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KARAMOJA STRATEGIC RESILIENCE ASSESSMENT

Final Report

AUGUST 2016



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List of Acronyms

ABEK	Alternative Basic Education for Karamoja
ACTED	Agency for Technical Cooperation and Development
ADR	Alternative dispute resolution
AEW	Agricultural extension worker
ALC	Area land committees
BRACED	Building Resilience to Climate Extremes and Disasters
C&D	Institute for International Co-operation and Development
CAHW	Community animal health worker
CBPP	Contagious Bovine Pleuro Pneumonia
CCO	Certificates of customary ownership
CCPP	Contagious Caprine Pleuro Pneumonia
CEWARN	Conflict Early Warning and Response Mechanism
CLA	Communal land associations
CLTS	Community-led total sanitation
CSOs	Civil society organizations
DEWS	Drought Early Warning System
DLC	District land committees
DMC	District management committees
DRM	Disaster risk management
DVO	District veterinary officers
ECHO	European Commission Humanitarian Aid Office
EWS	Early warning system
FAO	Food and Agriculture Organization of the United Nations
FEWSNET	Food Security Early Warning System Network
FGD	Focus group discussion
FMD	Foot and Mouth Disease
GAM	Global Acute Malnutrition
GBV	Gender-based violence
GIZ	German Society for International Cooperation
GoU	Government of Uganda
HPI	Human Poverty Index
IUCN	International Union for the Conservation of Nature
JICA	Japan International Cooperation Agency
KIDDP	Karamoja Integrated Disarmament and Development Plan
NGO	Non-governmental organization
ODI	Overseas Development Institute
OPM	Office of the Prime Minister
PPR	Peste des Petits Ruminants
RAU	Resilience Analysis Unit
SACCOs	Savings and credit co-operative
SGBV	Sexual gender-based violence
STRESS	Strategic Resilience Assessment
ToC	Theory of change
UPE	Universal primary education
VSLAs	Village savings and loan association

WASH	Water, sanitation and hygiene
WFP	United Nations World Food Programme
WHO	World Health Organization
WMZ	Water management zone

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Executive Summary

This Strategic Resilience Assessment (STRESS) illustrates how individuals, households, communities, governments, and non-governmental actors can build resilience to shocks and stresses that threaten progress toward development goals. Mercy Corps defines resilience as the capacity of communities in complex socio-ecological systems to learn, cope, adapt, and transform in the face of shocks and stresses. Resilience is not the outcome of good development, but rather an ability that allows development to continue on positive trajectory in spite of disruption.

Undertaken between February and April 2016, this STRESS seeks to understand vulnerability and resilience in the context of Karamoja, identifying a set of capacities vital to securing Mercy Corp's vision and theory of change for building an Empowered Karamoja by 2026. Four guiding questions framed the STRESS process in Karamoja: Resilience of What? Resilience to What? Resilience for Whom? Resilience Through What? These questions frame the results of the STRESS process below.

Resilience of What?

Karamoja's main livelihood strategies and the social, ecological, and economic systems that underpin them are in transition. While the government's most recent disarmament campaign brought relative stability to a region plagued for decades by violent armed conflict, this period also witnessed a catastrophic decline in Karamoja's livestock population on which communities have traditionally depended for food, income, and collective identity. Largely out of distress, households are turning towards agriculture, natural resource extraction, urban livelihoods, and out-migration to meet basic needs. While new urban-based livelihood are bringing individuals and households closer to services like health care and education, the rush to claim land in agricultural settlement areas is doing the opposite. Enhanced peace and security, the need for agricultural and urban land, and government concessions to mining companies have contributed to rising land value and competition to claim it.

Changes in institutions and social norms have accompanied these livelihood transitions. Traditional governance systems have weakened considerably in their ability to enforce decisions. However, communities continue to rely on them in the absence of effective local state institutions, particularly for resource related disputes. The decline of livestock has led to a significantly greater workload for women and girls, but without an equivalent expansion in their decision-making power or control of key resources. For men and boys, loss of livestock and stasis in succession of authority between age-sets has meant the loss of power, wealth, and identity.

If Karamoja's economy continues to commercialize and transition into a cash economy, groups with access to assets (e.g., land, livestock) or education will be well positioned to take advantage of new opportunities. Others may shift into crop production with varying success, but a growing number will depend on wage labor, urban livelihoods, or outmigration. A Theory of Change for Karamoja must ensure—through equitable resource distribution—that the greatest number of people will fall in this first group, while guaranteeing decent and safe labor opportunities protect the remaining vulnerable groups.

Resilience to What?

These changes have altered the nature of shocks, stresses, and exposure in the region. While traditional pastoral livelihoods are well adapted to Karamoja's dry and unpredictable climate, the growing dependence on agriculture has made communities more vulnerable to rainfall variability and dry spells, which are intensifying with climate change. Both urban and rural households also experience pressures associated with price shocks, which result from poor regional harvests and market fragmentation (evinced by significant price disparities across areas of Karamoja), flood impacts on poor road infrastructure, and possible price manipulation by traders.

Concentration of populations in smaller areas, dry season burning, and coping strategies associated with firewood extraction have all contributed to ongoing land degradation, with an overall loss of grasslands and wetlands since the mid 1980s. With households now deeply reliant on income particularly from charcoal sales, the cycle has become nearly intractable. Land degradation exacerbates the impact of floods during rainy season, which spread quickly and cause significant damage to settlements, infrastructure, and crop and grazing lands. Outbreaks of communicable diseases such as cholera, malaria, typhoid, hepatitis E, yellow fever, and meningitis are most commonly during these times.

Livestock diseases and pests continue to threaten the productivity of pastoral and other-livestock based livelihoods. These issues are compounded by the absence of effective veterinary services, quarantines, and regional trade bans that devastate the livestock economy. Cattle raiding is no longer a common source of conflict in Karamoja; however, violence has shifted toward the private sphere in the form of gender-based violence (GBV) and petty theft. In addition, natural resource conflict, particularly over land, has also increased and is likely to intensify with growing competition for land, water, and minerals.

The loss of social identity among pastoralist men has been accompanied by a greater incidence of alcoholism, contributing significantly to GBV. HIV rates remain lower than in Uganda as a whole, but are rapidly rising with emergent urbanization and out-migration, low awareness among the population, and limited control of sexual health among women. As households turn increasingly to non-farm livelihoods and out-migration, this population is increasingly vulnerable to labor exploitation and human trafficking.

Resilience for Whom?

Actors face differential shocks and stresses impacts as a function of their livelihood strategies, wealth status, gender, and age. Crop producers are heavily affected by shocks associated with erratic rainfall and dry spells, which contribute significantly to food insecurity in the region. Within this group, households relocating to remote settlement areas may be particularly vulnerable to a range of shocks and stresses, including natural resource conflicts and disease. This is particularly worrisome in light of Karamoja's rising HIV rates. Wage farm laborers, more likely to be poor and/or single women, are doubly vulnerable to rainfall variability, since they depend on income earned after initial rainfall to buy inputs for their own plots. Because livestock ownership is a key determinant of household resilience during dry spells, livestock disease has devastated pastoralists both economically and socially. This continues to play a role in households shifting away from pastoralism.

Town centers in Karamoja are not well shielded from impacts of rainfall variability and dry spells, in large part because of their strong links with rural settings and dependence on farm livelihoods. Secondary impacts associated with rising food prices are also a major stress for urban residents, as are communicable disease

outbreaks occurring most frequently after flooding. HIV constitutes an emergent stress, and GBV (including rape) continues to threaten the physical and psychological safety of women in towns.

Women—particularly girls between the ages of 9 and 18 and single, abandoned, or widowed women—face the most serious impacts of shocks and stresses because of their heavy productive responsibilities. The lack of ownership or control over key resources such as land and livestock undermines their capacity to absorb or adapt, and they are more likely to adopt negative coping strategies such as reducing meals, marrying early, or dropping out of school. While migration out of Karamoja or to urban areas can be an important adaptive strategy, it also holds greater risks for women and girls, who are more likely to engage in poorly protected domestic work, transactional sex or prostitution, or become targets of traffickers. For men and boys, underlying disempowerment has contributed to alcoholism, increasing the prevalence of GBV.

Age and wealth also play a determining role in shaping patterns of vulnerability. During hunger periods, families frequently withdraw children from school and deprioritize elderly family members for meals. Households classified as poor are less able to rely on livestock assets or crop production, and thus more vulnerable to price shocks. They are more likely to engage in negative feedback loops such as firewood sale and charcoal production and become out-migrants vulnerable to exploitation and trafficking.

Resilience Through What?

A diverse set of six resilience capacities, summarized below, are required to absorb, adapt, and transform in the face of these disruptions, ensuring Karamojongs are able to achieve Mercy Corp and its partners' vision for an Empowered Karamoja by 2026. Appendix A includes a summary table of these capacities.

Capacity #1: Increased Capacity to Manage Natural Resources Equitably and Transparently

Inequitable and unsustainable natural resource management is driving a number of shocks and stresses (e.g., flooding, conflict), increasing livestock producers and farmers' vulnerability. Increasing government capacity to use information adaptively and effectively in managing resources at large scales will require engaging stakeholders beyond any single community, increasing capacity to manage existing degradation, reducing trends over time, and increasing transparency. The creation of a clear land tenure system where ownership is recognized, and can be clearly confirmed, communicated, and enforced is foundational to this capacity. Once established, a legal, community accepted, and transparent system for land tenure provides opportunities to reduce natural resource conflict and develop and enforce a mix of policies (e.g., co-management agreements between national wildlife agencies and communities) addressing risk and sustainability.

Capacity #2: Increased Access to Products and Services that Reduce Risk

There are technologies, information services, and skills which could drastically increase the capacity of communities to prepare for, manage, and recover from shocks and stresses such as rainfall variability, dry spells, livestock diseases, pests, and land degradation. However, neither local markets, nor or governments are providing them. Livestock and crop extension services can support risk reduction and management—especially by equipping herders and farmers to better utilize technology—against a range of shocks and stresses, including droughts, rainfall variability, crop and livestock diseases, and land degradation. Provision of animal health services—by reducing vulnerability to diseases and pests that have devastated livestock herd populations in recent years—is the most important capacity for building resilience of livestock

production. Ultimately, the resilience (and productivity and profitability) of livestock based livelihoods will hinge on the degree to which development policy provides a supportive framework for livestock-based livelihoods, which have been undermined by recent state policy favoring sedentarism.

Capacity #3: Increased Access to Financial Services

Reducing risk to shocks and stresses (e.g., rainfall variability, crop pests, and livestock diseases), requires innovative financial products and services, such as loans in order to invest in adaptive strategies and savings structures to allow for debt-free recovery. These mechanisms are essential to protecting market actors and decreasing perceptions of risk among potential investors. Loans allow households to buffer themselves against a range of shocks, by giving them the ability to invest and plan for the future. They can support income generating activities and small businesses that help accumulate income and assets. Meanwhile, savings can support efforts to recover from damage associated with shocks such as floods, droughts, or loss of livestock to diseases. Despite limitations, the strong presence of village savings and loan associations (VSLAs) suggests a willingness to save and borrow. A more formalized banking system, which provides equal access to standard and customizable loans and savings products, would likely be successful. These innovative new banking structures need to be gender sensitive, allowing women unprecedented access to capital and preventing greater sensitivity to shocks and stresses.

