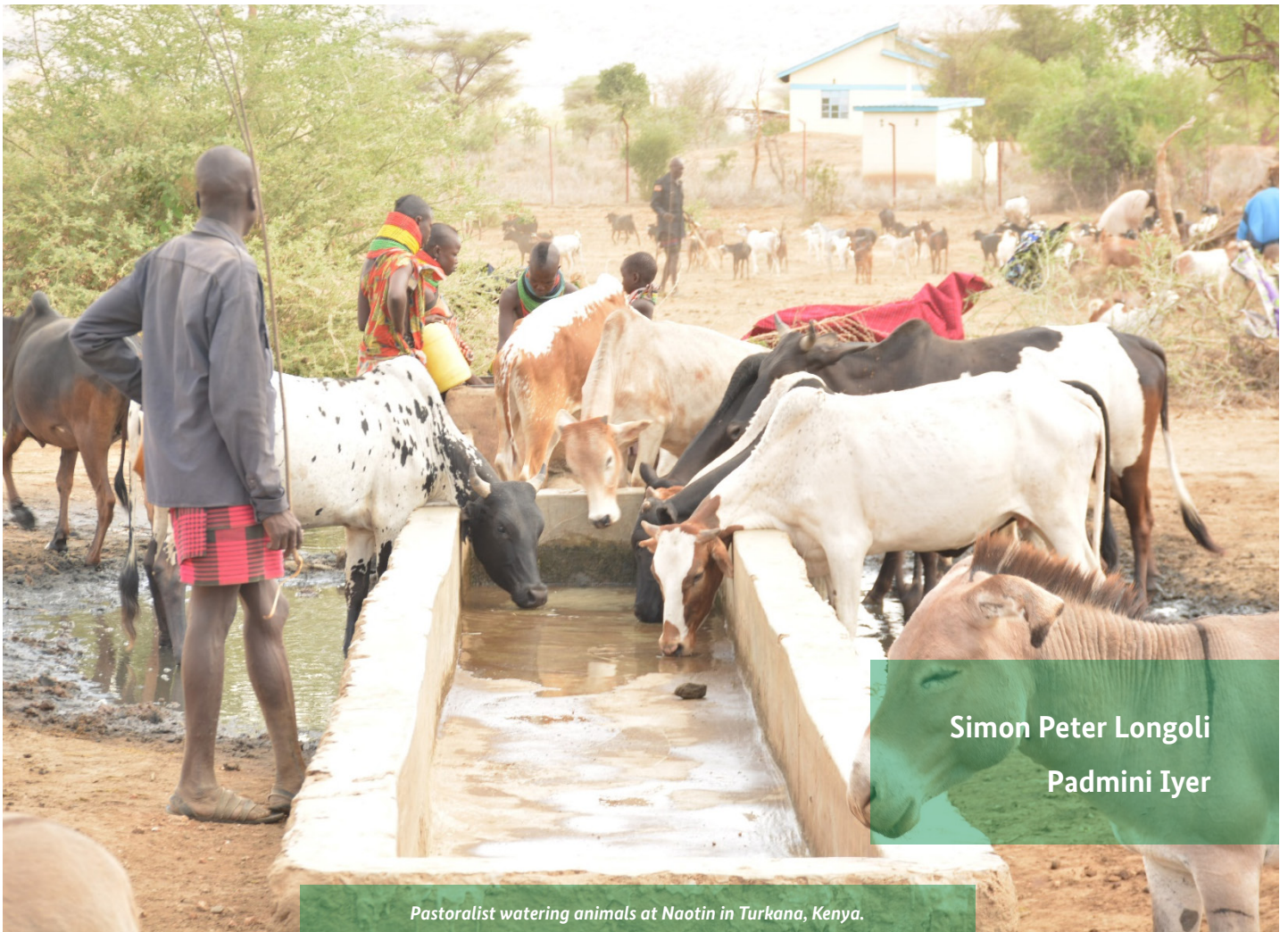


Livelihoods, Resilience & Migration

In the Context of Slow Onset
Climate Change in the IGAD Region

Case Study of the Karamoja-Turkana
Cross Border Area



Simon Peter Longoli
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Pastoralist watering animals at Naotin in Turkana, Kenya.

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Acronyms

ASALs:	Arid and Semi-Arid Lands
CBDFU:	IGAD Cross Border Development Facilitation Unit
FAO:	The Food and Agricultural Organisation of the United Nations
FGD:	Focus Group Discussion
GIZ:	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GP HMCCC:	Global Programme Human Mobility in the Context of Climate Change
HoA:	Horn of Africa
ICPALD:	IGAD Centre For Pastoral Areas and Livestock Development
IGAD:	The Intergovernmental Authority on Development
KII:	Key Informant Interview
NDMA:	Kenya National Drought Management Authority
NGO:	Nongovernmental Organisation

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Executive Summary

The Intergovernmental Authority on Development (IGAD) region's borderlands are typically classified as Arid and Semi-Arid lands (ASALs), which are home to pastoral and agro-pastoral communities who have adapted to and exploit the resources and the geography of the region for their livelihoods. However, the current repertoire of pastoral practices is insufficient or unsuitable in the face of the increasing effects of climate change. Slow onset effects such as droughts, though predictable and a well-understood phenomenon, have a growing impact on borderland communities due to a rise in their frequency, and their magnitude combined with a host of other factors such as high rates of population growth and recurring conflict and violence. Coupled with the general marginalisation that border regions experience, climate change and related slow onset effects have a wide-ranging impact on livelihoods.

This report summarises the complex interactions between droughts, migration and displacement and the influence of climate change on decisions around livelihoods and mobility in the border areas of the IGAD region. The first section of the paper is a literature review for which academic and grey literature were consulted. The second part of this report presents a case study on livelihood and human mobility in the context of climate change conducted with pastoral and agro-pastoral communities residing in the IGAD Karamoja cross-border cluster, which straddles the Uganda-Kenya border. The field research was conducted to understand how local pastoral and agro-pastoral communities are dealing with climate change, what impact climate change has had on their livelihoods, and how decisions around migration in the context of climate change are made. Finally, the study also explores how communities see the role and impact of governmental and non-governmental actors in building their resilience to climate change.

Key Findings from the Field Study:

Overall, participants in this study understood and attributed worsening climatic conditions to: ordinary cyclicity – a bad year must be followed by a good one; supernatural forces; and degradations brought to the land. However, for some informants in Turkana County, often confronted with the harshest drought conditions in the area with dry seasons extending over many years, the assumption that the climate is not changing but is only going through cyclical phases is slowly disappearing.

- 1. Informants attributed declining animal health, rapidly spreading animal diseases, low pasture availability and quality and decreased water sources to climate change.** Although these factors have always been a cause of concern for pastoralists in the Karamoja for decades, they have observed an increase in the prevalence of these stressors.
- 2. The immediate, short- and long-term effects of climate change have forced pastoralists to consider a number of adaptation mechanisms to drought.** These strategies range from environmental action, social support-seeking, planning for drought and consideration of alternative sources of livelihood.
- 3. One of the key coping mechanisms to harsh and/or long drought periods is the sale of livestock and the pursuit of other means of livelihood.** These alternative livelihoods have generally low returns, barely contribute to the sustenance of productive assets (such as livestock and poultry) and are unsustainable in the long run. Moreover, some alternative livelihoods, such as the collection and burning of wood to sell the obtained charcoal, while serving a short-term financial need also cause environmental degradation, which can, in turn, further exacerbate food insecurity and poverty.

4. Decisions to migrate are largely driven by the needs of the household, the overall community and the livestock, and are conditioned by the level of insecurity. **Insecurity leads to both mobility and immobility**, with some populations driven away by it and some trapped in place because of it. Insecurity can also lead to mobility when moving in a group is a necessary strategy to defend oneself and livestock against raids and also when one is compelled to move without weapons after being disarmed by the authorities.
5. Decisions to migrate also depend on the attractiveness of the potential migration area, which is evaluated through surveys done prior to any movement: typically, a few members of the community are sent to areas that are known to have received rain, these individuals evaluate whether the pasture and water are healthy and plentiful enough to sustain their animals. This information is then relayed to the families, who then prepare to migrate or not based on this information.
6. **There are both informal and formal processes that regulate movement** - these include consultation practices carried out by communities (informal) and the submission of official request letters for the obtainment of permits required for movement issued by the local governments (formal).
7. Mobile phones, to which more and more pastoralists have access, have eased the communication process for migratory decision-making. Where in the past, messages would have to be relayed through messengers, kraal leaders are now able to call other kraals to inquire about water and pasture conditions, insecurity-related incidents and arrange community meetings.
8. Although increasing frequent and harsh **droughts have undoubtedly negatively impacted pastoralists' livelihoods** and wellbeing and thus weigh heavily on migration decisions, **insecurity is currently the greatest factor influencing mobility and immobility** in the Karamoja cross-border cluster. Although the link between climate change and the resurgence of conflicts is complex, several pastoralists interviewed during this study have stressed the fact that, based on their life experience, **the likelihood and the severity of conflicts are considerably increased by climate change**. During times of stress (such as droughts or floods), when available resources are particularly limited, the risk of conflict is greater. Conflicts often take the form of livestock raiding, which has evolved over time to something more akin to a commercial activity.

The following ideas on resilience-building intervention areas were gathered from interviews with community members:

- a. A more holistic approach to resilience-building activities: communities show a strong preference for resilience activities in the Karamoja cluster that are targeted towards livelihood assistance and include communities in defining the form this support would take. This assistance cannot bear its fruits without an enabling institutional arrangement;
- b. A trade-oriented support and infrastructure development: exchange of goods and services is considered central for the evolution of pastoralists in the region. According to them it has the potential to transform the borderlands and should be a core part of any successful resilience interventions;
- c. Population management and migration: guaranteeing the easy and safe movement of pastoralists is a prerequisite for the establishment of any durable resilience programming since mobility is an essential part of the pastoral way of life;
- d. Management of pests and diseases: in the context of transhumance, management of pests and diseases is an issue of great concern to pastoralists and governments alike. Comprehensive strategies that tackle livestock and human diseases simultaneously through an ecosystem perspective must be considered in any resilience-building interventions;
- e. Conflict management: tackling conflicts, especially cattle rustling and raiding, and the retaliatory actions that come with it, should be a critical consideration to ensure the health, wellbeing and prosperity of people as well as their livestock;
- f. Information-sharing and coordination: regulators and decision-makers must better coordinate and share information with community leaders. Moreover, knowledge gaps on drought and climate change in pastoral communities must be addressed. Engaging in these two areas will ensure better ownership and engagement from pastoral communities in resilience-building activities.

Introduction

Human mobility in the context of climate change (HMCCC) is an umbrella term used to describe changes of residence in anticipation or response to climate change impacts, and encompasses (internal) migration, forced displacement and planned relocations. More intense and/or frequent extreme weather events as well as gradual changes in the climate and environment are already affecting many people and their livelihoods. In the future, the adverse effects of climate change will continue to have significant impacts on human mobility and be major influencing factors in people's decisions to leave their homes. Existing migration patterns are most likely to intensify.

At the global and regional levels, data and knowledge need to be improved to shape development-oriented approaches to manage and facilitate migration, reduce internal displacement and achieve transparent, participatory, and demand-oriented relocation.

The Intergovernmental Authority on Development (IGAD) comprises the countries of Djibouti, Eritrea (suspended membership), Ethiopia, Kenya, Somalia, South Sudan, Sudan, and Uganda. It was initially created in 1986 as the Inter-Governmental Authority for Drought and Development (IGADD) to coordinate the efforts of its Member States in combating desertification and promoting efforts to mitigate the effects of drought. The IGAD Migration Programme under the Directorate of Health and Social Development (HSD) supports its member states in improving the implementation of relevant policies on climate change-related displacement and migration. Core strategies with respect to migration and displacement are laid out in the IGAD Regional Migration Policy Framework (IGAD-RMPF) adopted in 2015 and operationalised in the IGAD-Migration Action Plan

(IGAD-MAP) 2015-2020 – a new MAP is currently being developed covering the period 2022-2027. In 2020, the IGAD Protocol on Free Movement of Persons was endorsed. It includes the facilitation of the movement of persons affected by disasters (Article 16). This protocol will be implemented in several steps outlined in a roadmap until 2037. By 2028, laws, policies and procedures should be developed, reviewed and harmonised to facilitate the movement of persons displaced by disasters in accordance with the Protocol.

Despite their vastness and diversity, the Intergovernmental Authority on Development region's borderlands have some peculiar commonalities uniting them. These borderlands are typically classified as Arid and Semi-Arid lands (ASALs) – as is most of the IGAD region. They are home to pastoralist and agro-pastoralist communities who exploit the resources and the geography of their regions in innovative ways. High temperatures, low rainfall, low biomass production, and a generally unstable climate in the region have led to the evolution of an economy based on livestock rearing, ownership and production, supplemented by opportunistic or habitual agriculture. In some countries of the IGAD region, over 50% of the national gross domestic product derives from the livestock sector (FAO, 2019a). In Kenya alone, for instance, livestock represents the main source of livelihood for at least 57% of the households in the border counties of Mandera, Marsabit, Turkana and Wajir (Krätli and Swift 2014).

In its Regional Migration Policy Framework, IGAD highlights that climate change and migration are two processes that cannot be addressed separately. The impacts of climate change are categorised into two groups. There are sudden and slow onset climate events. The Cancun Agreements

coined the term of “slow onset events” in 2011. Slow onset events include rising sea levels, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinisation, land and forest degradation, loss of biodiversity and desertification. Sudden onset events – or extreme weather events – describe natural hazards which occur in a short period of time and which last a brief moment. Sudden onset events include hurricanes, windstorms, floods and mudslides.

The pastoralists of the IGAD region live in environments of various and recurring environmental, economic and sociopolitical risks. As a livelihood system, pastoralism has evolved to harness the opportunities that ASALs offer by incorporating variability in the production process (FAO, 2021b). This includes strategies such as transhumance, herd diversification, maintaining different herding units throughout the year, and combining crop and livestock production at a variety of spatial and temporal scales (Bollig and Gobel, 1997; Swallow, 1994). Transhumance¹ is deployed very strategically and draws on local networks, information and risk analysis that is supported by systems of governance and decision-making (African Union, 2010).

Although pastoralists and agro-pastoralists are highly adaptive to changing environments, the current repertoire of adaptive practices is stressed and becomes insufficient or unsuitable when faced with the impacts of climate change (Ericksen et al., 2011; Herrero et al., 2016). Slow onset disasters such as droughts, though predictable and well-understood phenomena, have a much more devastating impact on borderland communities in

the ASALs due to an increase in their frequency and magnitude as well as a host of other complicating factors such as high rates of population growth and recurring conflict and violence. Coupled with the general marginalisation that border regions face as a result of their peripherality, climate change and related slow onset disasters have a wide-ranging impact on livelihoods.

