and pasture due to the impact of climate extremes and variability, which exacerbates community-based conflicts around entitlements and attachment to cattle under conditions of scarcity (Waila et al 2018; Medina et al 2022). Livestock raiding is most profound in northern Kenya, where state institutions are weak and resource availability is declining (Schilling et al 2012). Raiding tends to fluctuate seasonally connected to weather conditions, with the highest occurrence during the rainy season when communities are seeking to restock their herds and livestock are able to move long distances (Ong’eta Mose 2021; Schilling et al 2012). Turkana and Pokot pastoralists, for example, seek peace during times of drought because fighting then is deemed suicidal and it is preferred to share what little pasture and water remains, rather than fighting a well-armed opponent with nothing to lose (Eaton 2008). However, when the rains arrive after long periods of droughts, raiding becomes more vicious as the need to restock increases (Ong’eta Mose 2021).

The seasonal nature of cattle rustling, however, is highly contingent on local circumstances. Agro-climatic and ecological regions that represent transitional zones from arid to semi-arid lands, or to more humid regions like the Aberdares and Mount Kenya, are frequently used as migratory routes by livestock herders searching for water and pasture during dry seasons. The drying of waterholes under conditions of drought can potentially increase the willingness of pastoralists to partake in rustling as a livestock replenishment strategy or to secure access to resources (Detges 2014). On the other hand,

more sedentary herders and populations with little access to transitional zones may be less likely to engage in conflict with other pastoral communities during dry periods. Rather, it is the presence of rain and the replenishment of water points which may exacerbate inter-community contact and conflict (Ong'eta Mose 2021; Schilling et al 2012).

Factors that are not directly connected to climate also need to be considered to understand current forms of raiding. The commercialization of raiding has professionalized pastoralist in raiding, who, along with new non-pastoralist actors, steal cattle in a highly organized manner, loading them onto trucks to be quickly sold at market or slaughtered, even transported across the border to Tanzania or Uganda, before the theft can be tracked (Bond 2014; Eaton 2008). Furthermore, the relationships between different pastoral groups are very complex. The dynamics of conflict between the Pokot, Pian and Matheniko is a good example: an alliance between the former two meant the Matheniko were highly vulnerable to raids, in response they sent thieves to sow mistrust and effectively break up the peace between the two (Eaton 2008). As retaliation is a decisive factor within the dynamics of raiding, provoking one group can easily spark new violence often directed at unconnected third actors (Eaton 2008). This creates circles of violence which are difficult to break. Some raiders or thieves favour the chaos of conflict as it increases their opportunity to steal without being caught (Eaton 2008).

#### **VOICES FROM THE FIELD**

Since 2005, the Endorois indigenous people have been subjected to violent attacks from neighbouring Pokot communities living to the north of their ancestral lands, around Lake Bogoria National Reserve, in Baringo County. The onset of the conflict coincided with ethnically-charged territorial conflicts across Kenya, driven mostly by electoral-based violence, and has continued to revolve around political boundaries, access to land and the interests of political and economic elites in securing highly-valued natural resources. Endorois pastoralist communities at the northern edge of their territory have suffered extremely intense forms of cattle rustling for several years. The effects of this conflict on their wellbeing have been catastrophic, to the extent that Endorois people today reject the term “cattle rustling” and refer to banditry or terrorism. Several thousand displaced people dwell within Endorois territory, many hundreds have been killed, and over 10,000 livestock head stolen or killed. Hospitals, water tanks, roads and other infrastructure have also been destroyed. The Endorois mostly understand the conflict as fuelled by political and economic interests in the value of their land. They also recognize that the vulnerability, poverty and marginalization of Pokot populations, mainly young men, makes them more susceptible to recruitment, and this vulnerability is thought to be enhanced through the effects of climate change, particularly recurring droughts during the last decade. Additionally, the conflict has increased the vulnerability of Endorois populations to climate threats. The impact of drought and lower agricultural productivity, they report, is today a lot higher due to the widespread presence of displaced people across the territory and the loss of life and livelihoods due to the violence.