Capacity #4: Increased Access to Information and Early Warning Systems

Communities require basic strategies and information for managing risk associated with livestock disease and pests, drought-induced food insecurity, flood, and price shocks in Karamoja. The provision of timely information allows households and individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for effective response. For this reason, it is critical that women, men, boys and girls equally receive effectively targeted information, including early warning information. Communities also must perceive warnings to be reliable, understand their inherent uncertainties, and take appropriate action based on information. Warnings must accurately illustrate the probabilistic nature of forecasts and projections, and avoid overly prescriptive messaging.

Capacity #5: Improved Mechanisms for Disaster Risk Management and Response

To reduce casualties, manage resources effectively, and ensure a quick economic recovery, it is essential that communities and governments are prepared when disaster strikes. District Management Committees (DMC) must be able to mobilize in response to early warning system (EWS) triggers and execute plans for collective action to increase survival and the distribution of emergency food aid. At the district and sub-county level, DMCs can play an important role in supporting communities to utilize EWS information effectively. In response to EWS, local, regional, and/or national storage food aid needs to be made available. District and community systems should be used to coordinate international aid. Cash transfers from government and/or foreign aid systems need to target households.

Capacity #6: Increased Access to Water Management and Water, Sanitation, and Hygiene (WASH) Services

Functioning community water management mechanisms—such as linked district and watershed management systems—will be essential to increasing access to quality water, reducing the impact of rainfall variability and health disturbances. Basic water, sanitation, and hygiene (WASH) facilities and strategies are essential for reducing transmission of water and vector born diseases, particularly following heavy rains. Governance of water systems at the district and county levels needs to be accountable and transparent,

balancing the needs of various users for productive means. Such governance mechanisms will support community-scale efforts to increase: 1) utilization of sanitation in urban and rural areas through enforcement of by-laws focused on good sanitation practice, and 2) water storage technologies for use during dry periods.

Introduction

Karamoja is a region in transition socially, ecologically, and economically. While recent peace and security have brought new economic opportunities, market development, and possibilities for forging more equitable gender roles, the region remains challenged by frequent shocks and stresses from a variety of sources. The decline of highly adaptive pastoral livelihoods also challenges resilience in Karamoja.

In this context, Mercy Corps and its partners are refining their vision and theory of Change (ToC) for building an Empowered Karamoja resilient to a range of shocks and stresses, including erratic rainfall and dry spells, gender based violence (GBV), livestock disease and pests, natural resource conflict, and HIV, among others. Mercy Corps defines resilience as the capacity of communities in complex socio-ecological systems to learn, cope, adapt, and transform in the face of shocks and stresses. Resilience is not the outcome of good development, but rather an ability that allows development to continue on positive trajectory in spite of disruption. Mercy Corps and its partners used this Strategic Resilience Assessment (STRESS) to deepen their understanding of vulnerability and resilience in Karamoja and identify a set of resilience capacities. Mercy Corps and its partners in Karamoja will use these capacities as the foundation for integrated programming aimed at securing this vision and ToC for an Empowered Karamoja.

Methodology

The STRESS Process

The Strategic Resilience Assessment (STRESS) is a process which enables our teams and partners to analyze and learn from their contexts at multiple scales and proactively develop measurable, longer term resilience strategies. Mercy Corps' STRESS methodology explores four key questions:

- **Resilience of What:** Understanding key provisioning systems and institutions
- **Resilience to What:** Key shocks and stresses that affect the ability of households and individuals to achieve greater well-being
- **Resilience for Whom:** Populations and groups most affected by shocks and stresses
- **Resilience Through What:** Absorptive, adaptive, and transformative capacities of individuals, households, and communities to effectively manage the risks within their socio-ecological system

Mercy Corps conducts STRESS in four phases, including:

- **Scope:** The Scope Phase aims to develop a deep understanding of the context by answering the four guiding questions above. Teams define the rationale and scale of their process, then set the key research questions, define research methods, and develop a management plan for the following phases.

- **Inform:** Using a mixed-methods approach, the Inform Phase aims to collect sufficient quantitative and qualitative information from different scales and perspectives to allow the team to answer the key questions laid out in the Scope Phase. While the Inform and Analyze are presented here as distinct phases, in practice they are likely to happen simultaneously in iterative cycles of information collection and analysis.
- **Analyze:** Teams then analyze information and data collected during the Inform Phase to answer the key research questions defined in the Scope Phase.
- **Strategize:** The Strategize Phase aims to use the identified list of resilience capacities to develop a measurable and context-specific theory of change for resilience, which will serve as the foundation for program design and the associated measurement plan.



Figure 1: The Four Phases of the STRESS Process

The Karamoja STRESS

Mercy Corps and its partners conducted the Karamoja STRESS between February and April of 2016. Figure 2 illustrates the steps described below.

- **Systems mapping:** Beginning with a Scoping Workshop, participants from Mercy Corps Uganda and partner organizations developed a systems map for achieving development outcomes, identified key shocks and stresses through hazard mapping, and developed an initial assessment of key resilience capacities and constraints. Participants also created research questions and assessment tools.
- **Secondary Research, Key Informant and Expert Interviews, and Community Data Collection:** Researchers then conducted a literature review to assess existing background on the research questions. Expert interviews followed, allowing researchers to gather additional data and information, often exploring questions unanswered through the secondary literature review. Focus groups with men, women, youth boys and girls in Nyakwae (Abim), Kotido Town (Kotido), and Sidok Town (Kaabong) between February and March 2016 allowed the team to contextualize findings, understand community perceptions, and fill knowledge gaps.
- **Analysis Workshop:** A final Strategize Workshop in April 2016 convened Mercy Corps Uganda staff and partners to review findings and refine key resilience pathways designed to respond to specific shocks and stresses. These pathways were further developed and laid onto the ToC for Karamoja, using findings from the STRESS process.



Figure 2: The STRESS Process in Karamoja

Disruption in Karamoja's System: A Historical Perspective

Recent shifts to Karamoja's economic, ecological, and social systems are best described in the context of their lynchpin: livestock-based livelihoods. Though most of the Karamoja sub-region is historically agro-pastoral, livestock has been central to meeting basic needs through meat, milk, blood, and barter trade in a climate characterized by highly variable rainfall. Being mobile, livestock-based livelihoods were well adapted to the erratic precipitation patterns, long dry seasons, and local ecology, with pastoralists migrating with their herds based on availability of pasture during wet and dry seasons. Social systems and governance structures likewise revolved around livestock management, with councils of manyatta (i.e., small, pastoral settlements) elders overseeing seasonal movements of herds, as well as water and rangeland use.¹

The decline of the livestock population and associated threats to pastoralism, linked to a number of related causal factors, have challenged these traditional structures and altered the systems on which they depend. Restrictions on livestock grazing areas emerged in the 1960s with the demarcation of national boundaries and protected areas for wildlife. Violent cattle raiding practices, within and across national borders, escalated alongside the sudden availability of arms in the late 1970s. In 2001, the Government of Uganda (GoU) initiated a series of disarmament campaigns, culminating in the Karamoja Integrated Disarmament and Development Plan (KIDDP) from 2006. Under the KIDDP period, an estimated 70% of livestock (from 6 million to 1.8 million) were lost primarily to livestock epidemics spread through government sponsored protected kraals, reduced livestock reproductive rates due to poor nutrition, distress sales, insecurity, and loss of mobility for grazing.²³⁴

Since roughly 2010, disarmament and peace talks have quelled violence. Some communities have moved back to former homesteads or cropping areas, and herders are increasingly withdrawing livestock from protected kraals. Yet peace has also brought new restrictions on livestock movement, as stability encourages land grabs, mining, and expansion of agricultural activities. The Karamoja Action Plan for Food Security under the Ministry of Karamoja Affairs marked a push by the central government to discourage pastoralism and promote a shift to sedentary, agricultural livelihoods.⁵ These shifts have weakened traditional structures and introduced new or hybrid governance systems, altered patterns of natural resource usage, and challenged rigid gender norms. With markets are opening, Karamoja is increasingly exposed to the outside world, particularly through migration and trade. In resilience terminology, Karamoja's system has undergone a regime transition on the adaptive cycle from an earlier period of conservation to one of release and reorganization.⁶

¹ Nalule, A. (2010). Social management of rangelands and settlement in Karamoja. Rome: Food and Agriculture Organization (FAO).

² Burns et al. (2013). GHG baseline.

³ Stites, E. (2009). FAO/GIEWS.

⁴ Ahmed, S. (2014). Livestock and market assessment mission to Karamoja region. Rome: FAO.

⁵ Levine, S. (2010). What to do about Karamoja? Rome: Food and Agriculture Organization.

⁶ Gunderson, L., & Holling, C.S. (2001). Panarchy: Understanding transformations in human and natural systems. Washington, DC: Island Press.

Karamoja Today: Provisioning Systems for Well-Being

Livelihoods

Karamoja communities have diversified their livelihoods strategies in the period since disarmament, though the region continues to be characterized by agro-pastoralism. As described by Bushby and Stites (2016), “the category of agro-pastoralism in the Karamoja context comprises a continuum ranging from households that have primarily shifted to agrarian livelihoods but still retain a limited livestock herd, to those who have primarily maintained pastoral livelihoods but complement these in times of idiosyncratic or covariate shocks with crop production.”⁷ Along with the loss of livestock, central government policy to promote sedentary agricultural livelihoods in Karamoja has played a key role in this shift, despite evidence that pastoralism is the more resilient and profitable strategy for the region.⁸

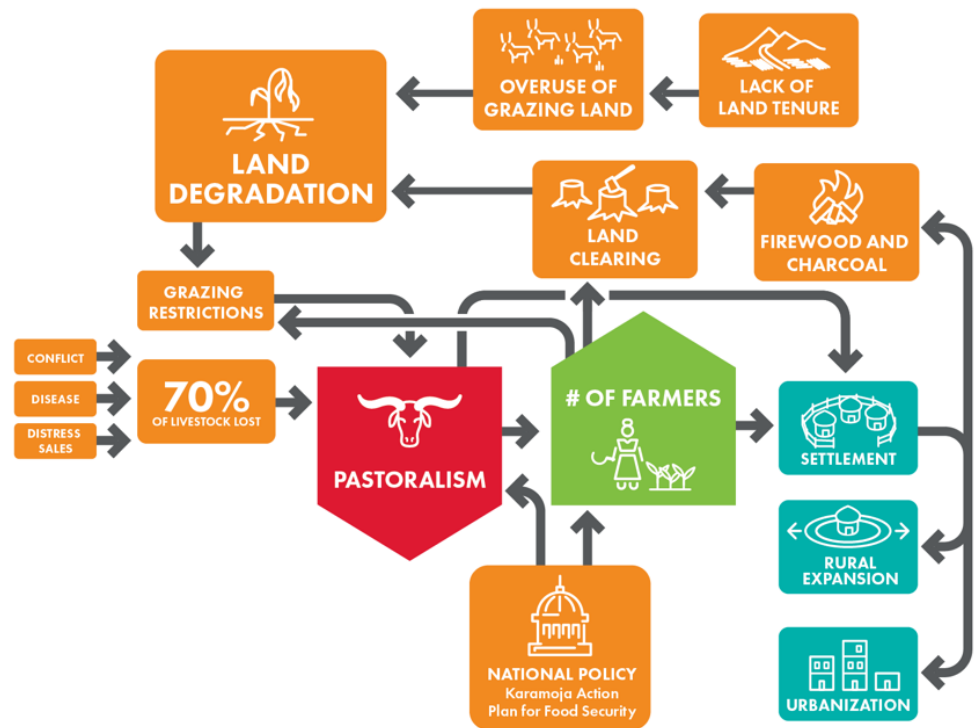


Figure 3: The Decline in Livestock
Factors leading to a decline in pastoralism, and the subsequent impacts and feedback loops associated with this decline

As illustrated in Figure 4 (following page), a 2014 United Nations Food and Agriculture Organization (FAO) analysis identified five primary livelihood zones in Karamoja. In all zones, households relied on their own crops, milk, meat, and food purchase to meet food needs. Yet the diversity between these zones underlines the challenge of generalizing Karamoja’s economic systems.