In order to better support IGAD and its Member States in implementing adequate policies on the nexus between drought and displacement/migration it is important to conceptualise the links between drought, loss of livelihood and migration in the IGAD region borderlands. It is also necessary to detail and explain the different ways in which the impact of drought on livelihoods intervenes in the decision of the affected individuals and households to migrate while also considering the implication of external factors such as gender and age. This paper summarises this complex interaction between droughts, migration and displacement and the influence of climate change on decisions around livelihoods and mobility in the border areas of the IGAD region.

The first section of the paper is a literature review for which academic, grey and other literature on the IGAD region were consulted – the search was also extended to “Horn of Africa” and “East Africa” given the overlaps in the nomenclature. The review draws heavily on a few sources that have previously extensively covered these border regions^{2,3}, as well as materials from intergovernmental organisations, non-governmental organisations and other think tanks.

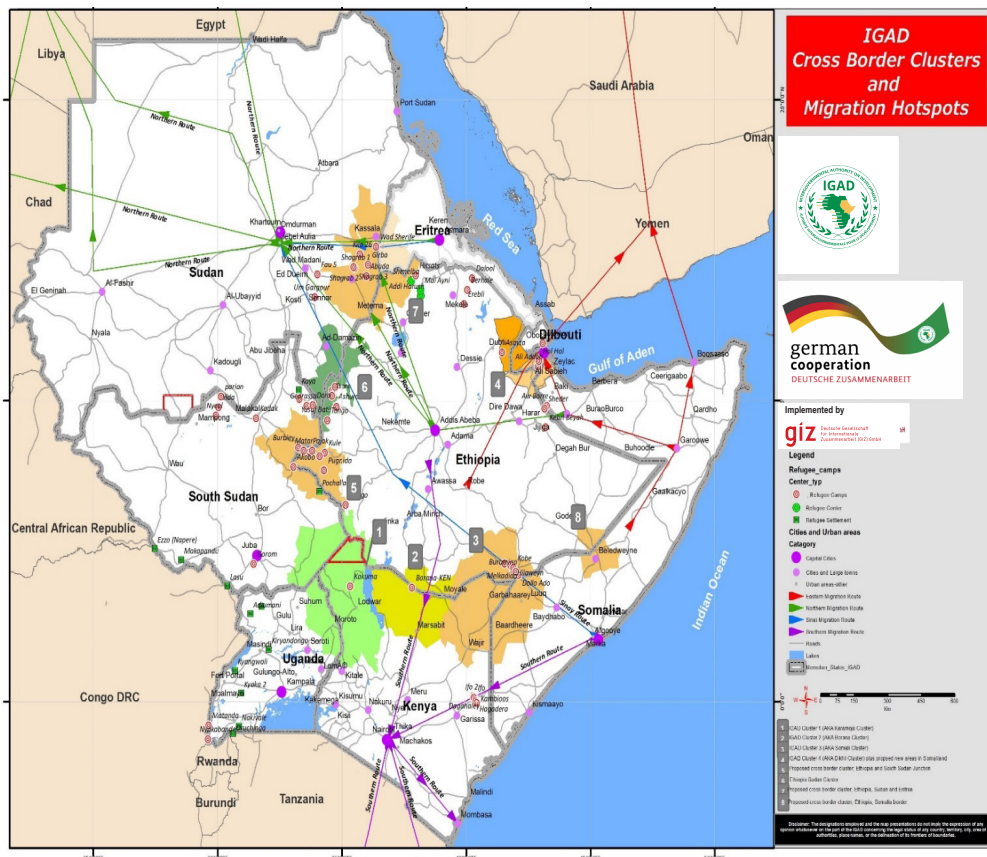
¹ Transhumance is a form of mobile livestock husbandry in which herders move livestock regularly and repeatedly between defined seasonal pasture areas. Karamojong and Turkana herders have practiced transhumance for centuries – however, the range and direction of movement has decreased in recent years due to expansion of urban and peri-urban areas, land use change, extractives exploration and exploitation and wildlife conservation.

² These include: World Bank. 2020. From Isolation to Integration: The Borderlands of the Horn of Africa, The World Bank, Washington DC; Eulenberger I, Feyissa D, Iyer P, Gebresenbet F, Adugna F, et al. 2018. Agenda-setting report for the Borderlands Working Group. Nairobi: Danish Demining Group-Danish Refugee Council; Foresight. 2011. Migration and Global Environmental Change: Final Project Report, The Government Office for Science, London; Rigaud K, de Sherbinin A, Jones B, Bergmann J, Clement V, et al. 2018. Groundswell: Preparing for internal climate migration, The World Bank, Washington DC, among others.”

³ One of the authors was a lead writer for the extensive review of the border regions commissioned by the Danish Demining Group in 2018.

The second part of this paper is a case study of the IGAD Karamoja cross-border cluster (see Figure 1) in which local pastoral and agro-pastoral communities were interviewed on the impacts of climate change, especially drought, on their livelihoods, how these changes have affected their migration decisions and which methods they have employed to build up their resilience.

Finally, in the third and last section, the study will also explore how the communities see the role and impacts of governmental and non-governmental actors in building their resilience to climate change. This section will allow us to understand, through the perceptions of these communities, what they consider to be the most important areas of intervention and how to improve these actions. This section will also make use of the field study implemented in the Karamoja Cross-Border Cluster.



IGAD Border Clusters

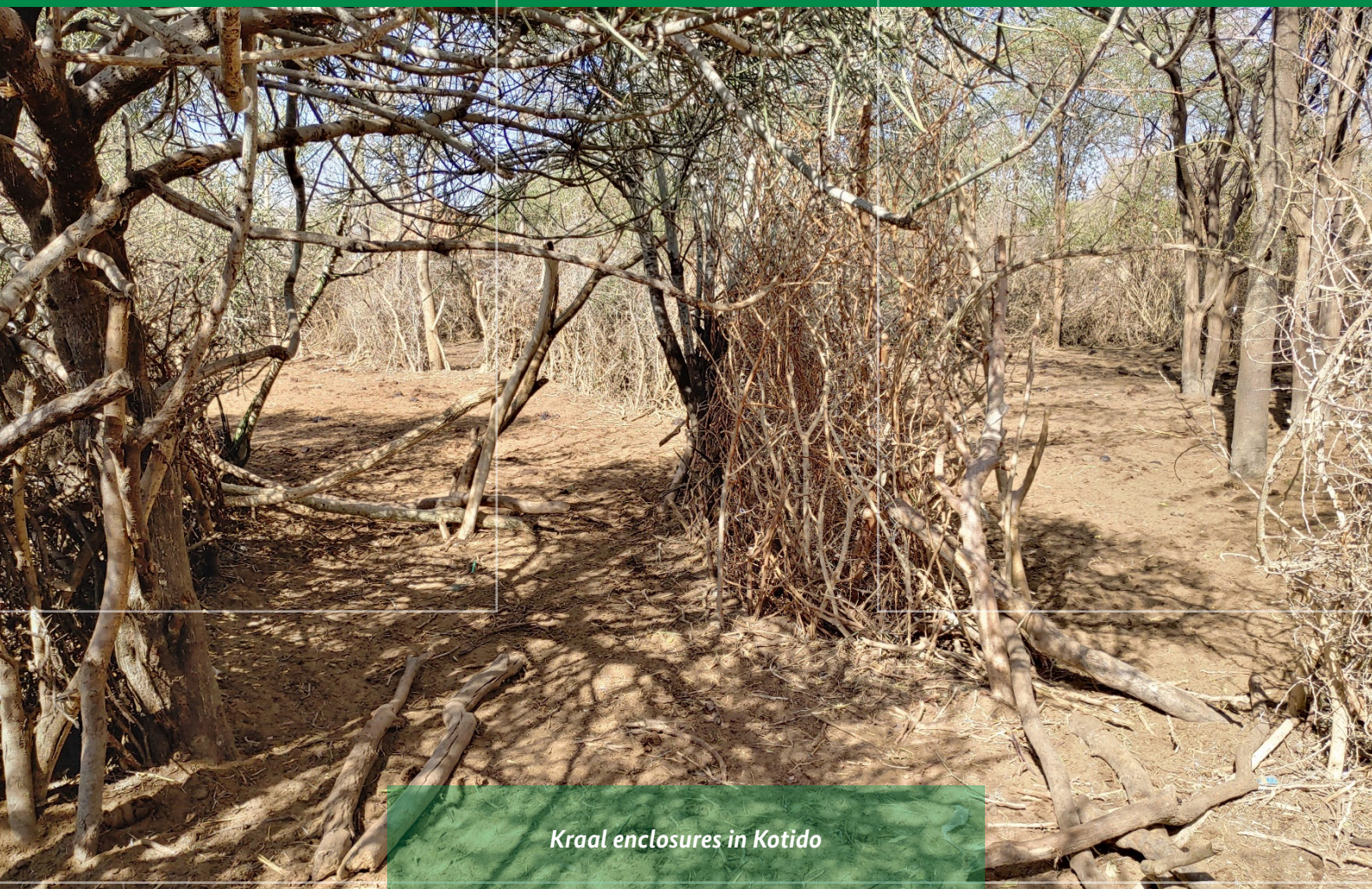
- 1 – Karamoja
- 2 – Borana
- 3 – Somali
- 4 – Dikhil
- 5 – Ethiopia; South Sudan
- 6 – Ethiopia; Sudan
- 7 – Ethiopia; Sudan; Eritrea
- 8 – Ethiopia; Somalia

Figure 1: IGAD Border Clusters
source: IGAD

Section

I

Climate Change, Livelihood and Human Mobility in the IGAD Region



Kraal enclosures in Kotido

Ecology, Economy and Livelihoods in the IGAD Region

The IGAD region, which stretches over an area of 5.2 million square kilometres, comprises Djibouti, Eritrea (suspended membership), Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda. On this vast expanse live approximately 230 million people, the majority of whom depend on a combination of livestock rearing and rainfed agriculture for their livelihoods. The border regions of IGAD are generally known for their pervasive poverty, high degree of vulnerability, growing populations, insecurity and conflict. Compounding these issues is climate change and ecological degradation, which are critical concerns for the communities whose livelihoods are intimately linked to weather patterns and access to viable land. Whereas several areas of the IGAD region are witnessing the impact of climate change, nowhere is the threat to livelihoods systems more pronounced than on the border regions where environmental volatility is pronounced, and hazards and risks concentrated (Hammond, 2017). Events such as droughts and floods can devastate communities, despite their adaptive defenses, because the coping strategies may not be adequate to compete with the scale of change.

Pastoralism is a highly specialised, adaptable, resilient, and efficient system of production that produces high quality protein sources with minimal resources (FAO, 2021b). This livelihood system depends heavily on the availability of and access to water and vegetation for animals. Moreover, mobility is a key strategy in pastoral production systems. Mobility is critical to forage and water access, and therefore animal productivity; it also ensures access to markets and income generation (IIED, 2009). Pastoralist communities also have sophisticated water and land governance and tenure systems, generally managed by elders, which are critical to the management of access

rights to grazing lands and the overall management of rangelands (Herrera et al., 2014). Although there are specific structures for the governance of key resources, such as water, there are various horizontal and vertical linkages in the community vis-à-vis the management of resources, which is typical of common property regimes.

Rivers on the IGAD borderlands also determine communities' subsistence and livelihood strategies. Rivers such as the Omo, which flows to the lower Omo valley and the Eleme Triangle, Wabi Shebelle and Genale Dawa in Southern Somalia, Blue Nile in Sudan, and Akobo in South Sudan, among others, allow for the practice of flood recession agriculture⁴ (WLE, n.d.) (of maize, sorghum) on their banks when there is sufficient rain in the highlands. Whereas much of the borderlands in the IGAD region are arid or semi-arid, the transboundary region of South Omo and Lake Turkana (Ethiopia-Kenya) differs significantly in its ecological diversity and richness (Carr, 2017). The Omo river basin has a mosaic of habitats and vegetation types, including grasslands, wetlands, riverine forests and woodlands, which provide for flood recession agriculture, pasture for animals, and wild plants for foraging. Lake Turkana, the world's largest desert lake, derives 80-90% of its surface water inflow from the Omo river (Avery, 2010). Fishing is a major livelihood strategy for communities living around these water bodies.

Although agriculture and fishing are practiced in the border areas, the overall climate and ecology is more suitable for livestock rearing, making livestock trade the backbone of the borderlands' economy. Although many individuals in border communities have adopted other livelihoods, these tend to generate low income, making livestock rearing one of the more secure, productive and favorable livelihood systems (Gebresenbet and Kefale, 2012; Iyer and Mosebo, 2017; Little et al., 2001). In addition to the sociocultural and political

⁴ Flood recession agriculture uses the residual moisture of seasonally flooded lands when the floods recede. This may be practiced on the banks of rivers or seasonal lakes.



Banks of Lake Turkana

importance of livestock, pastoral production is a significant contributor to the economies of the IGAD countries. It is estimated that livestock accounts for the livelihood of roughly 43 million people across the Horn of Africa. In the ASALs of South Sudan, Uganda, Kenya, Somalia and Ethiopia, livestock-based livelihoods are carried out by 85 percent of the population (Aklilu et al., 2013). Furthermore, in the Horn of Africa, the annual exports of livestock and products generates close to 1 billion US Dollars (Catley et al., 2013).

Despite an overall tendency by governments and other stakeholders to favor crop agriculture and marginalise pastoralism, the livestock trade is the backbone of the economy in the IGAD cross-border clusters. Livestock exports to the Middle East, in particular, contribute significantly to the economy. In the 1990s, exports from the Somali ports of Berbera and Bossaso were valued at US \$120 million, with about 80 percent of the traded

livestock originating in the Somali Region (Eid, 2014). The value of the livestock trade has since increased to above US \$400 million in recent years (Eid, 2014). Citing other reports, Aklilu and Catley (2010) estimate that 60-80 percent of Somalia's exports are re-exports with origins in the Somali Region of Ethiopia. Similarly, it was estimated that 16 percent of the beef consumed in Nairobi was of South-Central Somali origin (Little and Mahmoud, 2005). In Moyale, cross-border trade accounts for 75 percent of the livestock traded (Pavanello, 2010). The markets in Mandera and Moyale are supplied by the Somali and Oromia regions in Ethiopia, north-eastern Kenya and the Lower Juba in Somalia (Pavanello, 2009). On the other hand, camels purchased from Mandera in north-eastern Kenya and southern Somalia are trekked to Ethiopian Moyale. From there, traders truck them to central Ethiopia from where they export them to the Middle East (Pavanello, 2010).