### **PATHWAY #3: Livelihood and Food Security**

Climatic changes and extreme events have changed conditions for Kenyans due to rising food insecurity, water scarcity, altered disease patterns and displacement of communities (Waila et al 2018). Climate change has been shown to affect livestock through the diminished quantity and quality of feeds and water resources, degrading biodiversity, increasing heat stress and livestock diseases (Thornton et al 2009). Natural resource scarcity, the occurrence of flooding, and more widespread diseases, all impacts related to the effects of climate change, increase the death rate of livestock and gravely threaten the ability of pastoralist populations to secure a stable income (OCHA 2022). As of 2022, people in Kenya's ASAL regions have experienced a fourth consecutive below-average rainy season (IPC 2022). This drought is the longest reported in the country for over 40 years, and has left 4.2 million people experiencing acute food insecurity (ASAL Humanitarian Network 2022). The number of people without access to water has increased by 50 percent in the last year alone, and pastoral communities have suffered significant loss of livestock, with more than 1.5 million cattle having died as a result of drought (OCHA 2022). This not only forces herder populations to move farther afield in search of pasture and water but threatens their traditional lifestyles and livelihoods under conditions that offer few alternatives for income. These impacts, together with the level of violence through livestock raiding, banditry and intercommunal conflict, have a long-term detrimental effect on the livelihood of pastoralists and the strategies they are able to use to sustain a stable income.

Pastoralists have evolved several strategies to cope with drought, for example, by practicing mixed herding and leaving some of their animals with relatives, risks from disease, droughts or raids can be spread and insurance kept as a means to restock more quickly. Their ability to move towards more productive and resource-rich areas makes herders more resilient while also alleviating stress on less productive lands. Furthermore, pastoralists often maintain good ties with agricultural counterparts in their region, mainly through the exchange of livestock products for grain, fodder and supplements for animal diet. But all of these forms of adaptation are increasingly being overwhelmed by the combination of more frequent droughts, population growth, unfavorable resource governance and conflict (Orindi et al 2007). Reoccurring droughts in Turkana have overburdened the coping capacities of many pastoralists who now need to rely on food aid to survive (Blackwell 2010). Humanitarian assistance and famine relief strategies in the region have partly led to the sedentarisation of pastoralists, which though facilitating provision of assistance does little to address poverty or alleviate pressures on natural resources in the long term (Blackwell 2010). When conflict or episodes of livestock raiding erupt many communities flee leaving their assets behind, while the intensity of violence may also interrupt the ability of pastoral groups to move their herds towards needed resources, mobility which is crucial in the ASALs (Rutoh et al 2019; Kaimba et al. 2011). Alternative strategies to adapt to water and pasture scarcity, such as the picking of wild berries, are undermined because the women are afraid to engage in this activity during times of conflict (Schilling et al. 2012). Raiding and migration across borders can also increase the spread of diseases, such as in 2006 when the Peste de Petits Ruminants (PPR) viral livestock disease entered from Uganda into Turkana, killing more than 350 000 sheep and goats (Blackwell 2010).

It is important to consider that vulnerabilities among pastoralists are different for men and women (Omolo and Mafongoya 2019; Bond 2014). Gender inequalities are deeply embedded in most pastoral

cultures, which are highly patriarchal. Cultural norms are slow to change, and women are often excluded from resource access and decision-making processes (Mouk et al 2021). Men own the herds and have full control and decision-making power over livestock activities as the main source of family income, as well as in negotiating access to pasture and water (Ameso et al 2018). The important role that women play in pastoral production systems by engaging in cultural activities, socio-economic conservation and management of natural resources, being responsible for the household, food supply and healthcare is often overlooked (Omolo and Mafongoya 2019; Ameso et al 2018). Development interventions have been working to extinguish inequalities along lines of gender, education level and socioeconomic-status by addressing unequal access to opportunities, acquisition of land and being able to invest (Akall 2021).