According to population projections from 2013, 60% of Karamoja’s population resides in the Central Sorghum and Livestock Zone, which spans all of Karamoja’s districts except Amudat.⁹ Livestock provides milk for household consumption and is the main source of household income although households also

⁷ Little, P., Abebe, D. Bushby, K., Mahmoud, H., & Stites, E. (2016). Resilience and risk in pastoralist areas: recent trends in diversified and alternative livelihoods. Washington, DC: USAID.

⁸ Levine, S. (2010). What to do about Karamoja? Rome: FAO

⁹ Uganda Bureau of Statistics 2013, as cited in FAO (2014). Though these population projections are commonly cited in research on Karamoja, they must be taken with some caution, since the subsequent 2014 Census shows a much lower total population figure for Karamoja than what was projected in 2013 (approximately 988,000 versus 1.3 million respectively). Although the more recent census projection provides figures for population by district, it does not break this down further by livelihoods zones for Karamoja. Further sections of this report further to population figures derived from the 2014 Census.

make use of any available crop yields.¹⁰ The Central Sorghum and Livestock Zone corresponds roughly with the area of Karamoja that experienced the most severe levels of food insecurity between 2010 and 2015.¹¹ Agriculture dominates in the Western Mixed Crop Farming Zone or “Green Belt.” Representing 20% of the region’s population, this is the only zone in Karamoja that can meet most of its consumption needs through crop production in a good year. In all zones, agricultural is almost entirely rainfed, with limited instances of small-scale irrigation.

With cash earnings meeting a significant portion of food needs, households engage in a variety of income-generating activities as illustrated in Figure 6. Among these, self-employment constitutes the most significant activity, making up “over 60% of annual cash income for very poor households” in the Central Sorghum and Livestock Zone, and over 50% for poor households in the Western Mixed Cropping Zone.¹² Activities include firewood collection, charcoal production and sales, grass sales, brick making, and brewing for better off households. Households also engage in wage labor primarily on farms, though increasingly in towns and through petty trade. Other activities include stone quarrying, mining, and off-farm informal labor in urban centers.¹³ As described further below, the role of migration and remittances likely is becoming increasingly important in supporting both urban and rural livelihoods for Karamoja.

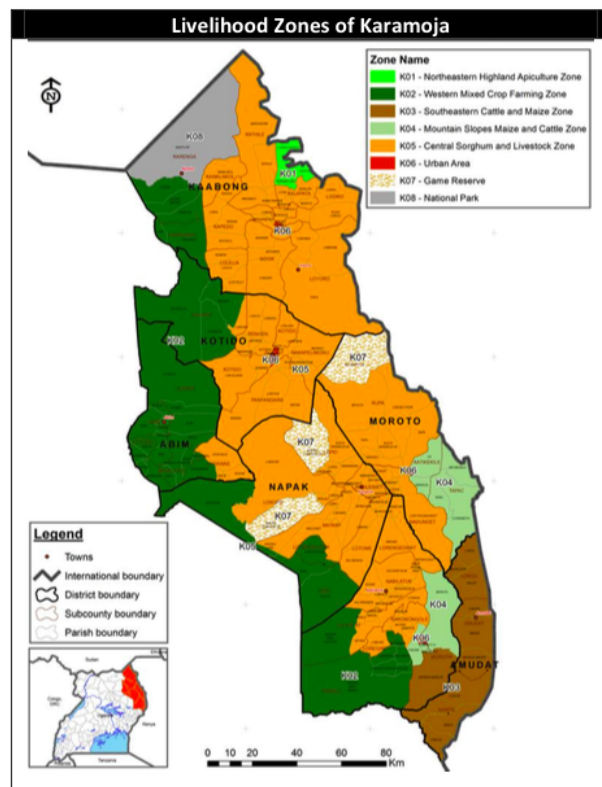


Figure 4: Livelihood Zones of Karamoja
Source: FAO (2014)

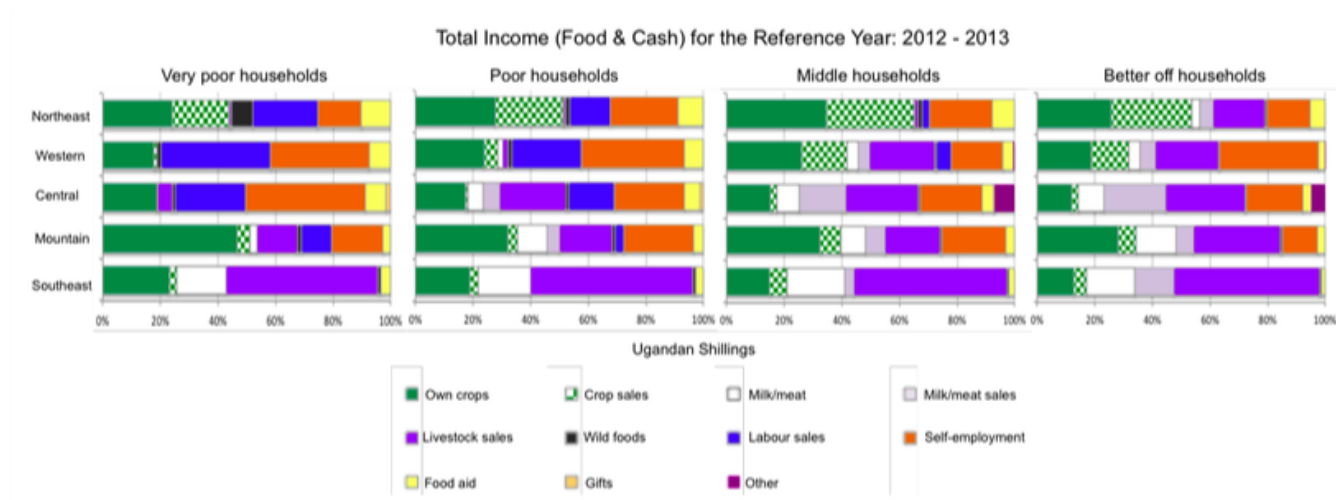


Figure 5: Total Income (Food & Cash) for Reference Year 2012-13

¹⁰ FAO. (2014). Household economy assessment baseline report overview. Rome: FAO.

¹¹ Resilience Analysis Unit. (2015). Resilience context assessment: Resilience to food insecurity and malnutrition in Karamoja.

¹² FAO. (2014). Household economy assessment baseline report overview. Rome: FAO.; Resilience Analysis Unit. (2015). Resilience context assessment: Resilience to food insecurity and malnutrition in Karamoja.

¹³ FAO. (2014). Household economy assessment baseline report overview. Rome: FAO.; Resilience Analysis Unit. (2015). Resilience context assessment: Resilience to food insecurity and malnutrition in Karamoja.

Markets

Market access has expanded in Karamoja as a result of improved security.¹⁴ Men dominate the sale of livestock, while women sell poultry and food crops. Most markets are driven by market days, occurring weekly, with market day trading lasting only for several hours in the morning. Unlike the larger markets—in towns like Moroto, Kotido, Abim, and Kaabong that trade in a wide range of products—village markets are more limited.¹⁵ Lack of surplus food production in Karamoja makes the region dependent on external food markets. This imposes challenges related to transportation, particularly during rainy season, contributing to price fluctuations.¹⁶ Live animal trade is the largest trade in the sub-region by far. The vibrancy of livestock markets varies by season. Sales are conducted by owners, intermediaries who sell at a commission, or middle men seeking profit. As a result, pastoralists frequently receive only a small percentage of the actual retail price.¹⁷

Despite opportunities given regional demand, livestock value chain development in Karamoja just beginning, with herd accumulation rather than sales being the primary strategy for most pastoralists, particularly as they recover from losses endured during the disarmament period. Current shortcomings in facilities, infrastructure, and regulation present major systemic constraints.^{18,19} Slaughter facilities and value-addition enterprises (e.g., fattening, meat butchering, canning, tanning) are largely inadequate for all but local consumption, and there is no cold-chain for exporting carcasses outside of the region. Linkages to external value-addition enterprises are weak, due to the same factors that hamper all private business in the region: security concerns, poor infrastructure, and negative business/private sector perception of doing business in Karamoja. As a consequence, a large proportion of the potential value of livestock (i.e., hides, bone meal, and blood) is captured only at the end market.²⁰

Financial Services

Small-scale savings activities are common and well established within Karamoja. Based on a survey in 2014, Mercy Corps Financial Access team estimates that at least 1,100 Village Savings and Loan Associations (VSLAs) are in operation in Northern Karamoja (i.e., Abim, Kaabong, and Kotido) alone.²¹ VSLAs tend to self-organize on the basis of identity, age, wealth, or gender with a single village often having many VSLAs.

VSLAs have a number of shortcomings in serving their clients. Lending rates are generally high, normally around 10% per month. Members are required to borrow as well as save, leading to instances of unproductive borrowing or problems with repayment. Loans moreover cannot exceed the amount of money

¹⁴ FIC and Mercy Corps (2015) as cited in Little, P., Abebe, D. Bushby, K., Mahmoud, H., & Stites, E. (2016). Resilience and risk in pastoralist areas: recent trends in diversified and alternative livelihoods. Washington, DC: USAID.

¹⁵ Ezaga, O.P. (2010). Markets for livestock and food crops in Karamoja subregion. New York: UNFAO.

¹⁶ Ezaga, O.P. (2010). Markets for livestock and food crops in Karamoja subregion. New York: UNFAO. Key informants: Kotido Cereal Wholesalers

¹⁷ Levine, S. (2010). What to do about Karamoja? Rome: FAO.

¹⁸ USAID 2016: Assessment of Livestock Product Value Chains and End Markets Accessible to Livestock Keepers in Karamoja

¹⁹ Mercy Corps. (2011). Cattle raiding in Karamoja: A conflict and market assessment. Portland, OR: Mercy Corps.