Climate Change Impacts on Livelihoods in the IGAD Region

Climate change projections in the IGAD region/the Greater Horn of Africa point to a faster warming of the region compared to the global mean, with projected changes in surface temperatures and precipitation levels (Osima et al., 2018). Modelling shows an increase in dry spells, a decrease in wet spells, and a general reduction in rainfall, all of which will likely have a negative impact on the livelihoods of people in coastal cities, lake regions, highlands, and ASALs of Kenya, Somalia, Ethiopia, and Sudan, among other countries (Osima et al., 2018). Although no stranger to environmental variability and adept at exploiting variability for pastoral production, communities in the borderlands have been and are likely to continue facing devastating losses due to drought and other rapid and slow onset events.

In pastoral areas, climate risk is projected to rise due to increases in rainfall variability temporally as well as spatially (Herrero et al., 2016). The increased frequency of events such as drought, flooding and extreme highs and lows of temperature will have significant impact on the rangelands by bringing further changes to herbage growth and quality, changes in the composition of pastures, and consequently nutritional stress for animals (Herrero et al., 2016; Thornton et al., 2009). This, in turn, will affect overall productivity by negatively affecting herd dynamics and stock density. Climate change-related factors and the growing occurrence of disasters also modify interactions between pathogen vectors and animal hosts, leading to a rapid spread of animal diseases (FAO, 2021a). These, in turn, have critical socioeconomic consequences. As an example, it is estimated that the loss of animals and connected losses in milk and meat in Kenya could amount to more than US \$630 million by 2030 (Herrero et al., 2010). Moreover, beyond the macroeconomic impact, this production loss also has severe consequences

on nutrition and health: for example, between 2008 and 2018, it is estimated that post-disaster production losses amounted to an annual dietary energy supply of 82 days of calorie intake per capita per year (FAO, 2021a). In pastoral areas, declining animal health as a result of climate change effects have a direct impact also on the production of milk. This has serious, negative implications for not only the animals, but also the humans who depend on their animals for nutrition.

Besides its economic impact, climate change is also indirectly (or sometimes directly) responsible for changing social relationships between communities along the borderlands. Ecological changes have also been analysed in the literature for their relationship with conflict through the adverse effects on livelihoods and resources (Barnett and Adger, 2007; Raleigh and Urdal, 2007). Although widely believed that scarcity leads to conflict, research has shown that the relationship between these two phenomena is more complex (Adano et al., 2009; van Baalen and Mobjörk, 2016). For instance, studies among pastoralist communities in Northern Kenya show increases in livestock raiding both during wet years and dry years (Ember et al., 2012; Witsenburg and Adano, 2009). The studies show that during the wet season, conditions such as high grass and dense bush make it easy to raid and transport animals in Uganda-Kenya, whereas in the dry season, the short grass allows for faster movement of cattle in South Sudan (Eaton, 2008; Ochan, 2007).

Causality notwithstanding, resource scarcity as a result of climate-induced change can cause conflicts to emerge. This can occur when herders expand the foraging area to include agricultural land, which may cause disruptions in harvest for neighboring agriculturalists; similarly, conflicts can occur when agriculturalists encroach rangelands. However, it is critical to note that resource-related conflicts in the IGAD region are generally between pastoral groups and takes the form of raiding, whereas herder-farmer conflict in East

Africa remains scarce (Kratli and Toulmin, 2020). In addition, increasing conflict risk is only indirectly related to climate change and has a greater link to worsening livelihood conditions and loss of income. The climate-conflict link is also arbitrated by migration, whereby the movement of herders into areas with greater water and forage resources can create conflict with other groups (Mobjörk, ND).

Finally, environmental degradation and resource availability are strongly influenced by developments around land use and access, and anti-pastoralist government policies play a gravely negative role in this regard. There is ample evidence of productive land being put to agricultural, conservation, large-scale development or other non-pastoralist use in several border areas of the Greater Horn of Africa/IGAD. This further exacerbates herd productivity particularly during prolonged droughts when valuable patches of grazing land are no longer available (Little and McPeak, 2014). The push to greater sedentarisation and the rapid urbanisation in pastoral areas contributes to resource scarcity. Moreover, the depletion of natural resources and degradation of land due to overstocking and reduced mobility undermines livelihoods and increases vulnerability (Carr, 2017; Catley et al., 2013).

In the IGAD region where most countries are classified as Least Developed Countries (LDCs), these impacts will be further compounded by the overall marginalisation of pastoral areas. Far from national centres, borderlands typically occupy a peripheral space in national policy and priority, from the development perspective. However, states also have continual interest in their borders primarily driven by geopolitics and the various extralegal activities for which borders have come to be known.

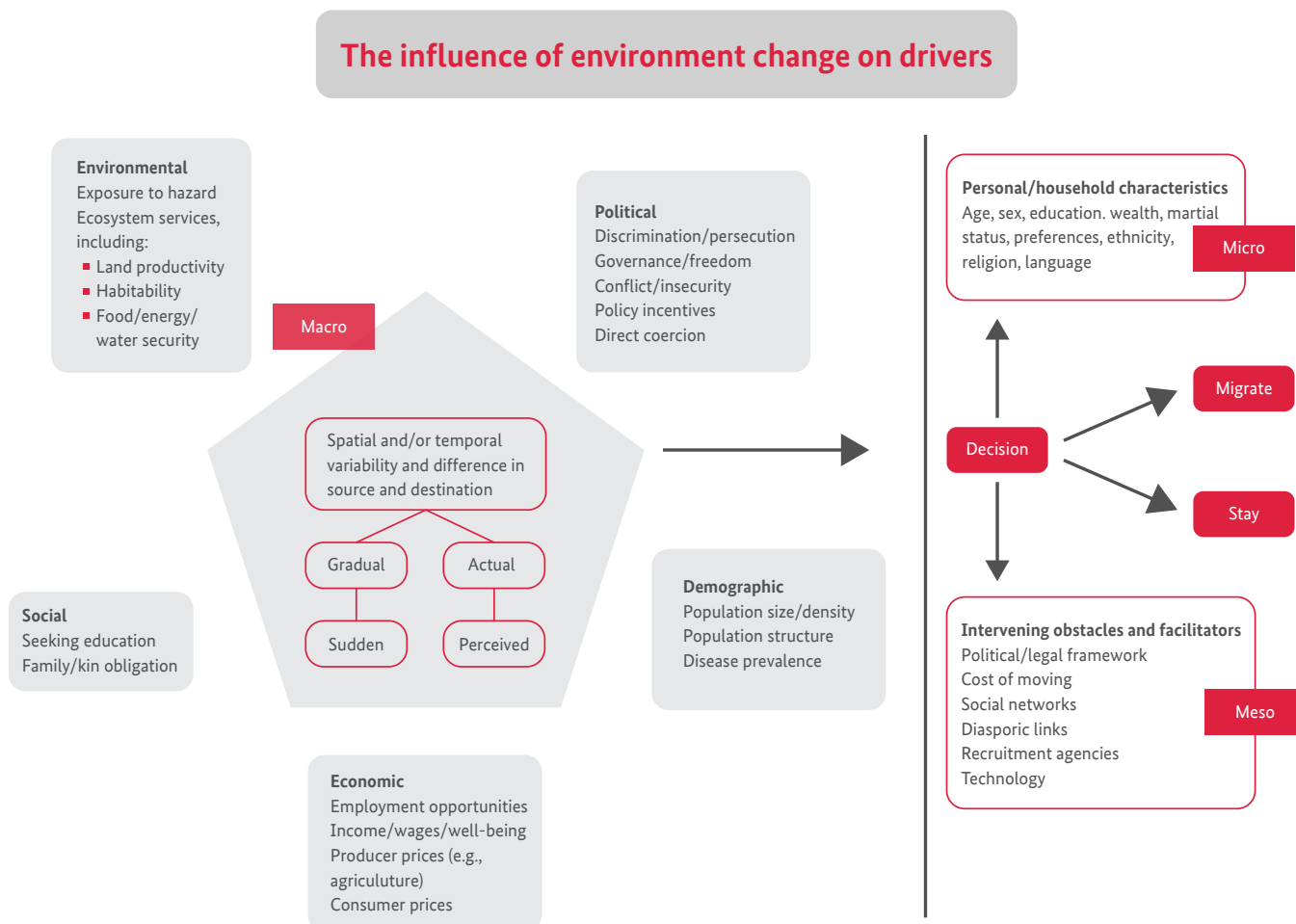
Mobility and Migration in the IGAD Region

Mobility and migration are defining features of life in the IGAD region's cross-border clusters and take the form of livelihood-related mobility, cross-border trade, irregular migration, labor migration, and forced displacement due to conflict or rapid and slow-onset environmental events. Mobility is a principal livelihood strategy among borderland communities; its link to vulnerability and resilience is evident in how mobility influences daily livelihood options and adaptation to shocks (Hammond, 2017). Finding sources of water and pasture for animals, bringing animals to sell in border or terminal markets⁵, and accessing towns for various forms of informal cross-border trade are some examples of the use and importance of mobility.

First, it must be stated that the influence of climate change on migration decisions is mediated through existing economic, environmental and political drivers at the macro, meso and micro levels (Foresight, 2011; Rigaud et al., 2018). Influences beyond the control of individuals, households or communities – such as demographic shifts, commodity prices, and political conflicts – are macro-level factors. Micro-level factors, on the other hand, include individual and household characteristics such as education, health, risk perceptions, etc. Decisions to migrate in the face of climate change is, therefore, influenced by a combination of these factors as illustrated in the drivers of migration framework (Figure 2) developed by the *Foresight* report (and adapted from the World Bank's (2020) "From Isolation to Integration" report).

⁵ Final market for animals is dominated mainly by processors and large marketers for the purpose of slaughter, processing or export.

Figure 2: Drivers of Migration Framework



The drivers of migration framework consider the factors that are taken into account while making a decision on mobility, rather than predicting mobility (Hammond, 2017). Desirability of potential destinations are evaluated environmentally, politically, demographically, economically and socially, and whether the advantages of moving are clear. The likelihood of a person moving decreases if the actual and potential destinations do not differ significantly on these aspects. Moreover, the individual or household's characteristics (also known as the vulnerability context in the Sustainable Livelihoods Framework of analysis (SOAS, n.d.)) are also critical considerations in the decision to migrate.



A pastoralist with his livestock at a watering point in Lorengkipi, Turkana, Kenya.

Mobility due to severe drought is a common phenomenon in the IGAD region's borders. In 2017, for e.g., 700,000 people in Somalia, over 300,000 people in Ethiopia and 41,000 in Kenya became displaced due to the impact of drought on natural resources, livelihoods and social conditions (IOM, 2017). The drought also triggered cross border movements, particularly between Somalia-Ethiopia and Somalia-Kenya.

The literature consulted shows that the countries of origin for climate migrants in Kenya, Uganda, and Ethiopia are, typically, Somalia, South Sudan, and Ethiopia (Bayar and Aral, 2019). Although the majority of "climate migrants" move within the borders of their country, there are also those who cross international boundaries in search of security. In 2019, natural catastrophes in Somalia were responsible for 17,694 documented displacements between January and December of that year (IOM, 2020). These Somali citizens apparently fled owing to natural calamities, with statistics indicating that

of the majority that travelled over the Horn of Africa route, around 84% of travelled to Ethiopia and 6% to Djibouti (IOM, 2020). Furthermore, in 2019, more than 1.5 million people were newly displaced, both inside and beyond national boundaries in the IGAD region. Many of those compelled to migrate have previously been affected by extensive rainfall decreases (IGAD, 2019).

Community Coping Mechanisms in the IGAD Region

Although highly specialised and efficient in working with variability and uncertainty, the IGAD region's pastoralists are now confronted with the severe impact of climate change.

Nevertheless, there is a growing perception among communities in the East and Horn of Africa of the negative climate impacts as linked to climate change (UNHCR, 2012). Communities

have attributed harvest failures, drought, depleting water resources, and subsequent decrease of livestock herds to climate change. To address this, governments and non-governmental organisations have devised a range of initiatives such as early warning systems, rainwater harvesting, community-based rangeland management, the introduction of drought-resistant seeds, improved agricultural techniques and so on (UNHCR, 2012). However, it bears repeating that viewing pastoralists' reduced adaptive capacities only as a result of climate change would be erroneous; some of the root causes of pastoralists' vulnerability is engendered by marginalisation, unfavorable policies, and government apathy (Gebre Michael et al., 2011).

Pastoralists deal with climatic variability, fluctuations in water and forage availability, and uncertain political situation through a range of adaptive and risk management strategies. These include mobility (including seasonal movements), herd accumulation, livelihood diversification, spreading livestock in different management units, and maintaining networks of solidarity, among others (Bollig, 2006; Little et al., 2001). In addition to these individual or household strategies, pastoralist communities have 'traditional' resource governance structures that manage access to resources and arbitrate in cases of disputes.

These governance systems provide members with high levels of influence in decision-making as well as enforcement. As such, community members tend to perceive them as more legitimate and participatory than structures established by the nation states. These more traditional governance systems are however not without their flaws. Whereas elders continue to have decision-making power and feel that they have authority in Karamoja, some women and male youth question this authority for its rigidity in the face of changing socioeconomic conditions (Carlson et al., 2012). In addition, their relationship with formal

government structures also remains fraught where the council of elders wield greater power in the informal sphere than appointed leaders.

Risk management among pastoralists is coming under further strain as adaptive practices become increasingly incongruent with new stressors such as loss of land, increasing environmental changes causing resource scarcity, and the continued disregard of borderland communities' interests and needs. Despite these gargantuan hurdles and as environmental variability worsens due to climate change, pastoralists have developed other, new innovative ways through which to respond to these conditions. These include the following examples:

- The development by Ethiopia's Afar pastoralists of a cut-and-carry system of collecting forage from the Awash National Park. This innovation includes collective action by community groups that rent carts jointly, using money contributed by group members, and then distribute the forage within the community (Gebre Michael et al., 2011).
- Changing herd composition by shifting to more productive species as done by pastoralists in Somali, Afar and Oromia regional states in Ethiopia. Confronted by severe droughts that were frequently and devastatingly fatal to cattle populations, pastoralists shifted attention to camel production, which was vastly more reliable in the arid conditions and did not prove as costly as cattle pastoralism (Yosef et al., 2013).
- Livelihood diversification in the Horn of Africa, which has been a necessity for borderland pastoralist communities, both due to rising pressures on the pastoral system as well as a buffer against risk (Little et al., 2001). These new livelihoods include small-scale mining, trade, construction, small businesses, and wage labor.

Section

II

Case Study - The Karamoja Cross-Border Cluster



Pastoralists meeting the research team in a key grazing area in Nakonyen, Karamoja, Uganda.