#### **VOICES FROM THE FIELD**

Linkages between climate and insecurity emerge also at an intra-community and household level. The loss of agricultural-based livelihoods due to the compounding effects of climate and conflict, has led to decreasing employment rates and income. In a context where men are expected to provide for security and household income, this has rendered many young men with a sense of indignity and low capabilities. The task of finding alternative incomes has fallen to a large extent on women, who mostly adopt the practice of bead-making or the non-sustainable extraction of resources, like charcoal burning. Despite what is often reported in the literature, an increasing economic role of women in the household has not, in women's perception, contributed to gender parity. Women felt excessively overburdened by work and the lack of income, while their influence over decision-making processes at the household and community levels, had not changed significantly. At the same time, the frustration felt by men exposed women to higher risk of household violence, as men resort to abuse as the only way of reasserting their authority. School dropouts, early pregnancies, substance abuse, crime and prostitution were all readily correlated to the effects of drought and loss of livelihood by the research participants.

In Kenya, pastoral livelihoods have become increasingly hard to sustain. A study on pastoral livelihood pathways indicates a great transition is occurring from pastoralism towards other modes of livelihood, which is mainly due to drought (Kirui 2022). Scarce employment opportunities with limited labour skills available, along with poor access to infrastructure, basic services and social protection are exacerbating food and livelihood insecurity and limiting available options (Medina et al 2022). While alternatives may include a transition to other forms of agriculture, agro-pastoralism or fishing, many still have no choice other than to turn to more high-risk alternative livelihood strategies, such as burning charcoal or brewing beer (Akall 2021). Selling charcoal may meet short term needs as a source of income but the resulting deforestation has a long term impact, the environmental degradation contributing to increased food insecurity, loss of ecosystem services and increased vulnerability of the population (Waila et al 2018). The growing practice of illicit brewing as a source of income is viewed with despair by community leaders, with excessive alcohol consumption leading to local fights and the spread

of sexually transmitted diseases (Waila et al 2018). Rising poverty and marginalization is seen as one of the most important drivers of conflict, being factors in a community or individual's decision to engage in violence as an alternative source of income (Medina et al 2022). In a vicious circle, conflict and climate vulnerability work to diminish the livelihood strategies available for pastoralists, with the coping mechanisms adopted tending to be maladaptive in nature and having negative feedback effects by increasing violence and environmental degradation.

#### **CASE STUDY PASTORALIST – FISHERMEN CONFLICT**

Around the Lake Turkana area, fishing has become an important alternative livelihood strategy for many pastoralists who, due to repeated drought and cattle raiding, have lost the majority of their livestock (Yongo et al. 2010). The skills to fish have in part been taught as part of several different development programmes, most aiming to provide famine relief by making use of aquatic resources (Yongo et al. 2010; Carr 2017a). As a result, most communities in northern Turkana have gradually moved from the uplands to areas closer to the lake where they engage in fishing or in mixed pastoral-fishing activities (Carr 2017a). From the Ethiopian side, where the Omo river flows into Lake Turkana, the Dasanech pastoralist groups have gone through a very similar livelihood transition from pastoralism to fishing, though in their case they have an intermediate opportunity to engage in flood-recession agriculture (Carr 2017b). With a large influx of pastoralists transitioning their livelihood to fishing in the same area, violent conflicts between the Turkana and the Dasanech have erupted, with the two groups competing over the limited fish stocks (Carr 2017a). Given that the two groups are reliant on resources spread across the Kenya-Ethiopia border, this conflict is not restricted to national territories. Tensions typically intensify during dry periods, as evidenced by the current drought (WPS 2022). The most intense forms of conflict are concentrated on the northernmost portion of the lake, where killings, massacres and regular thefts of fishing gear are common occurrences. These expressions of violence bear the threat of single-occurrences evolving into a widespread regional conflict (WPS 2022; Carr 2017b).

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CGIAR aims to address gaps in knowledge about climate change and food security for peace and security policies and operations through a unique multidisciplinary approach. Our main objective is to align evidence from the realms of climate, land, and food systems science with peacebuilding efforts already underway that address conflict through evidence-based environmental, political, and socio-economic solutions.