²⁰ Vaughan, J., Stewart, T. (2011). Cattle raiding in Karamoja: A conflict market assessment. Portland, OR: Mercy Corps.

²¹ MC Financial services report

saved by the individual borrower. Finally, members are not allowed to access their own savings except at the end of the cycle, during the share-out around the Christmas holiday.²²

Savings and credit co-operatives (SACCOs) are emerging in Karamoja, but are still limited. Currently less than 2% of VSLA assets are held in banks and SACCOs.²³ A number of banks are present in Karamoja, but serve almost exclusively the government and non-government organization (NGO) payroll. Their structures and interest rates prevent locals from approaching them for credit.²⁴

TANGO (2015) found that 17% of households out of a sample of 551 had taken out a loan in the last 12 months. The main sources of loans are VSLAs accounting for 51% of loans, followed by SACCOs, and friends/neighbors. Moneylenders, micro-credit groups, and formal banks appear to have relatively low coverage. While male-headed households were more likely to have taken a loan, female-headed households were significantly more likely to have taken a loan from a VSLA (73%).²⁵

Ecological Systems

Karamoja's climate is characterized by a high degree of rainfall variability and long dry seasons, with short periods of intense rainfall. It experiences a mono-modal rainfall with one planting season extending from April to September and dry season from November to March. Rain falls intensely over just a few hours each day, leading to flooding during the rainy season. Maximum temperatures range from 28-32 degrees C.²⁶ Karamoja's landscape is characterized by savannah vegetation with seasonal grasses, thorny plants, and small trees, though as described below it has suffered considerable degradation of land and forestry.

Karamoja is endowed with gold, which locals have mined traditionally on an artisanal scale, often during times of stress. A survey released in 2011 from the Uganda Department of Geological Survey found that the region's mineral deposits also include limestone, uranium, marble, graphite, gypsum, iron, wolfram, nickel copper, copper, cobalt, lithium, and tin.²⁷ Thousands of Karamojong are engaging in unlicensed artisanal and small-scale mining. Artisanal mining uses crude, manual and hazardous methods, which expose land to

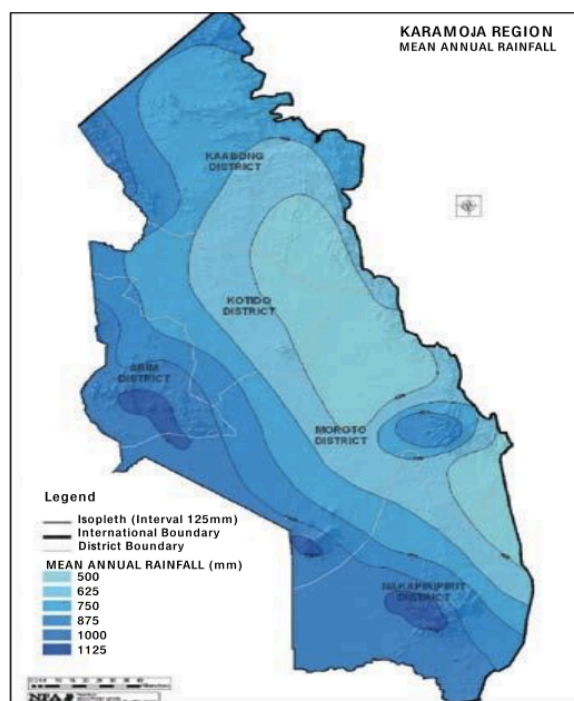


Figure 6: Karamoja Rainfall Belts

Source: KALIP Technical Reference Guide (2009)

²² Geller. (2014) FS study. Portland, OR: Mercy Corps.

²³ Mercy Corps. (2014) Financial service brief. Portland, OR: Mercy Corps.

²⁴ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.

²⁵ TANGO. (2015).

²⁶ Mercy Corps. (2014). BRACED VCA: Vulnerabilities and capacities assessment in Karamoja and Wajir. Portland, OR: Mercy Corps.

²⁷ Human Rights Watch. (2014). How can we survive here? The impact of mining on human rights in Karamoja, Uganda. New York: Human Rights Watch.

degradation.²⁸ This industry relies on gender inequalities for labor, with a high rate of female participation (45-70%) and “pervasive gender inequalities in terms of benefit and risk sharing.”²⁹ The discovery of minerals has also helped fuel land speculation and the issuance of concessions by government to mining companies in the region, as described in following sections. While mining is still a relatively small sector in Karamoja, it may become a more important source of employment, as well as conflict, in the future.

The greater part of Karamoja falls under the Kyoga Water Management Zone (WMZ), one of four WMZs delineated by Uganda’s National Water Policy.³⁰ Rivers and streams are mostly seasonal, and rainfall runs off rapidly toward Teso, Lango, and Acholi.³¹ Groundwater from boreholes is the primary source of household and drinking water. Comprehensive assessments of Karamoja’s groundwater resources are unavailable, yet some have inferred from the degradation of catchment zones and high run-off rates that groundwater recharge is being threatened.³²

Valley tanks and dams have been constructed to capture and store water during the rainy season. These are located at a distance from settlements, primarily serving for watering herds, although the government is promoting their use for other purposes.³³ Storage structures that capture runoff are however vulnerable to sedimentation and destruction by floods. As noted above, the vast majority of agriculture in Karamoja is rain-fed, with a number of small-scale irrigation schemes supported by donors.³⁴

Social Services Provision

Over 80% of Karamoja’s population lives below the poverty line, and the region lags behind the rest of the country on all socioeconomic indicators.³⁵ The Human Poverty Index (HPI) in Karamoja is above 53%, compared to the 28.8% national average, and literacy levels are as low as 12%.³⁶ Northern Karamoja suffers an infant mortality rate of 90 per 1,000, compared with 54 in Uganda as a whole, and the region had a maternal mortality double that of the national average in 2010.^{37,38} Troublingly, Global Acute Malnutrition (GAM) rates have been on an increasing since the end of 2011.³⁹ Health and education services have yet to reach many parts of Karamoja, especially those that are underserved by roads. See Annex 1 for additional development figures.

Education in Karamoja is based on the Alternative Basic Education for Karamoja (ABEK) curriculum, established in 1998 by the Government of Uganda (GoU) with support from Save the Children. In spite of formal education being free in Karamoja under the universal primary education (UPE) program, literacy has remained low, linked to low rates of enrollment, attendance, and retention. Generally, enrollment and attendance of children is strongly influenced by food availability. During food harvest periods, more children enroll and attend school, while during off-harvest seasons, enrollment and retention is low. Attendance also

²⁸ Ecological Christian Organization. (2016). Stopping child exploitation through education & livelihood. Kampala: ECO.

²⁹ Ecological Christian Organization. (2016). Stopping child exploitation through education & livelihood. Kampala: ECO.

³⁰ GIZ. (2015). Inception report: Integrated water resource management in Karamoja. GIZ.

³¹ (2016). Aisu and Udon: Natural resource management background paper.

³² Key informant: GIZ. There are plans to groundwater assessments for Karamoja through sub-catchment management planning process under Ministry of Water and Environment in partnership with GIZ and FAO.

³³ Key Informant: Directorate of Water

³⁴ Avery. (2014).

³⁵ UNDP. (2007). Human development report Uganda. UNDP.

³⁶ As reported by the Uganda Bureau of Statistics.

³⁷ USAID. (2014). Baseline study for Title II development food programs in Uganda. Washington, DC: USAID.

³⁸ WHO Karamoja Estimate. UDHS 2011, UBOS and ICF Macro, as cited in McLoughlin (2016).

³⁹ FSNA 2012–2014, ACF- UNICEF surveillance system, cited in RAU (2015).

drops during the cropping season, as most children remain at home to help parents prepare land. After harvesting, families normally sell a portion of produce to cover school expenses.

There is also a high dropout rate, especially for girls, linked to early marriage and pregnancy. As a result, men in Karamoja have a higher literacy rate than women.⁴⁰ Young boys (7-12-years-old) are considered old enough to be shepherds, and are often ordered to stay out of school to take care of livestock. According to Save the Children, enrollment in the ABEK has been increasing as families continue to lose livestock, enabling boys to attend school. As a result of efforts, literacy has increased from 11% (2010) to 13% (2015)⁴¹. As a result of illiteracy, both women and men in Karamoja generally face limited employment opportunities and are considered uncompetitive in the country's workforce.

Access to health care in Karamoja has improved following reforms in the health care in Uganda with rapid growth in availability of health services, infrastructure, and human resources. In 2007, Village Health Teams were introduced in Karamoja, providing health education, facility referrals, and provision of basic medicines. However, critical gaps remain. The public health system is severely constrained by underfunding, poor governance, stock-outs of pharmaceuticals, and lack of human resources (with only 30-60% of positions filled).⁴² Upon arriving at facilities, often at great distance by foot, patients frequently find that neither medical staff nor drug supplies are available.

Water, hygiene and sanitation (WASH) facilities and knowledge of positive health behaviors are extremely poor. Currently, only 13% of households in Northern Karamoja have access to improved sanitation, and 37% have access to an improved drinking water source.⁴³ Open defecation is widespread.⁴⁴ Water sources such as boreholes, tanks and dams are available but frequently in disrepair or overcrowded. Some boreholes are seasonal, with reports of depletion during the dry season. As described by Burns et al. (2013), "In some villages participants mentioned traveling well over an hour to fetch water, as the waiting time at a closer borehole was often longer than the combined travel and waiting time at the distant borehole. Some villages might have access to three boreholes but typically one might be broken and another only produces salty water." Preliminary analysis from WHAVE suggests that one borehole serves an average of 90 individuals in Northern Karamoja, although with significant variation. Functionality rates of facilities range from 41% in Kaabong Town to 67% in Kaabong West, although analysis was still ongoing at the time of writing.⁴⁵

In some instances, households access drinking water from open sources like dams and ponds, a strategy associated with contraction of waterborne disease. TANGO (2015) found that 12% of surveyed households used ponds as their primary water source. In all districts except Abim, average water consumption falls below levels considered to be healthy.⁴⁶

District	Household Sanitation Coverage	Hand Washing Coverage
Abim	56.6%	38%

⁴⁰ Key Informant: Department of Education, Moroto

⁴¹ Key informant, Save the Children. It is unknown whether the increase in literacy is

⁴² Health Facility Assessment, GHG; as cited in McLoughlin 2016

⁴³ USAID. (2014). Baseline study for Title II development food programs in Uganda. (Pg. 31). Washington, DC: USAID.,

⁴⁴ FFP Karamoja Baseline reflective of Northern Karamoja, as cited in McLoughlin 2016

⁴⁵ Key Informant: WHAVE. The key informant noted that 90 may be an overestimated, since households were likely to exaggerate numbers in order to encourage repairs.

⁴⁶ Resilience Analysis Unit. (2015). Resilience context assessment: Resilience to food insecurity and malnutrition in Karamoja.