Context

The Karamoja cross-border cluster refers to the borderlands between Uganda, South Sudan, Kenya and Ethiopia, home to agro-pastoralist and pastoralist communities – commonly referred to as *Ateker* – who speak mutually intelligible languages and share various sociocultural institutions. In IGAD's classification, it is cluster one of the eight defined clusters (see Figure 1). This border cluster stretches from Kenya's Lake Turkana – the world's largest desert lake – in the east to Uganda's Karamoja Region in the west, and from South Sudan's Boma plateau and Ethiopia's South Omo Zone in the north to the Kenyan highlands in the south. The dominant borderland communities, part of the Ateker (or Karamojong) cluster of Nilotic languages, include Turkana, Karamojong, Jiye, Toposa, and Nyangatom. Other major communities of the wider region include Dasanach (Kenya-Ethiopia), Didinga (South Sudan), Tepeth and Pokot (Kenya-Uganda).

The most viable livelihood options in this cross-border cluster are pastoralism and agro-pastoralism. Although there are certain areas, such as Turkana County in Kenya, which is drier than others, periodic rains are used throughout the region to grow sorghum, the most suitable crop for this type of climate. Besides livestock, the economy of the areas also includes trade in agricultural produce, honey and bee products, gums and resins. The sociopolitical institutions and patterns of conflict and cooperation between the region's communities are shaped by a pastoral economy and its inherent mobility practices and land access rights. This mobility, upon which pastoral production heavily depends, has been transformed in recent years due to a combination of a changing climate, unfriendly policies and development challenges (Levine, 2010; Mueller et al., 2020).

Despite these obstacles, pastoralism and the livestock trade have persisted in the Karamoja cross-border cluster. Pastoralism constitutes 19%, 13%, and 8% of total GDP in Ethiopia, Kenya, and Uganda, respectively (Nyariki and Amwata, 2019). South Sudan's livestock contribution to agricultural GDP in 2013 amounted to about 14.5% (ICPALD, 2013). This critical role notwithstanding, the cluster is also known for its vulnerability – for instance, according to the Uganda National Household Survey 2012/13, although the national average for income poverty was 19.7%, the Karamoja subregion of Uganda had a rate of 75% (UBOS, 2014). Poverty indicators in Karamoja reflect a host of challenges such as recurring droughts, cyclical conflict over resources, and exposure to livestock illnesses, among others.

Climate Change in the Karamoja Cross-Border Cluster

According to the Food and Agriculture Organization (FAO, 2019b), droughts, both frequent and persistent, are a recurring element of the Karamoja cluster. For instance, between 1991 and 2000, the Karamoja region has witnessed seven droughts, and additional droughts in 2001, 2002, 2005, 2008 and 2011 (ISS, 2020). Climate change is exacerbating the effects of periodic droughts by hastening desertification and degrading the ecosystem of rangelands. The ensuing continuous food insecurity of pastoralist communities is aggravated by the emergence of Transboundary Animal Diseases (TADs) and the escalation of conflicts over natural resources within and between nations.

In Karamoja, climate change is apparent in a few chief ways. A recent analysis points to an increase in average monthly rainfall in Karamoja over the last 35 years; however, this is accompanied by an increase in variability with unpredictable rain leading to an increase in periods of low or no

rainfall and heavy rainfall (Chaplin et al., 2017). Concurrently, there is also evidence of rising temperatures, with an increase in the occurrence and duration of heat waves and reduced availability of water (Chaplin et al., 2017). However, with regard to perception of climate change, Chaplin et al. (2017) report that, in their study, nearly 2/3 of respondents did not perceive any changes in climate or were unsure about the occurrence of climate change. For those who did report observing changes, they most frequently report the increase in the number of 'hot days.' On the other hand, a study conducted in 2015 found that the majority of the pastoralists interviewed (99%) perceived that Karamoja's climate had changed with high but erratic rainfall, floods, high temperatures, hailstorms, and early cessation of rainfall, among other indicators (Egeru, 2015). Studies have found similar levels of perception of climate change in Turkana (Opiyo et al., 2016).

Findings related to climate change perceptions have critical bearing on adaptation measures taken by households and individuals, where those who perceive and observe changes may be more likely to engage in preparedness. In Chaplin et al.'s study, over three-quarters of the respondents reported not having made any changes to adapt to the impact of climate change due to lack of understanding. Among measures adopted were tree planting, sale of charcoal and firewood as a coping mechanism, and joining a credit or microfinance group. Although this study did not find any specific climate adaptations, it should be borne in mind that Karamoja's pastoralists use a range of risk management strategies to work with and exploit climatic variability.

The borderlands' communities and their livestock move inside and across borders on a regular basis, making proficient and strategic use of changes in land cover and resource availability to ensure water

and pasture for animals. In addition to mobility, some other adaptation strategies in the Karamoja Cluster include livelihoods diversification, changing herd composition, selling livestock to acquire investments such as motorbikes, and sending children for formal education (Lumborg et al., 2021; Opiyo et al., 2015). Although early warning mechanisms have been established in some places of the border cluster, in other areas, such as in South Omo, there is a perceived limited access to early warning which is said to be a barrier in adapting to climate change (Gebeyehu et al., 2021).

The presence of Lake Turkana, however, makes fishing a principal livelihood for some people, and fishing is a supplementary or alternative food source for pastoralists although there is concern about the drying up and shrinking of Lake Turkana. Within the past decade, the lake has receded by about 400 metres. In addition to climate effects, the lake water levels are affected by reduced inflows from the Omo River in Ethiopia, which provides about 90% of the lake's annual inflows (Avery 2013).

Turkana has an arid environment marked by two rainy seasons—long *akiporo* rains (March–May) and short *akicheret* rains (October–November). Together, these average 300–400 mm of rainfall annually. Long rains are important for livestock as they affect pasture and browse regeneration as well as the recharge rate of water sources for cattle (Mutua and Owade, 2017).

Climate shocks have led to livelihood insecurity as a result of rising temperatures, recurrent droughts and unpredictable and unreliable rainfall patterns. With limited water sources in Turkana, pastoralists seek dry season grazing areas in Uganda and South Sudan (USAID, 2011).



A Turkana elder in Naotin, Turkana, Kenya

Impact of Climate Change on Livelihoods and Migration Patterns in the Karamoja Cluster

Climate change, as expected, has had an impact on the lives and livelihoods of agro-pastoral communities in the Karamoja Cluster. In the South Omo Zone of Ethiopia, this had meant rising temperatures and therefore greater evapotranspiration, which will negatively affect water and pasture availability (Enyew and Hutjis, 2015). The combination of drought, floods, resource-based conflicts and pressure on scarce natural resources, economic and sociopolitical marginalisation, adverse effects of climate change and incessant armed conflicts and violence has undermined the capacity of households to cope with these disturbances.

Furthermore, despite high annual per capita GDP growth rates registered by the Karamoja cluster countries, which in 2018 averaged 6.1 percent for Uganda, 6.3 percent for Kenya, and 6.8 percent for Ethiopia (with the exception of South Sudan, which averaged -11.2 percent in 2016 (World Bank, 2021)), the ASALs in these countries remained chronically vulnerable to food insecurity, recurring severe droughts, increasingly unpredictable rainfall regimes, and the worsening ecological circumstances leading to the loss of livelihoods and high incidence of poverty (IGAD, 2020).

Evidence shows that climate change, which has had a severe impact on the Karamoja cluster, has disrupted pastoralist movement patterns. According to Young (2011), climate change has not only undermined resilience and worsened

competition for scarce resources in the Karamoja cluster, but it has also resulted in new patterns of movement and conflict. According to Catley & Scoones (2016), movement patterns differ within the cluster. Internal migration is widespread among the Karamojong in Uganda's seven districts. The most prevalent pastoral movement across an international boundary within the cluster is by the Turkana of Kenya to the considerably more resource-rich area of the Karamojong of Uganda. On a smaller scale, Ethiopian Dassenech cross the border into Kenya to reach the northern coasts of Lake Turkana. Meanwhile, during the dry season, the Nyangatom of Ethiopia and the Topossa of South Sudan cross the disputed Ilemi boundary. It is therefore evident that the crippling effect of climate change is threatening livelihoods in the Karamoja cluster, aggravating the shortage of vital pastoral resources and requiring pastoral movement outside traditional migratory corridors. Drought, more than any other condition, stimulates the cluster inhabitants' migration to water, pasture, and food-rich locations.

Gaps in the Literature

Whereas information on climate change dynamics and other climatological information about the Karamoja cluster abounds in the literature, studies on influence on borderland communities and their adaptive strategies and coping mechanisms remains scant. This is not without exceptions, of course, and, as demonstrated above, several examples of research on community perceptions and adaptations in the face of climate change are cited in the sections above. A deeper

understanding of cross-border communities' decision-making around mobility and migration, in addition to other adaptive strategies, to cope with rapid environmental change and ecological degradation remains limited. The field research section of this research study will investigate these decision-making processes among community members on the Karamoja-Turkana border areas, and the role of macro, meso and micro level factors in decisions to move, migrate or stay.

The extant literature is also generally scant on the perceptions, adaptive behaviors, and role in combatting climate change of women in IGAD's borderland communities (Musau, 2021) (REF, 2017). Climate change, like other phenomena, has a disproportionate effect on women, particularly agro-pastoral women, who not only bear the burden of household nutrition through crop agriculture and other livelihoods, but are also responsible for most domestic chores. It is well established that climate change influences women differently than men; in East Africa, women's responsibilities rely heavily on rivers, livestock and agriculture, all of which are heavily influenced by climate change (Abebe, 2014). In the Karamoja Cluster, existing inequalities between the genders and women's decreased agency in community matters may act as barriers for collective action to address climate change. As such, the field research will also consider questions on how climate change may be influencing relationships between the genders; how gender influences vulnerability to climate change; and how migration (related to climate) and gender interact in the Karamoja Cluster.

Field Study

Rationale for Field Study

As remarked above (literature review), information on cross-border communities' decision-making on mobility and migration in the context of climate change on the Karamoja-Turkana border (in addition to other areas of the HoA) remains scant. Understanding the impact of drought and other climatological phenomena on the livelihoods and migration trends of rural communities is of urgent importance to inform policy and programming. As such, a field research study was carried out as part of this study among community members on the Karamoja-Turkana border areas. The study investigated the impact of climate change, and the role of macro, meso and micro level factors in decisions to move, migrate or stay.

Research Questions

The main research questions the study considers are:

1. How have slow onset climate changes, and more specifically drought, affected the livelihoods of pastoral and agro-pastoral border communities?
2. How has climate change influenced decisions on mobility and migration?
3. What coping mechanisms have these communities adopted to deal with the effects of slow onset climate change on their livelihoods?



Researcher conducts an interview in Loyoro, Karamoja, Uganda.

Methodology

The broad methodological approach of this study is an interpretivist, qualitative inductive approach drawing inspiration from the grounded theory tradition and using a range of research instruments to explore the reasons behind the developing trends, in order to provide meaningful results and policy suggestions. The qualitative approach is ideal for the exploration of human experience (Yin, 2009). Specifically, a qualitative phenomenological research design was used for this study. The goal of phenomenology is to describe the meaning of this experience—both in terms of what was experienced and how it was experienced. This design was best suited to uncover information concerning livelihoods, resilience and migration in the context of climate change in the Karamoja region because it is an approach to research that seeks to describe the essence of a phenomenon by exploring it from the perspective of those who have experienced it (Teherani et al., 2015).

Research Locations

The research study was carried out between 3rd January 2022 and 15th January 2022 in 4 districts of Karamoja and 2 wards of Turkana County. For a full list of research locations, see Annex 1.

Site and Participant Sampling Procedures

A mix of purposive, snowball and convenience sampling techniques were used. Purposive sampling was used to select participants for the Focus Group Discussions (FGDs) as well as the Key Informant Interviews (KIIs) and in-depth interview participants. Interviews and discussions were conducted in Pokot, Karamojong and Turkana languages (the latter two are mutually intelligible). Locations close to the international border where conditions are generally arid and semi-arid were prioritised. Community members were selected to capture age- and gender-related differences of perceptions, experiences and opinions. The sampling ensured equitable distribution of age groups in order to capture varied experiences and practices. Through snowball sampling, participants or informants with whom contact has already been made were requested to refer the researchers to other people in their network who could potentially participate in or contribute to the study. In total 137 people participated in the study, 61 of whom were women and 45 were young people (15 – 35 years of age).

Data Collection Methods

FGDs: A total of 11 FGDs were conducted (5 in Karamoja and 6 in Turkana). Questions and topics of discussion in FGDs included perception of pastoralists about climate change and variability, the impact on livestock and crop production, and migration decision-making and trends. The FGDs enabled conversations between participants on experiences and issues in their communities.

KIIs: To collect detailed information on communities' vulnerability, migration patterns, government intervention, etc., the research team focused on a limited number of carefully selected key informants from the research locations, totaling eight (8). Key informants comprised a government drought management officer in Lodwar, community leaders, kraal⁶ leaders (including influential women in the communities), and development and humanitarian workers who are directly involved in climate change-related projects in the study locations. These interviews helped enrich the understanding of nuances on issues related to drought and the coping mechanisms employed by pastoralists.

In-depth interviews: To get deeper information on issues of concern regarding pastoralism, migration and climate change, the research team carried out 8 in-depth interviews. These interviews are life history interviews and considered the interviewee's history in the location and the factors that have contributed to their livelihoods and migration-related trajectories.

⁶ Kraal (word of Afrikaans origin; Karamojong word: ere) refers to an enclosure for livestock within a wider household or settlement that is enclosed with thorn bush branches and other materials, typically in a circular form. Karamojong and Turkana communities typically have smaller kraals inside their more 'permanent' homes and larger kraals in the rangeland areas. Enforced sedentarisation and rapid urbanisation over the last couple decades have meant that the majority of the animals – what little is available in each household – is generally kept for the better part of the year on the rangelands, with various kin and non-kin responsible for their wellbeing and safety.

Findings

1. Perceptions and Understandings of Climate Change

Given their specialisation in living with uncertainty and adaptability, pastoralists in Karamoja and Turkana discussed their long and varied experiences dealing with the vagaries of the climate. However, in some areas such as Turkana, the drought is said to have never gone away. Where in Karamoja, the dry season – punishing as it may be – continues to have a level of predictability, across the border in Turkana, seasonality has become vague with dry conditions persisting continuously. First, it is important to note that all study participants, particularly those from rural communities both in Turkana and Karamoja, are consistently aware of changing climatic conditions over the years and the telltale markers. The prolongation of dry seasons, the rising unpredictability of seasons, and the severity of the dry season were all listed as effects of climate change.