Amudat	10.3%	3.1%
Kaabong	19.1%	17.9%
Kotido	25.1%	18%
Moroto	2.2%	0.1%
Napak	13.1%	5.4%
Nakapiritpirit	22.3%	10%

Table 1: Sanitation and Hand Washing Facilities Coverage by District

Source: Uganda Water and Environment Sector Performance Report (2015)

As evidenced by Table 1, fewer than 30% of households have access to sanitation and hand washing facilities in all districts except Abim. Less than 15% have access in Moroto, Napak, and Amudat. Poor health, nutrition practices, and knowledge are major drivers of food insecurity in the region. The 2015, the Integrated Food Security Phase Classification Analysis for Karamoja found that poor utilization, defined as “poor sanitation, poor childcare practices (i.e., low feeding frequency for children, poor dietary diversity, and poor food preparation methods),” contributes more to food insecurity than access or availability.⁴⁷

⁴⁷ Uganda IPC Technical Working Group. (2015). Report of the integrated food security phase classification analysis for Karamoja. (Pg. 12). Integrated Food Security Classification.

Institutions and Actors

Formal and Informal Governance Structures

Karamoja has a long history of informal traditional governance, and a traditional system of social security and kinship bonded by family-blood and marriage. Communities are organized into clans, territorial groups, and age-sets that control resources at different scales. Governance is centered around a council of elders—consisting of 20 to 30 (male) members who steer planning and operations of communities—responsible for making decisions regarding livestock migratory routes, the order of herd movement when migrating to new locations, stocking rates, grazing periods, and occasionally cattle rustling.⁴⁸ Though the council of elders was the highest recognized governing body among clans in Karamojong cultures, groups of clans of elders would meet yearly. These occasions were largely ceremonial, but outcomes of discussions would have both social and political implications, particularly for rangeland management.^{49,50}

Informal institutions continue to play an important role in conflict resolution, especially when formal institutions are either absent, ineffective, or under resourced. They also provide forecasts and instructions to prepare for or prevent unfavorable climatic events. Younger (male) clan members are responsible for implementing and enforcing the decisions of elders. Authority is transferred down through the age-sets, although this process was frozen during disarmament, leaving a generation of men without access to power.⁵¹

Nevertheless, the increasing importance of state authority has led to the erosion of these traditional institutions—struggling to respond to emerging development dynamics—which have conceded much of their effective authority to structures such as courts and police, or in some cases have created hybrid institutions.⁵² The loss of power of the councils of elders has been attributed to the decline of livestock and pastoral livelihoods; internal conflicts and rising crime; in and out-migration (resulting in changing worldviews among the population); failures of succession between the age-groups; reduced control over youth (as a result of loss of livestock); and of state interference in traditional governance systems.⁵³ This has eroded the ability of traditional structures to enforce decisions, for instance around rangeland management, early warning systems and migration.⁵⁴

Yet the community's lack of familiarity with and trust in formal structures means they nevertheless continue to rely heavily on informal ones.⁵⁵ Traditional institutions are often perceived to be more legitimate and compatible with local values, and preferred because of their emphasis on consensus, reconciliation and restorative justice, even though these institutions may be less able to enforce decisions than in the past.⁵⁶

⁴⁸ Nalule, A.S. (2010). Social management of rangelands and settlements in Karamoja. Kampala: FAO.

⁴⁹ Nalule, A.S. (2010). Social management of rangelands and settlements in Karamoja. Kampala: FAO.

⁵⁰ Carlson, K., Proctor, K., Stites, E., & Akabwai, D. (2012). Tradition in transition: Customary authority in Karamoja, Uganda. Somerville, MA: Feinstein International Center.

⁵¹ Burns et al. (2013).

⁵² Carlson, K., Proctor, K., Stites, E., & Akabwai, D. (2012). Tradition in transition: Customary authority in Karamoja, Uganda. Somerville, MA: Feinstein International Center.

⁵³ Carlson, K., Proctor, K., Stites, E., & Akabwai, D. (2012). Tradition in transition: Customary authority in Karamoja, Uganda. Somerville, MA: Feinstein International Center.

⁵⁴ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps. RAU. (2015).

⁵⁵ Key informant: Mercy Corps Governance Team

⁵⁶ Carlson, K., Proctor, K., Stites, E., & Akabwai, D. (2012). Tradition in transition: Customary authority in Karamoja, Uganda. Somerville, MA: Feinstein International Center.

In the recent past, the Ministry for Karamoja Affairs, under the Office of the Prime Minister (OPM), has played the primary role in defining development policy through the Karamoja Integrated Disarmament Development Plan (2010-2015). District level authorities depend on allocations primarily from central government, which for instance in 2016 accounted for 96% of the budget.⁵⁷ The central government also controls allocation, access, and use of natural resources in Karamoja, and holds revenue generated from resource extraction activities, little of which is allocated to local governments. In this way, key decisions in Karamoja (e.g., policies favoring crop production over pastoral livelihoods) “originate from the central government and are not easily influenced by local groups.”⁵⁸ The proliferation of NGOs and aid actors who may or may not coordinate effectively with local government further weakens their position.⁵⁹

Gender Norms and the Role of Women

In Karamoja, gender norms treating women as property continue to structure economic activities and traditional governance mechanisms in ways that are, at times, recreated by state institutions. These norms play an important role in constraining access to critical resources and authority at household, community, and higher governance scales. Historically, women have an exchange and barter value linked to livestock, for which they are traded through marriage. Livestock belongs to men; women have no decision-making over the resource, although they can access milk with men’s permission. Even today, Howe et al (2015) found that, “In all villages men reported that their wives—whether involved in courtships, unofficially married and officially marriage—are the property of the husbands.”⁶⁰ In recent years, women have in some instances gained control over lower value livestock, such as poultry and small ruminants.⁶¹

Beyond cattle herding, which is the domain of men, women are the primary laborers for agriculture and off-farm livelihoods. Their work therefore includes all farm work and gardening, water and firewood collection, food gathering, and in some cases brewing, in addition to all child care and reproductive responsibilities. The post disarmament period has witnessed the increased participation of women in productive activities, due primarily to the reduced role of men in livelihood activities as a result of livestock population decline. In many cases, women function as sole breadwinners, but they nevertheless have limited access to the income generated from these activities. As described in later sections, these dynamics have contributed to considerably workload burden and time poverty among women and girls, as well as alarming levels of gender-based violence (GBV).

Traditional institutions do not encourage participation by women, who play a small role in customary governance outside of their households.⁶² The council of elders remains male dominated, such that decisions generally favor male interests. Women’s influence in the formal state sphere is also limited, in spite of measures such as 30% reserved seating for elected officials, a women’s council and gender focal points at local levels. Women representatives are disadvantaged and excluded as a result of meeting schedules, low levels of education and ability to engage in English, lack of confidence in public and male-dominated settings, and reluctance of male colleagues to support joint-leadership⁶³

⁵⁷ Oxfam 2012, as cited in Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps., Key informant: WFP

⁵⁸ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.

⁵⁹ Key informant: WFP

⁶⁰ Howe, K., Stites, E., & Akabwai, D. (2015). We now have relative peace; Changing conflict dynamics in Northern Karamoja, Uganda. (Pg. 12). Somerville, MA: Feinstein International Center.

⁶¹ Wealth and warriors.

⁶² Carlson, K., Proctor, K., Stites, E., & Akabwai, D. (2012). Tradition in transition: Customary authority in Karamoja, Uganda. Somerville, MA: Feinstein International Center.

⁶³ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.

Conflict Resolution Mechanisms

Dynamics between traditional and state governance systems, different levels of state government, and gender norms are evident in the structure of conflict resolutions mechanisms. Peace committees operate at the district and village level, and were originally designed to facilitate engagement between communities to combat cattle raids. Since disarmament, cattle raids have significantly reduced, and now their primary role is in resolving other forms of both inter and intra-community conflict, including land disputes and petty crimes.⁶⁴

In principle, village peace committees coordinate with district peace committees and other formal government institutions to address conflicts. Yet priorities at the village and district levels do not appear to align in many instances. Moreover, district peace committees have become largely non-functional, attributed to lack of resources to keep the committees operational. As a result, the roles of district peace committees have been replaced to a certain extent by District Security Committees, a closed group under the Resident District Coordinator (appointed by central level), with a focus restricted to issues of national security.⁶⁵

Though they have continued to function in the relative absence of their district counterparts, village peace committees have little representation of women. Generally, issues raised by women such as domestic violence go unaddressed or are given low priority.⁶⁶

Natural Resource Management—Land, Minerals, and Water

Changing market dynamics and governance structures have had significant implications for the management and allocation of natural resources. Key institutions for management of land, water, and minerals share similar features: community reliance on traditional institutions whose authority has been compromised (and in some cases coopted by political interests); local formal structures lacking the capacity, resources, and/or political interest to oversee resource management in a transparent and coordinated manner; and dominance by men and male interests.

Land and Minerals

Customary tenure in Karamoja has three sub-tenures that include individualized/ family land use for homesteads; communal land for grazing, water points, and shrine areas; and institutionalized land gazetted

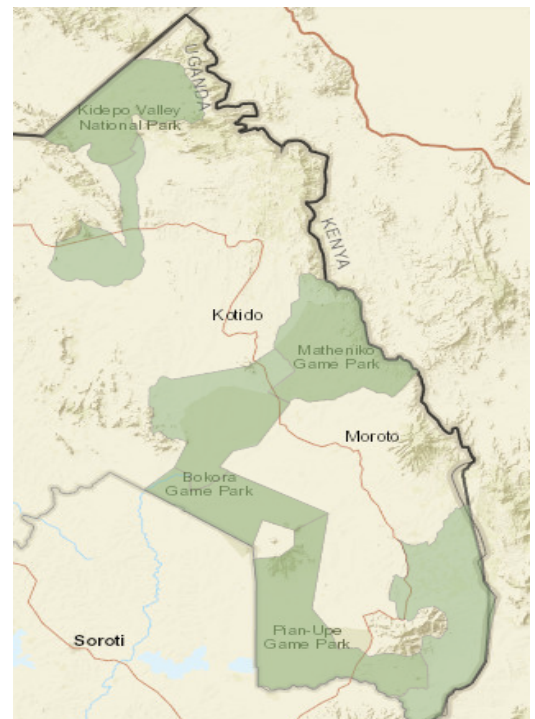


Figure 7: Protected Land in Karamoja

Source: Uganda Directorate of Geological Survey and Mines and Spatial Dimension
<http://portals.flexicadastre.com/uganda/>, accessed 15 April 2016)

⁶⁴ Howe, K., Stites, E., & Akabwai, D. (2015). We now have relative peace; Changing conflict dynamics in Northern Karamoja, Uganda. Somerville, MA: Feinstein International Center.

⁶⁵ Key informant interview: MC GHG governance team

⁶⁶ Howe, K., Stites, E., & Akabwai, D. (2015). We now have relative peace; Changing conflict dynamics in Northern Karamoja, Uganda. Somerville, MA: Feinstein International Center.

to the government or belonging to institutions like churches. Traditionally, men have construction rights for homesteads that are inherited only by male family members. Wives can be allocated gardens or cultivated areas, which are then inherited by boy or girl children.⁶⁷ Communal land is “managed collectively by clans, sub-clans or lineages that live in close proximity to each other and share common resources such as grazing areas and water sources.”⁶⁸ In Karamoja, 54% of land is currently under institutional tenure, predominantly for wildlife protection under the National Forestry Authority and National Wildlife Authority.⁶⁹

With the breakdown of customary land management mechanisms and expansion of agricultural practices, conflicts have emerged between government, farmers, and herders over ownership and use of land. There is considerable lack of clarity around use and access rights in gazetted areas, and key informants describe harsh punishments endured by herders whose livestock trespass into wildlife reserves.^{70,71} The formation of new agricultural settlements (described in the next section) has contributed to disputes between farmers and pastoralists accustomed to using these for grazing.⁷²

With rising value of land in Karamoja, the titling of land by individuals for private ownership has also risen. At times, land has been titled without the knowledge or full comprehension of customary owners.⁷³ Land transactions are conducted through area land committees (ALCs) at sub-county level, district land committees (DLCs), and the Ministry of Land.⁷⁴ The roles of ALCs and DLCs are not clearly defined, however, and have been described as non-functional and even “comatose.”⁷⁵ In practice therefore, land decisions and transactions do not follow prescribed legal procedures.

Minerals have been one of the driving factors for rising demand and value of land. The Ministry of Energy grants mining licenses through local applications to District Chief Administrative Officers. An online cadastral map managed by the

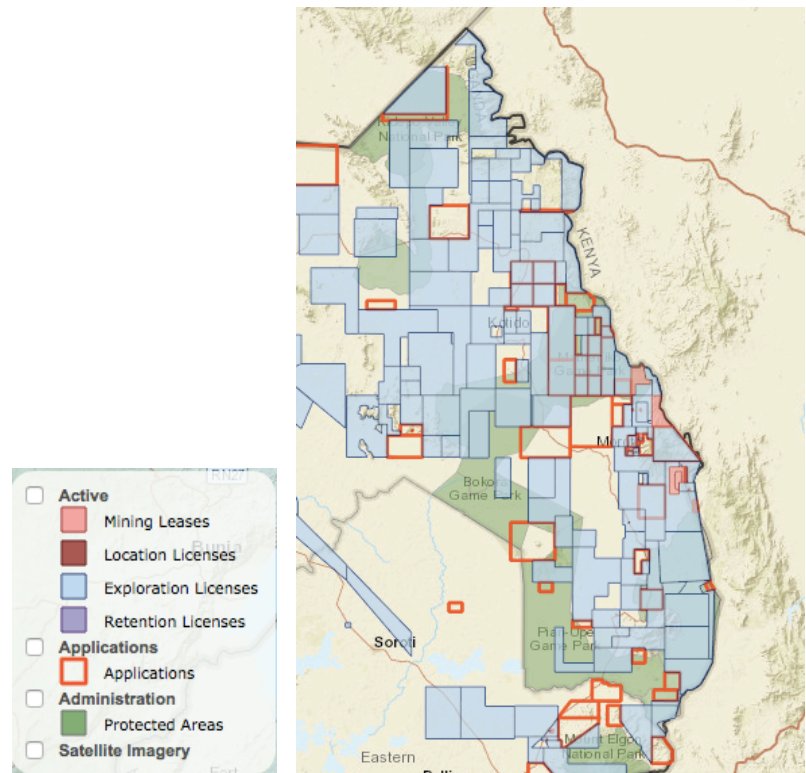


Figure 8: Mining Licenses in Karamoja

Source: Uganda Directorate of Geological Survey and Mines and Spatial Dimension
<http://portals.flexicadastre.com/uganda/>, accessed 15 April 2016

⁶⁷ See Andries 2014 35 for table of land use

⁶⁸ Adiba, E., Mabikke, S., Rosales-Kawasaki, L., Malilo Owor, E., Antonio, D. (2016). Enhancing tenure security for customary lands and natural resources in Karamoja region through participatory Community mapping. Washington, DC: The World Bank.

⁶⁹ Owor, E., Nnamulondo, P., Achola, L., Augustinus, C., Antonio, D., Rosales-Kawasaki, L., Burke, C., Mabikke, S. (2015). Paper prepared for presentation '15: World Bank Conference on Land And Poverty. Washington DC: The World Bank.

⁷⁰ Andries. (2013). (Pg. 35).

⁷¹ Key informant ULA

⁷² Key informant: GIZ Peace and Conflict Advisor

⁷³ Key Informant ULA

⁷⁴ Nnamulondo, P., Paradza, G., & Cherlet, J. (2015). *Communal land associations claim compensations for investments in their territories, Karamoja, Uganda*. Case study of the ILC Database of Good Practices. Rome: ILC.

⁷⁵ Key informant ULA, Human Rights 2014

Ministry shows that almost the entire area of Karamoja is covered by exploration licenses, but that only a handful of mining leases have been granted (Figure 8). As described by Human Rights Watch (2014), Uganda's Mining Law "does not require any communication or consent from the local population during exploration work," but does require "surface rights agreement to be negotiated with landowners prior to active mining and payments of royalties to lawful landowners once revenues flow."⁷⁶ Key informants argue that companies with exploration licenses have taken advantage of loose regulation and monitoring to begin exploitation without negotiating permission from communities. In one documented case, a company received a mining license after negotiations with a limited number of male elders, a process of which the majority of communities were unaware.⁷⁷ Some communities have been displaced by mining activities, and avenues for redress are limited.⁷⁸

Communities whose land is being used for mineral exploitation or gazetted for conservancies are eligible to 3% of the revenue collected from these ventures, although some have called for raising this rate to 15%.⁷⁹ Many communities are unaware of this regulation. Moreover, current institutional structures and communal land arrangements do not, in practice, permit communities to claim these revenues. As of 2013, a community in Katikekile sub-country in Moroto was the only "legally recognized landowner entity to receive royalties," having received 4.7 million Ugandan shillings between January and June 2013.⁸⁰

National level land policies include provisions to clarify land arrangements and prevent abuse, although implementation particularly in Karamoja has been extremely poor. The 2013 National Land Policy requires community consultation in advance of gazettment, and allows communities to put forward legal challenges to gazettments that did not undergo full processes mandated by law. The National Land Policy also includes provision to develop criteria for compensation of "foregone opportunities." The Uganda Wildlife Act includes a provision allowing the communities neighboring wildlife reserves to access specific resources, based on agreed collaborative management agreements. However, no agreements have been signed to date, which is attributed partly to political interference.⁸¹

The National Land Act also provides for the formation of Communal Land Associations (CLAs), which provide secure tenure (in the form of Certificates of Customary Ownership or CCO) to community associations claiming communal land rights. CLA registration requires that women compose at least one-third of management board membership. Civil society actors have promoted CLAs as an appropriate tool for securing access to communal rangeland currently under threat in Karamoja. While 45 CLAs had been formed as of 2015 in Karamoja, none have been registered.⁸² This may be due in part to vacancy of District Registrars of Title in most districts. CLAs might be less appropriate in Amudat and Nakapiripirit districts, where sub-clans' communal land areas are not clearly defined.⁸³

⁷⁶ Human Rights Watch. (2014). How can we survive here? The impact of mining on human rights in Karamoja, Uganda. (Pg. 8). New York: Human Rights Watch.

⁷⁷ Human Rights Watch. (2014). How can we survive here? The impact of mining on human rights in Karamoja, Uganda. New York: Human Rights Watch.

⁷⁸ Key informants: ULA and Mercy Corps Governance Team

⁷⁹ Human Rights Watch. (2014). How can we survive here? The impact of mining on human rights in Karamoja, Uganda. New York: Human Rights Watch.

⁸⁰ Human Rights Watch. (2014). How can we survive here? The impact of mining on human rights in Karamoja, Uganda. New York: Human Rights Watch.

⁸¹ Key informant ULA

⁸² Key informant, ULA

⁸³ Owor, E., Nnamulondo, P., Achola, L., Augustinus, C., Antonio, D., Rosales-Kawasaki, L., Burke, C., Mabikke, S. (2015). Paper prepared for presentation '15: *World Bank Conference on Land And Poverty*. Washington DC: The World Bank. Key informant ULA

Land conflict is resolved through a combination of formal court systems, informal mediation, and “alternative dispute resolution” (ADR), which utilizes existing community structures such as the council of elders. These mechanisms are successful when there is no external or political interference. Courts are generally utilized as a last resort when informal channels have failed.⁸⁴

Water

Poor coordination and governance at multiple levels constitute the central challenge to adequate water provision and distribution. Boreholes, the main source of drinking water, are constructed primarily by non-state actors and managed by village level committees charged with collection of user fees to provide for repair and maintenance of pumps by local hand pump mechanics. In practice, these systems function poorly with low collection of user fees, capacity among mechanic associations, and availability of spare parts for repair. Mandated water quality tests for contamination are rarely performed, and hepatitis E and cholera outbreaks occur frequently. Boreholes are poorly distributed as a result of weak coordination and planning among development partners and government: while most communities do not have sufficient boreholes, other boreholes serve a smaller than recommended population.⁸⁵

Valley tanks and dams are constructed by Ministry of Water and Environment using budget allocation from the Office of the Prime Minister. Water User Committees are comprised of nine members, including community representatives who receive training on maintenance and operation and tools for maintenance. Yet these committees are mostly low or non-functional for a number of reasons: committees are unpaid and operate on voluntary basis; district governments have insufficient budgets to maintain facilities, which are not income generating; and infrastructure is located far settlements, making them inaccessible for maintenance.⁸⁶

Karamoja does not have a master plan for water development, and there is limited knowledge on the status of key water sources and infrastructure. In the absence of water management plan, efforts are ad hoc, fragmented, and politically driven.⁸⁷ There is however a plan for the Kyoga catchment area, and the national Directorate of Water has recently initiated a process of catchment level planning in Lokere and Lokok sub-catchments in Karamoja.⁸⁸

⁸⁴ Key informant ULA

⁸⁵ Key Informant, Mercy Corps MCH Advisor

⁸⁶ Key informant, Directorate of Water

⁸⁷ Avery. (2014).

⁸⁸ Key informant: MWE

Development Trends in Karamoja

This section considers key socioeconomic trends influencing the nature of shocks and stresses and the sensitivity and exposure of populations in Karamoja.

Livelihood Trends

Agricultural Livelihoods

The last decade in Karamoja has witnessed the transition from a primarily pastoral based livelihood system to one that is increasingly diverse and dependent on crop production. This has not constituted a wholesale upheaval of pastoralism or livestock-based livelihoods, but a general reduction in the number of households—with viable herd sizes—who are able to rely on pastoralism as a dominant strategy. As described by Bushby and Stites (2016), the general trend is “from pastoralist to agro-pastoralist livelihoods, to strictly agrarian livelihoods, and migration trends, which have resulted in casual wage labor, urban labor, and livelihoods.”⁸⁹

Estimates of the livestock population in Karamoja are considered unreliable because of enumeration challenges.⁹⁰ Nevertheless, there is reason to believe that the population may be expanding, following the devastating decline during the disarmament period. Observational evidence suggests that trading of heifers imported from South Sudan and Kenya in Karamoja livestock has increased, indicating an effort by pastoralists to restock their herds. Key informants also describe rising demand for veterinary services, as a result of previous losses, increasing awareness, and an elevated profile of community animal health workers (CAHWs).⁹¹ However, in line with trends elsewhere in the region, it is likely that inequality in distribution of livestock ownership is also increasing.⁹²

The growing importance of agriculture is reflected in the share of investment in and income from crops in relation to other livelihood strategies, which still include livestock for many households. At the same time, a clear push to sedentary, primarily agrarian livelihoods is observable in the emergence and continued growth of agricultural settlements.