Among these, the unpredictability of seasons was explained to us in the following way:

*We grew up knowing how the seasons were arranged... when it was the month when the clouds were supposed to gather, it would happen, and everyone would know that the rain is near. The following month, it would rain. You would know that the next season would be dry. But nowadays, you cannot know... it can rain during the time of drought. The fruits on the acacia tree come at a time when no one is expecting them. You start to wonder – what kind of fruit is this?*⁷

The prolonged dry season destabilises planting timelines, adversely affecting pasture and, subsequently, food security and animal health. Some participants also expressed an understanding of climate change processes. For instance, an informant reported evapotranspiration in the



A section of study participants at Loroo sub county, Karamoja, Uganda.

following way: *If there is too much wind, it will take away the rain... every time it rains and wind comes, it destroys the rain. Just when a rainbow appears, you know that there will be no more rain*⁸.

Participants of this research study attributed the worsening climatic conditions to: cyclicity – one bad year followed by a good –; to a supernatural force and changes brought about to the landscape. For some in Turkana County, however, this cyclicity appears to have disappeared, with the dry season extending to years⁹. A participant in the study said there is reduced migration because there is wide-ranging drought, and that youths migrate on a more permanent basis. Secondly, divine intervention in climatic matters was widely acknowledged as a driving force – *It is God who does that (climate change), not us. He is the one who gives us water, and sometimes he refuses to, because it is only God who can do that not us*¹⁰. Although

⁷ FGD with women, Eliye, Turkana

⁸ FGD with men, Kaabong, Karamoja

⁹ FGD with men, Loima, Turkana

¹⁰ FGD with women, Naput, Karamoja

a widespread belief that matters of climate are generally divined by God, some informants did list other factors driving climate change such as felling of trees for survival activities (such as charcoal), industrial development, particularly in the extractives sector, and an increase of population in the area¹¹. These findings mirror those of a recent study in which 100% of the participants (103) noted increased unpredictability of precipitation or drought when reporting impact of climate change (Abrahams, 2021).

2. Livelihoods

2.1. INTRODUCTION

The Karamoja region and the Turkana region are among the poorest in Uganda and Kenya, respectively. The Uganda Demographics and Housing Survey 2019/2020 put the number of people living below poverty in Karamoja at 66%, coming only second to Acholi sub region. The Turkana region, has an absolute poverty rate of 79.4%, a term defined simply as the inability for a household, family or person to meet basic needs including food, shelter, safe drinking water, education and healthcare (Muiruri, 2021).

Livelihoods in Turkana are primarily based on livestock production with most of the cash earnings come from sales of livestock or livestock products (Watson and van Binsbergen, 2008). Approximately 70% (Watson and van Binsbergen, 2008) of the area's residents are nomadic or semi-nomadic pastoralists. According to OXFAM, Turkana's herds are composed of 2,619,323 goats, 931,323 sheep, 89,832 cattle and 175,851 camels (Matete and Shumba, 2015).

Other key livelihoods in Turkana include fishing, honey production, irrigated agriculture, basket-making and handicrafts, processing and selling of hides and skins and small-scale business enterprise.

2.2 IMPACT OF DROUGHT ON LIVELIHOODS

Participants of this research study echoed the key findings of previous work in terms of impact of climate variability and uncertainty, including depleting water and pasture sources and resultant impact on animal and human health.

A large proportion of Karamoja can be classified as livestock poor. Applying the 3.3 Tropical Livestock Unit per household¹², a study found that 56.5% of the population from 6 selected districts were below the threshold, and, therefore, livestock poor (Catley and Ayele, 2021). The low livestock asset base in a vast majority of Karamoja's households has critical repercussions on general well-being. First, insufficient access to animal milk has direct and indirect impacts on the nutrition of children and their mothers (Stites and Mitchard, 2011). Secondly, an over-reliance on non-pastoralist livelihoods has been reported in Karamoja where livestock poor households rely on low wage jobs and trade that have minimal to no impact on asset wealth (Iyer and Mosebo, 2017). Lastly, low livestock holdings also sometimes mean that households invest more in crop production, which is subject to the vagaries of climate and frequently fail. These observations also apply to the Turkana area where frequent and severe droughts have exacerbated poverty. Turkana households use such coping mechanisms as selling firewood and charcoal, fishing and brewing (Waila et al., 2018).

In the FGDs and KIIs for this study, informants reported declining animal health, rapidly spreading animal diseases, low pasture availability and quality, and decreased water sources. Whereas these are some of the same concerns that pastoralists in the Karamoja Cluster have faced for decades, the intensity of these stressors is said to have increased in conjunction with the changing climate. As well, it is critical to note that some of the coping mechanisms in the face

¹¹ FGD with men, Kanamkemer, Turkana; KII, Kaabong, Karamoja

¹² A measure applicable to other dryland areas of Africa.

of these challenges (as described below) are also detrimental to the environment and the ecology and further exacerbate the negative impacts of climate change. With minimal, shortsighted and temporary support from external interventions, the impact on particularly livestock-based livelihoods has been shown to have devastating impacts on community wellbeing. With dwindling livestock holdings, lack of support to livestock-based livelihoods, and ecological degradation, pastoralists have little choice but to depend on alternative sources of livelihood that have low returns, do not contribute to productive assets, and are, ultimately, unsustainable in the long-run. Alternative livelihoods have also been severely and negatively affected by climate change – for instance, brewing, a primary source of livelihood for women in Karamoja, depends on the ability to either grow or buy sufficient stocks of sorghum and maize. Both the purchase and cultivation of these crops fluctuate rapidly and unexpectedly as a result of climate change.

2.3. PRIMARY COPING MECHANISMS

A vast majority of pastoralists who were interviewed for the study in both Turkana and Karamoja described drought conditions as becoming more permanent and no longer seasonal. In Karamoja, interviews in Loro, Nakonyen and Naput in Amudat and Moroto districts, respectively, showed longer term drought seasons are expected overall, and that mobility is the core adaptation mechanism (to be discussed in detail in a later section).

The immediate, short and long term effects of climate change have forced pastoralists to consider a number of adaptation mechanisms applied during drought. The strategies implemented by pastoralists in Turkana and Karamoja to deal with the effects of drought range from environmental actions, social support-seeking, planning for drought and consideration of alternative sources of livelihood.



Focus Group Discussion with Karamojong and Turkana men in Naput, Karamoja, Uganda.

As previously noted, adaptation and coping strategies to drought in Karamoja, and Turkana is subject to prevailing environmental, political and socioeconomic factors, including marginalisation (Schilling et al., 2012). Based on these typologies, the various coping mechanisms of pastoralists to drought is presented in the following paragraphs.

As indicated in the following contribution by an FGD participant, shifting climate patterns and falling livestock numbers have led the Turkana to pursue alternate means of income, such as firewood and charcoal burning, the selling of local beer, and fishing: *We rely on charcoal so that you can sell it and receive something to eat. If the charcoal isn't sold, you'll have to stay in your current situation. Occasionally, the chief will pay a visit to the leaders and inform them of the issues that we face here; as a result, 10 sacks of maize will be sent so that we can eat that day*¹³.

¹³ Women FGD, 07.01.2022, Loya village, Lorengkipi, Turkana

Although few options exist outside resorting to alternative forms of livelihoods, these new economic practices have negative consequences for both the community and the environment. Though selling charcoal serves a short-term financial need, the accompanying deforestation and long-term impact of prolonged drought and environmental degradation will eventually lead to increased food insecurity through the loss of ecosystem services. While wild fruit are a common source of fallback food during lean times, the increased burning of charcoal has resulted in the depletion of these trees. As recounted by one FGD participant: *When people are hungry, they will look for any other area to spend their time because they can't just sleep under a tree and not eat. They need to find something to eat. Even if it is in Uganda, one will have to move to another location to find food. It's possible that you'll die if you only drink water. To mitigate climate change's harshness toward us, we must forage for wild fruits*¹⁴.

Food aid, which is occasionally delivered to the Turkana people by the government and by some NGOs, is another source of food during times of great need, as evidenced in the following submission in an FGD: *When there is drought in this area, many people go hungry, our livestock suffers, and our health is threatened. It is only relief food that can aid us. That is why we stated that, at the very least, we have someone who can keep an eye on us. The government and NGOs are the ones that save us; I'm not sure if it's the chief who constantly presents our case to them. All of the youngsters will be overjoyed on that day, just as they are when it rains and the children receive milk. When the government and the Red Cross assist us, even rain falls quietly. Everything comes back to life*¹⁵.

However, given the continual threat and incidence of desert locust attacks and demand from other communities that border the Turkana people – who face similar challenges of drought and livestock disease – alternative food sources have reduced drastically. As detailed by an elder at an interview

at Kanamkemer in Turkana Central: *We had to migrate to Kakuma, where we settled in a place called Pelekech. We also met other communities who migrated to Pelekech. Their livestock had used up all of the grass available. We had no choice but to return to where we came from. Moreover, since the locusts destroyed everything, even the trees that are here don't produce any fruit. We have reached a point where we scramble for what little fruit is left [...]. I believe that we, along with our livestock, will suffer in this location*¹⁶.

Turkana became an epicentre of the impact of the locust invasion in 2020, leaving pastoralists in dire need of forage, with locusts eating up most of the region's herbaceous resources. Locust swarms were recorded multiple times in a year, severely impacting pastoralists' resources. These effects have been exacerbated by floods and COVID-19 happening at the same time.

During times of severe drought and hunger, Karamoja and Turkana pastoralists sell livestock to buy food items, or to generate money that will then be used to restock when the drought ends. Some are forced to sell their most valuable animals in order to buy food that will sustain them during times of hardship. There are cases where the animals are sold cheaply so that the resulting income can be utilised to buy other essential food products, as stated by a study participant: *When you wish to migrate, you won't do it just like that. You may be forced to sell one of your goats to provide food for those who will remain at home. You may take that goat to the Lodwar livestock market and sell it for ksh1000. You'll need to stock up on maize, sugar, and tobacco*¹⁷. Additionally, another major livestock-based adaptive strategy is the purchase of more drought-adaptive livestock such as shoats and camels (this is especially true in Turkana). However, the distress sale of livestock as a coping mechanism does not always guarantee income generation due to the progressive emaciation of livestock during drought, which, consequently, leads to lowered returns.

¹⁴ Men FGD, 4th January 2022: Kalokol/ Eliye - Turkana

¹⁵ Women FGD, Nasekon, Eliye, Turkana 4th January 2022

¹⁶ Men FGD, 5th February 2022, Kanamkemer, Turkana Central

¹⁷ Women FGD, Kalokol, Eliye in Turkana: 4th January 2022

For the survival of herds, pastoralists undertake strategies to maximise existing forage resources. In Turkana especially, a lot of plant varieties are useful in some ways as fodder to livestock. These include, but are not limited to, palm trees (*engol/ekingol*), prosopis, acacia pods (*ngitit*), and lake weeds. In order to purchase hay or acacia pods in the markets, pastoralists use their savings or sell their livestock. This is in order to guarantee that some animals will survive the drought.

The exploitation of land-based resources is another coping mechanism that is practiced by pastoralists. While most are aware of the environmental costs of these activities, they are usually last resort measures. These activities include small scale mining of gold, sand, rocks. The return from such small-scale mining is generally poor, against high cost to the individual and their families. Nonetheless, this income helps households meet basic nutritional needs. A participant in an FGD in Loroo said: *The bad thing that this year has brought is that there is too much hunger, we have nothing to eat. To help, some ladies told me there are places where we can mine gold. Women from Uganda go to Kenya to look for gold. The tunnels are deep, and when the ground gets loose it buries people inside. Sometimes 50 people are buried and they lose their lives just like that*¹⁸.

In Naput, Moroto District, continued exploitation of aloe vera has resulted in the establishment of a permanent settlement. Complemented by gold mining and limestone activities, Naput village has grown in size and population now to the extent that communities do not foresee a need to migrate elsewhere even as aloe vera resources are depleted. Naput presently is a hub of Matheniko and Turkana pastoralists who complement their livestock-based livelihood with small scale mining

activities. The basis of their livelihood remains pastoralism, however, with cows, camels, and small stock exploiting the Kobebe rangeland resources 40 kms north of Moroto town. A number of these land-based livelihood options are also dependent on security conditions in the area.

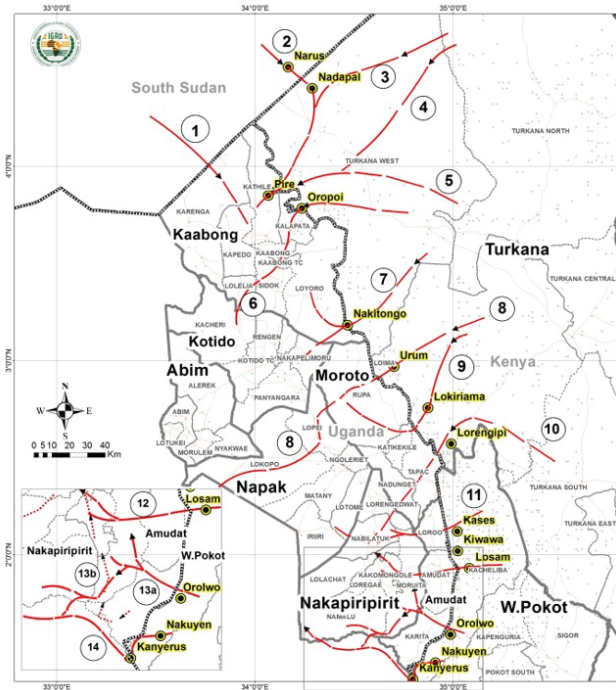
3. MOBILITY IN THE CONTEXT OF SLOW-ONSET CLIMATE CHANGE

Mobility and migration in the cross-border areas take a few main forms. Traditional transhumance pastoralism is the practice of moving animals regularly and repeatedly between seasonal grazing areas. It has long been practiced in the Karamoja-Turkana area. When they cannot migrate themselves, herders usually keep their animals under the care of their relatives and close members of their communities who move with the livestock several times a year and keep them in temporary camps or *kraals*. The rest of the family resides in semi-permanent dwellings called *ere*. Typically, the selection of grazing areas, routes, timing and other options is done in collaborative way, especially within geographic zones. Water and rangeland informal governance structures, primarily composed of community elders, assume the responsibility of redressing any grievances or conflicts.

Transhumant mobility also occurs, at a more frequent rate, within the borders of the countries. In terms of the international border between Kenya and Uganda, it should be noted that much of the movement of people and their animals is from Turkana to Karamoja as the latter generally provides better forage conditions than the relatively drier area of Turkana. As shown in the map below, transhumance routes generally originate in the east and move westward to Karamoja.

¹⁸ FGD in Loroo, 15th January 2022

(Source: IGAD Center for Pastoral Areas and Livestock Development)



Legend

- ➔ Prioritised route
- Sub_admin
- County/district
- Entry_points
- Settlement
- International border

CROSS BORDER TRANSHUMANCE ROUTES

No.	Transhumance route	Entry/Exit Point
1	Chukudum-Newkuch-Kidepo Ntl-KAwakol-Usake	Kidepo Ntl-
2	Narus(SSD)-Nadapal-Mogila ranges-Soleli-Pirre	Nadapal, Pirre
3	Lotikipi-Mogilla ranges-Pirre	Pirre
4	Lotikipi-Songot hill ranges-Pirre	Pirre
5	Pelekech Songot hill ranges-Pirre	Pirre
6	Kalobeyei-Nawantos/Oropoi-Naporoto-Timu-Ka,ion-Lolelia-Kacheri	Nawantos/Oropoi-
7	Letea-Loreng-Nakitongo-Morulem-loyoro/Nakapilemoru	Nakitongo
8	Loima hill-Urum-Nacharakan-Kobebe-Lopei	Nacharakan
9	Loima hill-Lokirama-Nakilora-Kobebe-Lopei	Nakiloro
10	Turkana South-Lorengipi-Katikile-Nanduget-Nabilatuk	Lorengipi
11	North Pokot-Alale/Kasitot-Lopedot-Nabiltuk/Lotome	Kasitot
12	North Pokot-Lossom-Morula-Kakomongole-Nabilatuk	Lossom
13a	North Pokot-Orolwo-Asilong-Abongai-Karita-Moruita/Kadam hills	Asilong
13b	North Pokot-Orolwo-Asilong-Kaporokocha-R.Okilim-Chepsukunya-border area/Namalu	Asilong
14	Nakuyen-Kanyerus-Greek River-Ngorna-Ngeenge-Namalu area	Kanyerus

Transhumanceroutesarebasedalongpredefinedroutesthrough which pastoral communities have long since used in search of water and pasture during the dry season. These earmarked prioritized cross border routes are ment to serve as possible conduits of investments for purposes of corridor development towards the realization of the IGAD Transhumance Protocol

Disclaimer: The designations employed and the map presentations do not imply the expressions of any opinion whatsoever on the part of the IGAD concerning the legal status of any country, territory, city area of its authorities place names, or the dimension of its frontiers of boundaries.

3.1. SOCIAL NORMS AND PRACTICES GUIDING MOBILITY AND MIGRATION

Practices around mobility are typically guided by some key norms; decisions around movement are generally made by community elders and kraal leaders who comprise the longstanding informal governance structures. A mechanism through which mobility is facilitated in the Karamoja-Turkana area is the practice of *etamam*. Literally meaning “sending the message”, *etamam* has evolved over time into a sophisticated mechanism that ensures access and use of resources by pastoralists, including in times of climate stress and conflict. Usually, a person or group sends a message to another group asking for help finding water and grazing areas or permission to graze and water their animals in the ‘host community’ area. In the group or community that receives the call for help or request, a process of information, consultation and decision-making then takes place in order to be able to respond to the request. *Etamam* is a key vehicle for the negotiated access of resources (Karamoja Development Forum, 2020).

Although the conduct of *etaman* was typically governed by community elders, today formal governance structures also have a role. When the request for mobility is generated in one area, a report is taken to the Local Council I chairpersons in the villages and the sub county chairpersons for endorsement. It is then sent to the district leadership who send out copies of the report to kraal leaders in other districts. Dialogues on negotiations are held between the requesting community and the potential host district with the participation of the district, sub county leadership and development partners. Once access is granted, the visiting group will plan to move into the area; they pick out a bull for slaughter in appreciation of the host community and as a sign of peace. The meat is then offered or shared with the host community.

“ Life Story

Nadooso Anna Nacuc, Kacheri Sub-County, Kotido

I am 35 years old. When I was born, I was fed with cow milk since my father owned livestock. We had enough for me to be treated by doctors whenever I was sick. We also farmed and had land to plant. I have three siblings, 2 boys and a sister. My father refused to take me to school, and only took the youngest boy to school. My brother, who happened to migrate with me, was misled by others when we arrived at the kraal. He went for a raid, during which he was shot in his foot. He was taken for treatment, when he got well he refused to go back to the kraal and instead went back to school where he studied and is now a councilor as we speak. My other brother became a soldier but left the army and now works in an NGO with my sister in town.



I was born here in Kacheri. I got married and moved to town, where I have now lived for about 15 to 20 years. I do business for a living, more specifically I sell local brew. The little money I get from this activity, I use to buy food for my children. I used to be a councilor but I left because I have been sidelined for arresting many thieves. I also brew local wine, the profits from which I use to educate my children: two of them are in boarding school, one in class 4, the other in class 6; the last one is in class 1.

I used to be in a kraal in a place called Nageraa. Being a woman, my duty was taking care of the calves, fetching firewood and water and washing calabashes. I would also extract butter from milk and give it to the shepherds. I also looked over the cows and reported to my father if I saw that some of them were not well and needed medication. Eventually I went back to my house where I started brewing.

We always ensured that we watered animals. The dry spell is tough – we would have no milk, no water and the shepherds are hit hard by the sun. The older people help by buying some flour for the shepherds.

In the past the political leaders would go to speak to their counter parts, to allow the shepherds and cows to go there and be hosted, and those days, they would help share what would be eaten. The members of parliament, LCIII, are those who would help speak to those people and after the dry spell we would come back home.

I will be selling wine and local brew for now. When the rains come, I will also do crop farming, but I am also afraid that the sun will dry them, like it dried them last year.

In explaining the process of receiving migrants in their area, a herder in Kaabong related the following:

During a dry season such as this, Turkana herders approach the government of Uganda through (local NGOs), local councilors and members of parliament. They organise a meeting here at the river of Loyoro (in Kaabong) where they tell us about the lack of water for animals. So they ask the inhabitants of the land to allow them in.

According to participants of a focus group¹⁹, the bureaucratisation or formalisation of the request process for herders to access grazing and watering areas for their animals, a significant break from the past where elders of communities bore sole responsibility of such decisions, was more desirable. Due to the imbalance of power between the communities in Karamoja (largely disarmed) and Turkana (where many are armed), the government's role in mediating the relationship between the various communities and its awareness of the presence of Turkana herders in its area was critical to ensuring security. Today, if pastoralists are migrating with their livestock, a movement report is presented so that there is record of mobility and the animals are not mistaken for stolen animals that are being driven away²⁰. Moreover, making the local administrations, such as the Local Council 3 (sub-county) and 5 (district), aware of the migratory path is necessary to guarantee the security and the rights of the transhumant communities. When a movement letter is granted by the local administration, it has the value of a permit. It is for example useful when the pastoralists are stopped by security forces in the areas to which they are moving²¹ (Kavuma, 2009).

Pastoralist mobility has also transformed in many other ways. Mobile phones, to which more and more herders have access, have eased

the communication process; where in the past, messages would have to be relayed solely through messengers, kraal leaders are now able to call other kraals to inquire about water and pasture conditions, insecurity-related incidents and arrange community meetings²².

Cooperation and collaboration are cornerstones in the processes of mobility in the Karamoja-Turkana borderlands. As described above, the *etamam* mechanism is one such example of a cooperative practice that is used by pastoralists to negotiate access to resources. Cooperative networks between kin and non-kin within and across borders are also essential in risk management in a non-equilibrium environment; these networks are critical sources of material and immaterial support, particularly during times of distress (Iyer, 2021). The decision to allow others to access resources in a given area is based on the evaluation of various factors such as availability, security and rule abidance. When explaining the decision of allowing Turkana herders to move into an area, a group in Kaabong recounted the following:

What we consider first is the availability of the land for them to settle on... so that we know that that camp is for the Turkana, and which one is for the Jie... this way when the government comes and wants to meet the Turkana we will already know where to find them. There are things that we consider when we want to allow those people into our land, we will see if there is too much insecurity... Another thing that we consider before uniting the Turkana and Dodoth or other tribes when they come to this river, we have to check whether they come with guns... this might disorganise other people who do not have guns since we know that Dodoth have no guns while Turkana have guns. Then we say something like that one should be removed. We look if they have thieves among them because thieves are spoilers of peaceful stays.

¹⁹ FGD with men, Kaabong, Karamoja

²⁰ FGD with men, Kaabong, Karamoja

²¹ In Uganda, administrative units are organised as (in ascending order): village, parish, sub-county, county and district. Typically, in Karamoja, there is a Local Council (LC) 1 at the village level, LC 3 at the sub-county level, and an LC 5 at the district level.

²² FGD with men, Eliye, Turkana; see also KDF magazine - *Etamam*

“ Life Story

Moru Lochiam, Male, Lorengekipi

My name is Moru Locham. I am 60 years old. I was born at Lokamusio, in Lokiriama. I was born in the year of ataa anachoke, when the cattle were dying in our land, that is when I was born. I started taking care of our livestock at a very young age. I first took care of our goats until I was big enough to take care of our camels. I continued taking care of our camels until they all died due to different circumstances. Then had nothing. I have eight children from three wives. One of them is a teacher. Some of my children are helping me take care of my cattle. The little ones take care of goats.

I am unemployed, I also do not own anything except my livestock. These are the only things I have and it is not a lot. I migrated here to Lorengekipi four years ago, coming from a place in Lokiriama called Loteree. I have stayed here this long because I do not have enough strength to keep migrating.

Another reason I settled here was because of the conflict between the Turkana and the Jie. Many of us migrated, and they are now settled in this area, in all corners. I settled here mainly because of drought. But we settle in an area where we can find other people, without entering someone's settlement. This is to avoid quarrels.

In the time I have been here I have got many friends. Even my friends from Moroto, the Matheniko, come and see me here. The other day a friend of mine from Moroto came here. His name is Lokoruule. I gave him a goat. He is asking me to come back to settle in Moroto, at places called Naput and Nakicar. We watered our animals in Nakicar, Naput and Nakiloro – and not the main dam at Kobebe.

For your information, milk can only be plenty during the rainy seasons. But during the dry season you cannot get milk. The drought really affects me because sometimes you can't even have food. You just go to care for the animals without food. If you fail to kill a wild animal during the day, you will just drink water and sleep. We feed on grains when we are lucky. And with drought, you cannot rely on drawing animal blood since the animals are weak.

Since I am ageing, I now choose to spend my energy on my children and wives. But if God asked me to choose another lifestyle, I would not choose any other. Just livestock. And also, daily bread. You cannot just think of killing an animal for meat on a daily basis. Even meat is not good to consume daily. You need to have a bit of a balanced diet. Sometimes you take chapati and some other time you try ugali. Of course, my cattle could give me all of that.

3.2. DECISIONS ON MOBILITY AND MIGRATION – DRIVERS AND FACTORS

Besides transhumant mobility, which is dictated by the available grazing and water areas and various sociopolitical arrangements, mobility is also often a response to insecurity. Insecurity exacerbates the effects of drought as access to pastures and resources is jeopardised during periods of intercommunity conflict. Conflict, which has been on the rise last year (2021), between armed pastoralists (Turkana herders remain armed in large parts, while Karamoja's pastoralists are overwhelming disarmed) is said to, often, supersede the issue of drought²³.

Decisions around mobility are driven by insecurity as one key informant from Kotido stated. In a meeting to discuss the advantages and disadvantages of migration, the risk of raids in areas of Kotido, Uganda, were identified (based on an advisory from security personnel). Participants of the meeting agreed that the only way they would consider moving is if the army were "generous" enough to provide them guns for their self-defense. In this case, the 'enemy' were not the Turkana but from other communities in Karamoja who had rejected peace: "since the Dodoth rejected peace, because they gained nothing from it, the Turkana and Jie kept on attacking them, and took away nearly all of their cows."

Insecurity also has a disproportionately negative effect on women's migration and pastoralist responsibilities. One woman recounted to us:

Insecurity is what has stopped us from going to the kraal since women and children would be killed. In the kraal we always fetched water and ensured that we did what the shepherds could not do. We always ensured that we watered animals²⁵.

Moreover, insecurity also leads to other issues such as livestock diseases, which takes hold and proliferates among immobile and concentrated livestock populations. When livestock are herded for long periods of time near homesteads or in one place, their susceptibility to disease increases. Conversely, insecurity also drives group mobility where "the need to be with others" is necessary for defence and is obligatory for those who have been disarmed. Finally, insecurity drives people to take refuge away from their villages and their homes. Isolated or sparsely populated homesteads are often abandoned during periods of high insecurity and people only return when there is a sufficient decrease in insecurity²⁷.

Decisions to migrate also depend on the reconnaissance of the area. Typically, some individuals are sent to areas that are known to have received rain – these individuals evaluate whether the pasture and water are healthy and plentiful enough to sustain animals. This information is then relayed to the others who will inform other families, who then prepare to migrate based on this information. Typically, the process described below follows: *Before migrating, we have a big meeting, also called "etem", and discuss where to migrate. It is to this group that the scouts report. When the decision to migrate is made and if the migration is out of the district, letters are written to ask for security to be provided, along with permission to migrate.*

²³ FGD with men, Amudat, Karamoja

^{24, 25, 26} KII, Kotido, Karamoja

²⁷ FGD, Amudat, Karamoja

²⁸ FGD with men, Eliye, Turkana



A woman weaving baskets from palm leaves at Eliye, Lake Turkana, Kenya.

4. GENDER DYNAMICS

Climate change has an influence on both men and women, but typically has a profound negative impact on women who are responsible for the bulk of household nutrition needs. Both men and women employ a host of coping mechanisms to deal with climate variability, with women playing a major role in livestock care and participation in alternative livelihoods to ensure the wellbeing of families.

Experiences with drought: research for this study showed, as previously documented, that the drought creates a burden on both women and men, but that there is a disproportionate effect on women. This is evident given the number

of alternative adaptation measures that are attributed to women – and the time and energy costs as compared to those undertaken by men – such as migration and foraging activities. In a focus group discussion in Loroo in Amudat, we learned that there are emerging social problems resulting from this dichotomy in tasks. Women involved in mining, for example, face problems within their families such as accusations of infidelity when they work away from home: *Do you know a place called Lokatukoi? The old women have gone there because there is nothing to eat. The old women have gone there and even have their children there now. They have even bought land there, others have even remarried there and all this is a result of hunger*²⁹.

²⁹ Men, Women FGD, Loroo, Amudat: 15th January 2022

Migration decisions: in terms of migration decisions, the data shows that men assume primary responsibility for decisions around migration. In some communities, women said they participate in the meetings where the decisions are made. However, for the majority of the communities interviewed for this study, migration decisions rest solely with men. In Loro, Amudat, for example, a woman in a focus group discussion said: *when the men decide for us, the women, we just follow. Our function is to get a panga, a cooking pot, other utensils and a skin (hide) for sleeping*³⁰. As such, women do not play a major role in scouting for pastures, and are not part of the negotiating parties for access to pastures during *etamam*.