Limited research is available on the dynamics and outcomes of new agricultural settlement, so STRESS relied on observations from a variety of key informants.⁹³ Households first began relocating to “resettlements” (areas from which they had been displaced a result of insecurity) as well as previously unsettled areas within or on the margins of the Green Belt around 2009 and 2010, following the improvement of security conditions. Secondary accounts of these settlements come from Levine (2010) and Nalule (2010), who describe them as being dominated by “victims of raiding, especially widows; the very poor; children and young women who have been forcibly removed from urban centers” and young men who intend to farm until they could earn enough to restock their herds. They describe “people with no clan or

⁸⁹ FIC and Mercy Corps (2015) as cited in Little, P., Abebe, D. Bushby, K., Mahmoud, H., & Stites, E. (2016). Resilience and risk in pastoralist areas: recent trends in diversified and alternative livelihoods. Washington, DC: USAID.

⁹⁰ FAO. (2014). FAO/GIEWS livestock and market assessment mission to Karamoja region, Uganda. Rome: FAO.

⁹¹ Key informant: Mercy Corps Livelihood Advisor and Livestock teams

⁹² Burns et al. (2013).

⁹³ FIC and Mercy Corps (2015) as cited in Little, P., Abebe, D. Bushby, K., Mahmoud, H., & Stites, E. (2016). Resilience and risk in pastoralist areas: recent trends in diversified and alternative livelihoods. Washington, DC: USAID. A forthcoming PHD dissertation by Barbara Gerber explores in depth the dynamics of settlement in Kotido District, and is expected to provide considerable insight into a poorly understood phenomenon.

family relationship and with a very skewed social and demographic make-up,” such that poorer members rely on wealthier members for labor opportunities in a “patron-client” relationship.⁹⁴

Since 2011, established settlements such as Lobanyia in Kotido had been growing significantly, with other smaller settlements emerging alongside. They have been developed primarily—though not exclusively—in the Green Belt. The process of settlement requires that one family member (generally a man but can also be a woman) identifies land and opens it, granting him or her effective ownership of the plot. In early stages, some households claimed large tracts in this manner, fueling competition to open additional land elsewhere. Today, the region is witnessing a “rush” to claim these lands, drawing in farmers from beyond Karamoja (including from the Teso region).⁹⁵

Most households settle as a result of distress, and many intend to farm only until they earn enough to buy livestock.⁹⁶ A Mercy Corps staff estimated that there were between 30-40 settlement areas in Northern Karamoja. He felt that the settlements had been relatively successful, managing to harvest some crops in 2014 and 2015 in spite of the poor rainfall, and that they were likely to continue grow into town centers with functional markets and small businesses. Another key informant expressed greater skepticism that farmers in these areas would be successful in yielding productive harvests over the coming years; however, she noted that farmers themselves are highly optimistic and believe themselves to be embarking on a more “modern” economic path as compared to their pastoral past.⁹⁷ Focus group discussion (FGD) participants in Nyakwae described their efforts in locating and initiating experimental cropping in new areas in Abim. They expressed their intention to settle permanently in these areas once boreholes were provided.

As a result of this demand, land in existing settlement areas is becoming more scarce and valuable. In established settlements in particular, better-off Karamojongs have titled land formally, and wage laborers who may continue to live there informally work the land. A key dynamic in formation of new settlements is thus the need to move farther away from serviced areas in order to find unclaimed land. All key informants agreed that the majority of settlements, even the more established ones, are in remote locations and are poorly serviced by roads, health facilities and schools. Nyakwae FGD participants acknowledged that they would be moving farther from these services, but felt that the tradeoff of claiming productive land was worthwhile. This distinguishes the settlement phenomenon from other livelihood strategies related to increasing urbanization, which brings people closer to services and facilities.

Migration, Urbanization, and Wage Labor

Opportunities in urban areas, in emerging industries like mining and various sectors outside of Karamoja are also becoming increasingly important for a growing number households and individuals, especially among poorer households who have fallen out of pastoralism. Individuals and households migrate primarily for economic reasons but are driven by mostly negative “push factors,” including loss of livestock, inability to provide food for their family in rural areas, and, for some women, domestic abuse or household conflict.⁹⁸

Migration can represent a positive adaptive strategy for many individuals and households. At the same time, individuals utilizing these strategies fall on a spectrum of vulnerability—from those undertaking safe, well-planned migration with supportive social networks and decent working conditions, to less deliberate and

⁹⁴ Levine, S. (2010). What to do about Karamoja? Rome: FAO.. Nalule 2010

⁹⁵ Key informant: Barbara Gerber, PHD researchers

⁹⁶ Levine, S. (2010). What to do about Karamoja? Rome: FAO., Key informant: Barbara Gerber

⁹⁷ Key informant, Barbara Gerber

⁹⁸ Stites, E. (2014) Better to sweat than to die. Portland, OR: Mercy Corps. Stites, E., & Abakwai, D. (2012). Life to town: Migration to Mbale and Moroto.

more desperate migration (some times of children) with unsafe or exploitative working conditions, to victims of human trafficking at the extreme end. Women and girls are more vulnerable to experiencing the exploitative features of migration.

District	Total pop. 2014	Urban Pop 2014	Urban Rate 2014	Total Pop 2002	Urban Pop 2002	Urban Rate 2002
Napak	145,219	16,377	11			-
Nakapiririt	169,691	3,657	2	154,494	22865	14.8
Moroto	104,539	14,818	14	189,940	7408	3.9
Kotido	178,909	13,990	8	377,102	27151	7.2
Kaabang	169,274	11,543	7			-
Amudat	111,758	11,617	10			-
Abim	109,039	17,400	16			-
Total	988,429	89,402	9	721,536	57424	8

Table 2: Urban Population and Growth Rate in Karamoja
Source: Uganda National Population and Housing Census 2002 and 2014⁹⁹

There is broad recognition that Karamoja is urbanizing although data on the rate of growth and geographic dynamics are imprecise. As illustrated in Table 2, estimates derived from Uganda's 2002 and 2014 National Population and Housing Census suggest that the proportion of urban population has increased by just one percent over ten years, from 8% in 2002 to 9% in 2014. Key informants caution that the 2002 census figures overestimated the overall population, making subsequent rate of urbanization appear lower. Globally, census figures are known to frequently underestimate urban populations, since they often do not account for temporary migrants and may include only the administrative rather than functional boundaries of an urban area.¹⁰⁰ Anecdotally, key informants and FGD participants in Kotido expressed that the city had grown remarkably over the last 3-4 years, with new residents and traders arriving steadily each year.

Stites et al (2014) describe that urban residents in Kotido, Abim, and Kaabong fell into one of several broad categories: Predominantly male migrants with relatives living in rural areas; seasonal migrants who return to rural areas for cultivation during planting season; temporary urban inhabitants with plans to return to rural area after achieving an economic goal; daily or near-daily commuters; and women who had come to town after being "widowed, abandoned, or mistreated." FGDs conducted for STRESS suggested an additional category of young people who have lived in town since birth or shortly after birth, yet even this group retained very strong ties and support networks with relatives and friends in rural areas.

⁹⁹ Urban population for 2002 is calculated based on given urban rates for the three districts in Karamoja at the time. The urban growth rate in particular districts is misleading, since the subsequent creation of additional districts makes the 2002 and 2014 figures incomparable. Uganda Population and Housing Census 2002 and 2014. Uganda Bureau of Statistics. (2006). 2002 Uganda population and housing census: Analytical report. Kampala: Uganda Bureau of Statistics.

¹⁰⁰ McGranahan, G.; & Satterthwaite, D. (2014). Urbanisation concepts and trends. London: IIED.

Less research is available on smaller sub-county towns in Karamoja. According to Mercy Corps staff, towns like Kapedo, Kalapata, Karenga, Kokoria, Lokiteregu, Panyang'ara, Kanu, Rwamuge, Morulem, and Kiru, among others, have grown in population and trade over the last several years. Stites and Akabwai (2012) describe that peri-urban towns and mining centers represent “an important sector of people who had transitioned away from animal based livelihoods.”¹⁰¹

Individuals also migrate for wage farm labor opportunities and natural resource extraction, some independently and other times as paid laborers. Nyakwae residents during FGDs described traveling to neighboring villages and small towns to engage in wage farm labor for mining or stone quarrying. Human Rights Watch (2014) reports “it is not clear how many people rely on or sporadically turn to mining for cash in the dry season, but one local civil society group estimates that there are over 18,000 men, women, and children active in the sector in Karamoja.”

It is clear that individuals are taking advantage of enhanced security to find labor opportunities outside of Karamoja, although statistics on outward migration are unavailable. FGDs in Nyakwae indicated heavy migration of young women, often over large distances, to places such as Soroti, Kabarole, and Amuria for farm or domestic work. This occurred usually during the dry season when food availability was low, working for several months at a time as laborers or domestic workers. Older men and young men described going to towns in Abim or Soroti mostly for farm labor. The International Organization for Migration (IOM) (2014) confirms that urban centers like Busia, Iganga, Jinja, Kampala and Mbale have “large and well-established Karamojong communities.”¹⁰² Out-migration has a snowballing effect, where families follow each other to create a network of people who share familial, village, or clan connections.¹⁰³

Shifts in livelihoods, both farm and off-farm, have a clear gendered dynamic. In the absence of a shift in social norms that would permit men to engage in crop production and other non-livestock activities, a phenomenon of “male idleness” has developed among men and youth boys.¹⁰⁴ Women and girls have taken on the burden of providing for the family, particularly in crop production, which is the traditional domain of women. Their entrance into the cash economy also includes firewood collection and charcoal burning, wage labor, and operation of small businesses. While this brings growing autonomy and independence with positive implications for investment back into households, it also imposes considerable additional burden. As described by Mercy Corps (2013), “women may be earning more income, but they are increasingly time poor. The average workday for women in rural and urban settings is 18 hours, which is 5-10 hours more than men’s.”¹⁰⁵ Women and children also migrate more than men, and women (particularly mothers), appear to be key decision makers in the process of out-migration, determining whether to out-migrate or to send children out with relatives or unknown persons.¹⁰⁶

Research suggests additionally that members of the Bokara community “comprise the vast majority of migrants currently moving to urban areas outside of Karamoja” because of their relative vulnerability to cattle

¹⁰¹ Stites, Akabwai. (2012). (Pg. 6).