The dominance of men in migration decision-making and actions mirrors their control and management of most livestock assets. It, therefore, follows that most men undertake livestock-based coping strategies while women innovate around home-based resilience activities.

Coping/alternative livelihoods: As discussed before, a number of alternative livelihoods or coping activities are undertaken by pastoralists, among them brewing, mining, migration, sale of arts/crafts, and various livestock-based options. This study shows that while both men and women work jointly to devise ways to adapt in the face of the worsening climatic conditions, women bear an unfair share of burden. They typically participate in hazardous and low return activities such as mining for gold or limestone, petty trade and wage labor.

In general, there is a strong level of complementarity between what men and women do to adapt to climate change, particularly drought. Differences may occur as a result of sociocultural norms and physical abilities. This complementarity was

captured by a respondent in an all-women focus group discussion in Loyoro, Kaabong: *when the man has gone to look for gold, women get a goat, take it for sale. When it is sold for around UGX 90,000, they buy some sorghum and split the rest between a sum dedicated to brew a local beer that will then be sold and money to feed their children. When the man gets gold and sells, they add something on brewing to push them to the cultivation period*³¹

This cooperation between the genders was further emphasised as a necessity for survival by a woman in a FGD: *I think we all contribute (to survival). When the man goes to look for food for the family, as a woman I also find a way to look for food. If you leave everything to a man alone, how will he manage? Won't he get tired?*³²

Participation in migration: due to the general and widespread loss of livestock and its repercussions on food security, women play an important role in ensuring the survival of their families by engaging in a variety of non-livestock-related activities that provide the family income and, consequently, sources of food. In addition, women take care of small ruminants and camels which are considered more adaptive to drought conditions and may forage at home.

As a result, most women do not migrate with the main herds, as demonstrated by the following FGD participant response: *women will stay here, but some families may decide to leave with their wives and children because they may not be able to get food if they stay. Women are the ones who look after these animals; they feed them maize, flour (children's meal), and palm fruit, which they remove the flesh from before feeding them. When there is a drought, women put in a lot of effort. Men will take the other livestock and go to a place where it has rained*³³.

³⁰ Men, Women FGD, Loro, Amudat: 15th January 2022

³¹ Women FGD, Loyoro, Kaabong: 14th January 2022

³² Men & Women FGD, Loyoro, Kaabong: 14th January 2022

³³ Women FGD, Nasekon, Eliye in Turkana: 4th January 2022

This sentiment was echoed throughout the study. By staying behind to take care of smaller herds, and boosting this with other livelihood activities, women contribute to taking care of the elderly members of the community and the children. Younger women, as wives of the migrating men or being unmarried women, may join the migration parties, contributing to livestock care and performing functions such as building kraals, preparing food, value addition to the livestock products and watering animals. In the kraals, the women sleep in their own shelter, as the men sleep at the fireplace.

Gender-based violence: experiences of gender-based violence provide an important perspective into intra-household relations. During the study, there were varying perspectives on whether climate change, in particular drought, contributes to violence in communities, or conversely, to stronger familial relationships. While both women and men said gender-based violence occurs in their homes, most of them could not attribute it to drought conditions.

Participants in the study who attributed incidents of gender-based violence to drought defined it from the perspective of scarcity of food and the inability of some women to carry the household care burden. This, they said, is especially seen in polygamous homes: *violence exists if a man has two or three women. So you will find that the man might love the one who is active in business and neglects the rest. That is where domestic violence will come from*³⁴.



Focus group discussion with Karamojong and Turkana women at Naput, Karamoja, Uganda.

What was largely challenged is the notion that an event such as drought may lead to an increase in gender-based violence. While this caused considerable debate amongst participants in the study, they agreed that gender-based violence exists in their communities irrespective of environmental or climate disaster³⁵.

³⁴ Loyoro FGD, Men & women: 15th January 2022

³⁵ Naput Women FGD: 10th January 2022

Life Story

Awesit Karenga, Female, Lorengekipi

My name is Awesit Karenga. It is a name I was given by my mother. Awesit means 'migration', and Karenga refers to a place in Karamoja, Uganda to which they migrated. I was born at Kaakorikisa near Apule in Moroto. So I was born at a time when my parents were migrating to Karenga. Mine was a family of nine but some died. There are now seven of us. I have three children.

We are talking about migration here, but as you can see now, the area is dry. If people can't get the fruits from that tree over there, people will just starve. That tree you see there is called elamach. You collect its fruits, cook them and eat them. When there was rain, people used to collect ekamongo that was used as food. Drought is brought to us by God. People cannot cause drought. I know some people say that it is humans' lifestyle that has caused the disappearance of rain but it is only God who can do those things, witches can't do it.

I am aware of [climatic] changes that are taking place. Last year, we had a lot of locusts here. The locusts destroyed all the vegetation. In my family we do not do much. At the moment I have just returned from the kraals in Kobebe in Moroto.

But we make beads, as you can see, and harvest that tree - elamach for food. I will have to sell these beads to someone so that I can get something to eat. Sometimes I also burn charcoal which will be sold. Sometimes I cut sticks which will be used for construction.

Some men are in the fields but, again, there were raids in this place and our livestock were taken. The enemies went with our livestock and the remaining ones were taken away by drought.. The livestock that remained after the raids have just been migrated to far away areas in Karamoja, to a place called Kobebe.

There is nothing that has been given to our people so that they can help themselves. We are just going our own ways. We know how to survive on our own. We call for meetings and share our food. We will make sacrifices to God so that He may bring rains.

When there is no grass, we migrate towards Pokot land. Then we call for a meeting and the cows follow us. We always confer with each other before travelling.

Even in times when there is peace at Karamoja and we are about to migrate, we call for a meeting in order to discuss our migration plan and the best grazing areas for our livestock.

Meetings are only difficult to have in times of conflict. Our people say there should be peace so that we can have meetings and talk about the sharing of grass. The Turkana had peace with the Karamojong. And now we have lost the peace. But if the men decide to have peace, we will have it. Women have no right to make any decision, they will just wait to hear from the men. Women do not start conflicts.

It is like when we migrate. The men will tell us to pack the belongings and migrate to a certain place they have chosen – then women will be doing construction work, milking livestock.

5. A NOTE ON INSECURITY AND ITS IMPACT ON COPING MECHANISMS TO DROUGHTS

While it was not a core focus of the study, the issue of insecurity came up clearly as a driving factor for some migration decisions taken by individuals and the community, on one hand, and as a factor that is interlinked with climate change and droughts, on the other. This was especially true in Karamoja where there is a resurgent armed conflict pitting different ethnic groups against each other and carrying out livestock raids. In some cases, pastoralist conflicts were said to be a result of efforts to adapt to climate change. In Loyoro, Kaabong district (Karamoja), for example, joint grazing between pastoralists from Kaabong, Kotido and Turkana often resulted in conflict, especially at the end of the dry season. In the Nakonyen livestock herding area, migrant pastoralists from Amudat noted that whilst drought is a driver of migration, it cannot be fully practiced in times of insecurity: *insecurity is very bad. Drought is better because we will keep migrating until it starts raining again. We want our livestock to go and meet with (herd with) the ones of the Karamojong*³⁶.

The likelihood of conflict is considerably increased by climate change, especially rising unpredictability in weather patterns, as well as resource competition among pastoralist groups. During times of stress (such as droughts or floods), when available resources are particularly limited, the risk of conflict is greatest. The most common type of conflict and source of insecurity is livestock raiding, which has evolved over time from a traditional practice to a commercial activity (Eaton, 2010). Commercialised raiding is understood as cattle thefts or raids which are undertaken for financial motive – as opposed to traditional

motives for restocking or marriage (IRIN, 2007).³⁷ In this case, the raiding of livestock may not follow traditional patterns for example ethnic lines.

Negotiations over resources between host communities and visitors is aimed at developing regulations to manage conflicts over grazing and water resources. As noted by a participant in a focus group in Kalokol: *we all have disagreements about water and, on occasion, about sharing the grass because there are always regulations about who should graze on which side. That is exactly what occurs. They will also decide when a certain group of cattle will be brought to drink water. We also face a big problem of livestock theft as well*³⁸.

While of perennial concern regionally, insecurity was offered as a more problematic phenomenon and a major stress, as well as a driver of ongoing migration in Karamoja (less so in the Turkana area where the study was conducted). Not only does insecurity affect the general wellbeing of people and their livestock, it also has a critical and noticeable impact on adaptation. Where in Karamoja, negotiation over access to resources can be procedural, involving institutions such as *etaman*, this was less so the case in Turkana. In a FGD in Turkana, for example, a participant in an FGD said: *we do not carry out etamam. This is only necessary if there was conflict. That may be happening in Karamoja*. In some other locations in Turkana, it was clear that even though *etamam* was not carried out in profound ways, dialogue and engagement of primary owners of resources still took place in areas such as Lorengekipi.

³⁶ Men Focus Group Discussion, 15th January 2022, Nakonyen

³⁷ In the past, livestock raids were driven by the urge to restock – for purposes of increasing herds, paying debt, and marriage. In recent times, livestock raiding is increasingly driven by financial motive. See for ex

³⁸ Men FGD date 4/01/2022, Nasekon Village, Kalokol/Eliye

Life Story

Romano Longole, Central Kotido, Karamoja

I feel climate change has affected our seasons. This dry season has come early. Usually we trust the pattern of the rains, since they have been observed over a long time. Normally, by the 10th of March rain would come, but the patterns are now confusing. The quantity of rain we receive is also now irregular: sometimes very little, other times too much – causing floods like in Lopeei, and Apule, causing the dam in Nangolol Apolon to flood. This year, the sweet potatoes that should have been planted in the months of July, August and September were not planted because it has not rained. We have decided to hold the plantation until the next rainy season.

Our people know climate change exists. They usually say, *agielakiata ngikaru*, meaning the years have changed. They acknowledge it, but are not aware of their role in it.

There have been major changes in the river beds, because they are now bare, and water is not easily drawn anymore. The wells are much deeper than they used to be in the past.

People say “climate change” is by God, they don’t understand that they have a part to play in the current climate change patterns and would rather blame it on God. They have zero contribution to it, from their own point of view.

There is little I can say that the Karamojong are doing to address climate change. All the ideas to combat climate change are developed by the NGO’s.

Migration has been happening. Mobility has always been a way of life for us since time immemorial. We have however been hit by restrictions in the last few years and we are more and more confined to our districts.

There used to be free chunks of land, but not anymore. Populations have increased and space available to pastoralists reduced. We are also hit by conflicts. For example, a week ago pastoralists were given an ultimatum to leave areas of Abim, Acholi. If the Karamojong agreed to live in peace, we’d have a lot of land within Karamojong that we can use for our animals to graze.



Overall, the field research shows that while climate change poses threats to the lives and livelihoods of people in the Karamoja-Turkana area, perhaps insecurity appears as a graver concern, particularly in Karamoja. Whereas all communities in this area have practiced transhumant migration for centuries, in search of water and pasture

for their animals, their migratory practices are threatened by the cyclical conflict that plagues the region. Any discussion and intervention on adaptation (including migration) in the context of slow-onset climate change must, therefore, account for insecurity considering the threat it poses for pastoralist migration.

Section

III

Programming for Resilience to Climate Change Effects in the Karamoja Cluster



Water tanks at Loya sub-location, Lorengkipi, Turkana County, Kenya.

This section briefly recapitulates resilience practices in the Karamoja cluster along the Karamoja-Turkana borderlands. The previous sections of this report have shown the coping or alternative livelihood activities undertaken by pastoralists themselves. Here, the focus is on what pastoralists perceive as the role of external actors, that is governmental institutions and the nongovernmental actors, in enhancing their ability to mitigate the effects of climate change, especially drought.

The UN Food and Agricultural Organization's (UN FAO) 'East Africa Resilience Strategy' (FAO, 2018) prepared by the 'Resilience Team for East Africa' outlines four core pillars to its cross-border approach. These include livelihoods, trade, population management and migration, and the management of pests and diseases. To develop a more comprehensive outlook to resilience planning and programming in the Karamoja and Turkana area, as seen from this study, and to deal with the issue of resilience more comprehensively and sustainably, we add conflict management, risk management, and information sharing and coordination to these pillars. The following discussion and analysis will be based on these pillars.

The Case for a More Holistic Approach to Resilience-Building Activities

Following disasters, in this case those related to climate change, livelihood assistance can play a significant role and provide much-needed relief to those affected. Participants in the study listed several governmental interventions deployed to support them in recovering and rebuilding their livelihoods. Government action to deal with the effects of drought were more visible or widely known in Turkana, where drought action is comparatively more institutionalised. With the Kenyan National Drought Management Authority (NDMA) and a string of county-level and national-

level policy measures, government initiatives are supported by robust institutional and policy frameworks.

In Turkana, livelihood assistance is reportedly in the form of forage and other animal feeds, food provisions to drought-affected communities, provision of water for livestock and human consumption, and of information from the NDMA.

In a number of instances, participants of this study hinted at the need for more comprehensive livelihood resilience support. They have defined these activities as holistic actions that take into consideration the several stresses during climate disasters affecting both persons and their property (livestock primarily) as well as the environment. Wherever possible, interventions to diversify livelihood options must include and be backed by community members as an effective method to increase the resilience capacity of local communities.

Many persons interviewed during the research in Turkana, especially Turkana Central, favored crop growing activities where irrigation is possible. In Karamoja, where pastoralists often also practice opportunistic agriculture – in a number of research locations pastoralists also grew crops as they kept herds – increased assistance for farming activities was deemed necessary. Many pastoralists in the area see crop growing as a complementary livelihood and not as a substitute. Opportunistic farming is a principal risk management strategy where harvests not only support household nutrition but also provide an avenue for investment in livestock assets, which is the backbone of the economy and cushions households during times of stress.

A Trade-Oriented Support and Infrastructure Development

Exchange of goods and services, especially across the borders of the Karamoja cluster, is a key

area for the transformation and development of the borderlands. A 2019 Memorandum of Understanding between the Governments of Uganda and Kenya on cross-border development aims to increase cross border trade by boosting infrastructure development. The Lamu Port-South Sudan Ethiopia Transport (LAPSSET) corridor project has been underway for several years (unclear timeline) and is expected to boost connectivity through Kenya, Sudan and Ethiopia, increasing the potential for extension of paved roads to Uganda through Kakuma and Lokirima in Turkana County. On the Ugandan side of the border, the Government of Uganda has commissioned several infrastructural development projects in Karamoja, including the building of highways and roads, particularly those that ease the extractives trade. Despite these efforts, the borderlands remain poorly and selectively connected to urban centres within their countries, and business and trade in the area can often take on an unregulated and informal nature. During this study, several participants pointed to limited infrastructure and business opportunities as a significant barrier to any efforts to cope with the impact of drought. Overall, improvement in infrastructure, especially of roads and livestock value chain investments such as roads has been stressed as being essential to increase business opportunities across these borders. Describing the importance of infrastructural development, a key informant in Kaabong, Karamoja, said: *I raised my voice to the members of parliament to lobby funds to open the road of Kalapata [Kaabong] through Nawuonitos [Turkana West]. Infrastructure is needed if you want to empower the community. This is a key factor that can drive people to improve their economic activity. I think that will also help in reducing the effects of climate change*³⁹.

Despite the central importance of livestock in the lives and livelihoods of communities in the Karamoja Cluster, the region remains poorly integrated into national livestock marketing systems and is 'conspicuously absent' (FAO, 2019b) from the vibrant business of livestock exports from the Horn of Africa. New opportunities for trade in the cluster exist in the nascent extractives sector – where oil and gas are being exploited in Turkana, and other industrial minerals in Karamoja; extraction of other rangeland resources such as gum arabic continue to be a potential for resilience in the cluster. Nonetheless, the extractives sector impedes the ability of pastoralist communities to use large swathes of rangeland as various private sector companies drive large-scale land use change, which has a significant influence on livestock health.

Increased investments in the livestock value chains is needed, with interventions increasing market access including through information-sharing, development of new markets and the establishment of improved road facilities. Furthermore, for those pastoralists supplementing their livelihood with work as artisans and small-scale miners, there remains a significant need to increase their awareness on land, royalty and labour rights, and to support them in negotiations with large private companies.

Notably, infrastructural development needs to systematically integrate the participation of pastoralists whereby any negotiation over land use or access by private sector actors needs to be discussed with communities for whom that land is key for their livestock health and, thus, their livelihood. Community consultations must go beyond paying lip service and must be led

³⁹ Kalapata KII 13th January 2022

by communities who can adequately and fully represent their needs and perspectives. Whereas every private sector project in recent years has included community consultation and approval for all projects, these consultations tend to be superficial, giving few rights to community

members. During the study, we encountered a case in which an upcoming dam project in the Nakonyen grazing area may be unwelcome to the pastoralists who are expected to benefit from it. Participants in a FGD said the following about the multimillion Euro dam:

We have heard of the dam that is going to be built here. When we were consulted, we said we do not want a dam that is as big as Kobebe here. In this location, we have enough water resources. River Omaniman gives us water all year round. If that dam is built here, it will attract many pastoralists and yet there is not enough grass here. They [government] came here but we refused. This place is small; we even have a small dam around here from where the cows drink. They wanted to enlarge it but we refused because that is rangeland where the cows graze, we don't need a dam on the rangeland it will dry up. Where they wanted to put the dam is where the cows of Achorichori and these ones meet, that is the only rangeland we have and, on this side, the Matheniko also refused and said their grass will dry up. Let them take that dam to a drier place which could make use of it.

Despite the complaints from some community members through local leaders during the consultation phases, the construction of the dam at Nakonyen is still expected to commence in 2022, with procurement already nearing completion.

Population Management and Support to Mobility

The movement of people and livestock is the perennial coping mechanism to climate change for pastoralists. In recognition of this, the IGAD Free Movement of Persons Protocol adopted in 2020 – and to be ratified in 2022 – stresses the adverse effects of climate change and environmental degradation as one of the key drivers of displacement and migration in the IGAD region and promotes the mobility of those affected.

According to Art. 16 of the Protocol, Member States shall allow the citizens of another Member State who are moving in anticipation of, during, or after a disaster to enter their territory provided that their arrival is registered in accordance with national laws. Moreover, Member States shall take measures to facilitate the extension of stay or the exercises of other rights by the citizens of other Member States who are affected by disasters in accordance with the provisions of the Protocol when the return to the state of origin is not possible or reasonable.

Mobility and migration, whether over short or long distances, has gained even greater importance as climate change takes hold in dryland areas. Any resilience intervention in the borderland area, therefore, must understand, account for and integrate mobility and migration especially as they relate to local pastoralist populations.

Despite the myriad changes to their sociopolitical and ecological circumstances, most of the participants in this study expect mobility – or transhumance in this case – to continue as a core part of their livelihoods, particularly as drought worsens. One of the objectives of the Cross-border Development Framework is to promote ‘migration, peace structures... early warning systems’ which indicates the commitment of national governments to promote cross-border migration in the case of Uganda and Kenya, in addition to internal migration. In Karamoja, several actors have noted institutional and policy bottlenecks to mobility over the last decade, not least due to the creation of multiple administrative units and a tacit government policy that seeks to limit/regulate migration of pastoralists.

Activities aiming to make migration easier and safer can support regenerative practices in grazing areas to allow for water harvesting and spring recharge. Holistic rangeland management practices must be continually and intentionally bolstered alongside support for mobility. Concurrently, more institutionalised and systematic support to informal water and land governance structures, and to the elders of the communities, would be paramount in creating resilient pastoralism. Practices such as *etamam* that provide a legitimate and accepted way of negotiated resource access must be explored in collaboration with pastoralist communities. At the same time, continually exploring ways to further security and conflict transformation in the Karamoja-Turkana borderlands is essential for any negotiated and peaceful resource use and access to continue. This security also has critical implications for mobility and the ability of pastoral groups to access resources.

In some locations in Turkana and Karamoja, some innovative practices exist to support mobility of populations and livestock. In Naput in Moroto district, an international NGO has invested in a motorised water pump. In Turkana, several locations could be seen to have these motorised or solar powered water pumps: Lorengekipi, Eliye, Naotin in Loima and Turkana Central.

Development planning along grazing and migratory corridors is ongoing in the Karamoja-Turkana borderlands. Spearheaded by IGAD and supported by GIZ and others, this planning of development along migratory routes is essential for delivering services to pastoralists along the migratory corridors. If these plans are implemented, they might make significant contributions to supporting mobility.

Management of Pests and Diseases

Management of pests and diseases is an issue of great concern to pastoralists and governments alike, especially in areas of transhumance. In the case of Kenya for example, The control of the spread of diseases is within the scope of the National Drought Management Authority, which considers livestock and human diseases as part of its concerns – even if it is not the official authority on either livestock or human diseases in the country. The NDMA considers that droughts and livestock disease cannot be addressed separately: *often, people and livestock share the few available water sources, leading to contamination and high cases of water-borne diseases, outbreak of trans-boundary livestock diseases and rangeland degradation* (NDMA, n.d.). This goes to show that to communities that are prone to drought conditions and other climate related disasters, these health problems are of significant importance. In an interview with an NDMA Official in Lodwar, Turkana, the approach of ‘One Health’ – a collaborative, multisectoral and transdisciplinary approach that works at national, regional and global levels to achieve optimal health outcomes, recognising the interconnection between people,

animals, plants and their shared environment (ILRI, n.d.) - was proposed as a comprehensive strategy to tackle livestock and human diseases.

Migration of livestock increases the risks of trans-boundary animal diseases and pests (FAO, 2019c). Consequently, planning processes in the Karamoja cluster take into account the issue of livestock diseases⁴⁰. However, the management of livestock disease remains a challenge. During the field study, several respondents pointed to the lack of adequate veterinary services as a major concern.

Furthermore, the interviewed pastoralists reported that adequate policies on pest and disease management must promote safe restocking practices. Restocking activities in the wake of drought or other disasters should ensure that livestock acquisition is made from within the same community so that diseases are not imported from other areas: *you see this disease that has just killed our animals. It was an imported disease from those very animals that come here in the names of restocking. So, when the doctors said this is a tick-borne disease, we told them which type of tick-borne disease is this? [...] as a leader I was not pleased about the restocking programme, I wasn't against the restocking itself. What I was against was buying animals from other areas, the animals coming from other areas are not used to the type of climate we have here. They are brought here and when they reach us they perish. The sellers keep the money and we bear the impacts of the loss. We have animals here, we have market days for animals, why don't the authorities buy animals that are used to our climate here and let the money also remain with the people here?*⁴¹

Conflict Management

Pastoralists in Turkana and Karamoja experience conflicts with diverse origins. Some of these conflicts are influenced by historical factors and range from conflicts related to livestock theft, farmer-herder conflicts as well as conflicts related to the nascent extractives industry. There are also conflicts between pastoralists and governmental conservation agencies emanating from restrictions on land access and use. This is the case, for example, in the Karamoja region of Uganda where more than 50% of the land is under conservation status.

One of the most serious conflict settings encountered during this study is the resurgent armed conflict between the different ethnic communities evolving in the Karamoja cross-border cluster: armed conflicts are multiplying between the Karamojong and Turkana pastoralists, the Karamojong and Pokot and even between sub-clans of the Karamojong tribe. While fought along historic conflict lines, the turns the confrontation are taking were worrying to many participants in the field study. These conflicts have taken a new dimension according to the respondents: more and more deadly weapons are used; the raids have increased and have become commercially motivated when they used to be motivated by competition and revenge-stealing between ethnic groups; cattle rustling cartels have been created; and the use of technologies such as mobile phones have increased the frequency, organisation and coordination of raids.

⁴⁰ See the GIZ/ICPALD/IGAD cross-border development planning; the Crossborder Development Framework & MOU between Kenya and Uganda

⁴¹ KII, Male, Kalapata: 13th January 2022



Pastoralist women water animals at a borehole at Lorengekipi in Turkana County, Kenya

This study finds that, as shown by other research, the impact of climate change is worsened and the outcomes are exacerbated by conflict – in the case of the border areas, due to livestock raiding. By stymying mobility, the core coping strategy, conflict makes it harder for pastoralists to produce food to deal with these changes. For instance, it was reported, in Amudat District, Uganda, that livestock deaths were taking place because it was not possible to migrate to dry season grazing areas because of the rustling of cattle that had increased recently. Moreover, In Kotido, Uganda, herders were reluctant to move their protected kraals out of fear of exposing them to insecurity.

Several resilience programmes in the Karamoja and Turkana regions have overall, integrated conflict mitigation and management in their programmes. The cross-border development memorandum of understanding, for example, presents the challenges facing the region from a conflict perspective and prescribes pathways to ensuring security in the region. A number of strategies have been undertaken before to manage conflict

in the region. These include the establishment of the peace committees, recruitment of the local protection and defence units in Uganda, as well as the implementation of disarmament exercises to rid the region of illegal weapons and border monitoring and control of the inflows of small and light weapons in the region. At the local levels, community participation in conflict management has seen the rise of some innovative strategies to deal with conflict. Among them, the Nabilatuk and Moruitit resolutions⁴² – local policies to curb theft in Karamoja ensured the participation of communities in conflict management.

Building resilience through peace-building efforts can support security goals (Mercy Corps, 2015). In the consideration of migration as a strategy, it can be concluded from this study that conflict management and peace-building are indispensable ingredients. The building of strong community-level and formal governmental institutions to deal with conflicts that emerge should be an integral part of resilience interventions in the Karamoja cluster.

⁴² The Nabilatuk and Moruitit resolution initiated in Karamoja in 2013 is a principle where a suspected thief pays 2X the number of livestock they stole plus another for the communities i.e. 2X+1. This policy was favored and detested in equal measure by communities and government actors. Its implementation was suspended by the military in 2020.

Efforts to increase community cohesion should be part of the considerations on conflict management within the cluster. The location of infrastructure such as markets, roads, and dams should have conflict management considerations in mind. Intra-ethnic social cohesion can manifest as a community-level social safety net, for example, where community members help each other out during times of stress.

Information Sharing and Coordination

While the situation in the two countries is not exactly the same, both Kenya and Uganda have fairly developed institutional capacities to deal with climate-related disasters. In Kenya, the National Drought Management Authority under the Department of Agriculture, Livestock and Fisheries is the foremost institution that deals with the problem of drought. Twenty-three out of Kenya's 47 counties are considered vulnerable to drought – as they are of arid and semi-arid nature. These counties, including Turkana, have local NDMA offices and are charged with the responsibility of drought management – under a centralised government arrangement⁴³. Nongovernmental actors in Turkana County rely on NDMA early warning bulletins and directives to support drought management. Some nongovernmental actors rely on NDMA advice regarding what interventions make sense in each specific drought situation. This makes the NDMA a pivotal institution that helps build resilience and supports coping mechanisms among pastoralists.

In Uganda, the Office of the Prime Minister has the primary responsibility to deal with the disasters in the country, including climate change-related effects.

An essential player in resilience programming and coordination in the Karamoja cluster is the IGAD. Through the Cross-Border Development Facilitation Unit (IGAD CBDFU), IGAD facilitates cross-border coordination and development by coordinating activities, harmonising policies and procedures (IGAD, n.d.). Part of this work is anchored in the 2019 Memorandum of Understanding between Uganda and Kenya and the IGAD protocol on Transhumance (2020), a blueprint through which IGAD works for 'free, safe and orderly' migration of pastoralists.

Whilst there exists an elaborate setup of state and non-state actors to coordinate and harmonise resilience activities in the Karamoja cluster, the participants in this study decried the limited sharing of information between actors, and to local pastoralist communities. For instance, the NDMA produces monthly 'early warning bulletins' but the level of dissemination is low. These bulletins, although available on the organisation's website, are hardly accessible to pastoralist communities who are both the first concerned and those best placed to offer relevant measures and means of increasing resilience to the challenges brought by climate change.

⁴³ Under the new Kenyan constitution, drought management, as security, is considered a central government function

Annex I: List of Research Locations

Amudat District, Uganda– the sub counties of Loroo and Achorichor: these locations in Amudat district are thought to be most affected by climate variability – experiencing migrations to the westerly rangelands in Nabilatuk and Nakapiripirit districts.

Moroto District, Uganda – Rupa and Lotisan sub counties: these two locations north of Moroto town are a grazing hub which host Turkana pastoralists most of the year, and in times of security, pastoralists from adjoining Kotido and Napak districts. This location faces pressure over natural resources and witnesses interactions between host communities and (transhumant) migrants.

Kotido District, Uganda – Panyangara and Kacheri sub counties: among the groups that migrate most in Karamoja. Scarcity of water and pastures means pastoralist communities travel to neighboring areas for access to resources.

Kaabong District, Uganda – Kalapata and Loyoro sub counties: lying on the eastern side of Kaabong district, these sub counties border Turkana County in Kenya and witnesses diverse interactions between different pastoralist communities.

Loima Ward, Kenya– Lorengekipi, Letea, Lokiriama: this catchment in Turkana County is an important area because pastoralists have common watering points, and is a core dispersion point for pastoralists as they migrate to Uganda.

Turkana Central, Kenya – Kalokol, Murangering, Kalokol: these lake-side villages in the ward will present us with the potential of understanding migration, climate change and alternative livelihood activities.

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