¹⁰² IOM (2014).; Geldoff et al. (2012).; Ayoo, S., Opio, R., Kakisa, O. (2012). Karamoja situational analysis: Northern Uganda women's empowerment program. Care International Uganda.

¹⁰³ IOM (2014).; Geldoff et al. (2012).; Ayoo, S., Opio, R., Kakisa, O. (2012). Karamoja situational analysis: Northern Uganda women's empowerment program. Care International Uganda.

¹⁰⁴ Gelsdorf, K., Maxwell, D., & Mazurana, D. (2012). Working paper 4: Livelihoods, basic services, and social protection in Northern Uganda and Karamoja. Somerville: Feinstein International Center.

¹⁰⁵ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps. This may be slowly changing, however. Preliminary evidence in Kotido suggest that men may be taking on a greater role in farming in new settlement areas, a practice that is being emulated even in villages to which families frequently return -- Key informant, Barbara Gerber GIZ

¹⁰⁶ Ayoo, S., Opio, R., Kakisa, O. (2012). Karamoja situational analysis: Northern Uganda women's empowerment program. Care International Uganda.

raiding after losing arms during the disarmament period.¹⁰⁷ As described further in the next section, mobility has also been associated with forms of trafficking.

Population Growth

A number of key informants assessed that rising population and high fertility rates may be aggravating challenges around land distribution and access to services. Uganda's 2014 census shows a population growth rate of 3.2% from 2002–2014, on par with Uganda's national average which is one of the highest growth rates in the world. Inflated census figures in 2002 mean that the growth rate may actually be higher than estimated. Key informants moreover hypothesize that growth rates are continuing to rise with the end of conflict, improvements in health status, and higher fertility rates due to the presence of men in manyattas.¹⁰⁸ Karamoja has the lowest demand for family planning in Uganda, "with few aware of or interested in using condoms, implants, injections or any other widely available free methods."¹⁰⁹ Growth rates are highest in Abim at 6.2%, Nakapiripirit at 5.2%, and Amudat at 4.7%. This is notable particularly given Abim's location in the Green Belt, where land is valued highly for agricultural purposes and substantiates concerns that this area is experiencing growing competition for resources. In contrast, Kaabong's population declined by 1.50% between 2002 and 2012, although again this may partly reflect inflated 2002 census figures.

Key informants were concerned that in spite of growing investment in health facilities, population growth meant that services were unlikely to improve per capita in the coming decade.

District	Population			Number of Households	AvgHH size	Population growth rate (2002 - 2014)	Counties	Sub-counties
	Males	Females	Total					
Abim	52,963	56,076	109,039	18,297	5.9	6.20	Labwor	5
Amudat	58,498	53,260	111,758	15,850	6.2	4.70	Pokot, Kilak	9
Kaabong	79,932	89,342	169,274	29,725	5.6	(1.50)	Dodoto	14
Kotido	85,291	93,618	178,909	29,847	6.3	3.15	Jie	6
Moroto	50,756	53,783	104,539	22,506	4.4	2.52	Matheniko, Municipality	6
Nakapiripirit	82,326	87,365	169,691	26,414	5.7	5.20	Chekwii, Pian	8
Napak	69,086	76,133	145,219	27,471	5.3	2.11	Bokora	8
Total Karamoja	478,852	509,577	988,429	170,110	5.63	3.2	10	56

Table 3: Population Distribution by District
Source: UNICEF Karamoja Nutrition Strategy (2015-2020)

Implications of Socioeconomic Trends into the Future

Growing disparity in wealth and access to resources (particularly land) appears a likely outcome of trends in pastoralism and land governance. Overall, groups that have access to education or land and/or assets will be well positioned to take advantage of new economic opportunities. At the same time, others

¹⁰⁷ International Organization for Migration. (2014). Child migration from Karamoja. Kampala: IOM.

¹⁰⁸ Uganda Bureau of Statistics. (2011). Uganda demographic and health survey. Kampala: Uganda Bureau of Statistics. Total fertility rate for Karamoja between 2008 and 2011 was 6.4 just slightly above the national average. DHS.

¹⁰⁹ McLoughlin. (2016).

will be forced into out-migration and wage labor. A theory of change for Karamoja needs to help ensure equitable resource sharing and human resource development allow the greatest number of people to be part of this first group, while also securing decent and safe labor opportunities for the second group.

As illustrated in Figure 9, if Karamoja follows the trajectory witnessed elsewhere in Africa's drylands, a smaller number of wealthy pastoralists will increasingly dominate livestock through commercialized pastoralism (where rangeland is still available) and intensification of livestock production (where it is not). As accessible grazing land shrinks, wealthier pastoralists for instance may choose to adopt a more self-contained ranching model, which requires large enclosures of private land.

In the long-term, increased commercialization may benefit the population. A commercialized industry may eventually create consistent, wage-earning jobs both on-herd (managing herds) and off-herd (processing products). Commercialization may also create a positive ripple effect on education levels if boys currently kept at home as herders are sent to school because of a growing association of education levels with decent wages.

In the short- and medium-term, however households and individuals who are "stepping out" of pastoralism will face the greatest economic hardship, uncertainty, and be most vulnerable to falling into severe poverty. This will be play out in shifts toward agriculture and non-farm livelihoods, with settlements and urban areas playing an important role. A shrinking minority may continue to rely on mobile pastoralist livelihoods, with a larger number lacking access to land, markets, and capital, thereby retreating to other livelihood strategies. Some households may continue to raise livestock on a smaller scale, shifting from pastoral lifestyles to sedentary ones in which the livestock are no longer the principle, but rather supplementary source of livelihood.



KARAMOJA IN 2026?

Participants in STRESS's Strategize Workshop projected the following will occur in ten years:

Both livestock and crop production will be operating at a commercial scale and mutually supportive with farmers producing feed for livestock. The region will develop a consumer goods market and professional services, attracting in-migration and returnees from the Karamojong diaspora to establish new businesses. Private sector investment will be much greater than current levels and include industries like cement. These will spur demand for cheap labor and absorb a portion of the excess labor supply. However, questions remain about the extent of absorptive capacity, especially given Karamoja's "youth bulge," and there are concerns that the education system has not equipped students with the skills necessary for formal employment.

Ecological degradation will be an important challenge for the region, especially as households increasingly shift toward the Green Belt and if mining activities expand. A number of key factors with important implications for the region's development remain uncertain. These include the speed and extent of infrastructure and grid electricity development, potential political change at the national level, partial or full withdrawal of international development donors, and the extent of the mining boom. Another major uncertainty is the degree to which social norms adjust to a changing economy, allowing both men and women to engage in a range of productive sectors, own assets, and make decisions about their use.

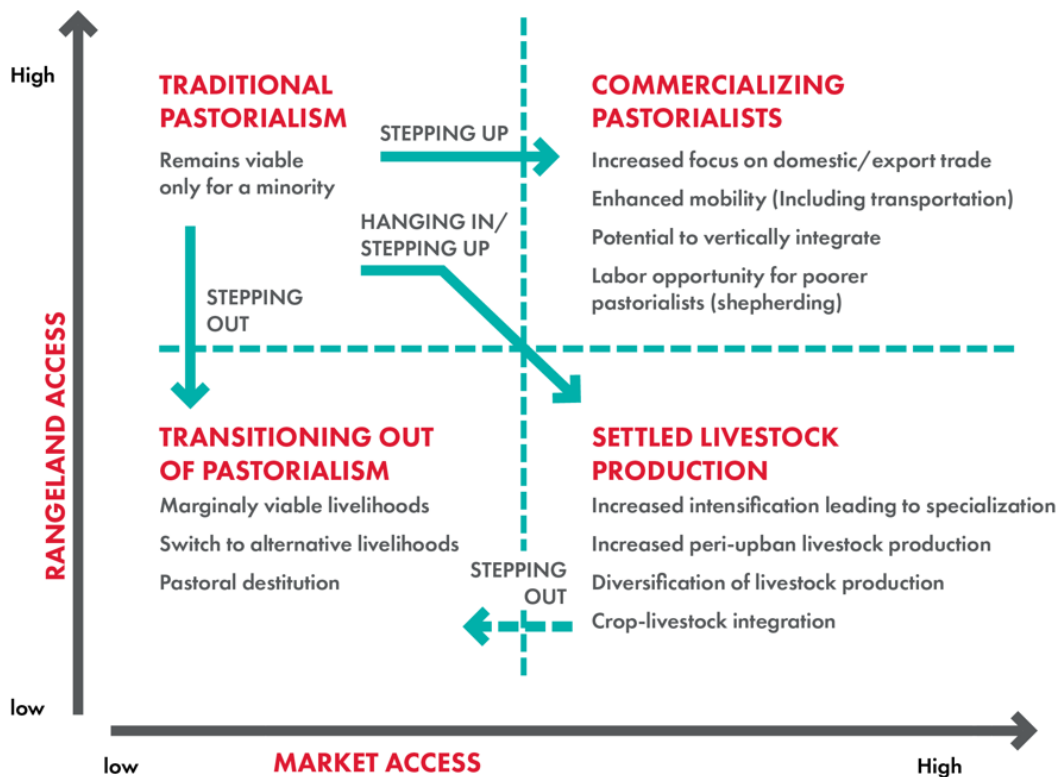


Figure 9: Potential Pastoralist Futures

Source: Bisson: Technical Discussion Paper: The Future of Pastoralism in Drylands Africa (2006)

For farmers and agro-pastoralists, elites' growing control over land may result in significant disparities in control over means of production. Levine (2010) noted the danger of such patron-client relationship emerging in agricultural settlements. In 2014, FAO observed that the Western Green Belt already displayed a "skewed distribution of wealth," and Nyakwae women during STRESS FGD describe laboring on "rich peoples'

farms."¹¹⁰

Though little is known about the growth rate, location, or dynamics of settlement areas, they appear to be increasing in number and size. It will be important to understand the degree to which these settlements are delivering positive livelihood outcomes in spite of their lack of connectivity to markets. On the other hand, remote settlement complicates delivery of services such as health and education and triggers conflict around land use.¹¹¹

Stites et al. (2014) contend that the combination of central government policies aimed at preventing Karamoja residents from abandoning pastoral systems and settling in outside urban areas like Jinja and Kampala "coupled with the ecological unsuitability of much of the region for regular cultivation, will likely lead to the continued growth of urban centers within Karamoja's border." Urbanization can support economic development and markets, but requires a degree of management, planning, and investment that is currently absent.¹¹² In Uganda, 60% of urban settlements are considered slums, and Karamoja's large and small towns would be highly susceptible to the same trajectory.¹¹³ Assuming security conditions in Karamoja do not change, the trend of out-migration is also likely to continue.

There is a need to ease the transition into new livelihoods. With the onset of peace and entrance of new actors into the market, there are opportunities for business, value chain development, and new types of

¹¹⁰ FAO. (2014). Household economy assessment baseline report overview. Rome: FAO.; Resilience Analysis Unit. (2015).

¹¹¹ The settlements are the key partners for the system of seed suppliers and agents being facilitated by Mercy Corps.

¹¹² Stites et al.

¹¹³ The Republic of Uganda Ministry of lands, Housing, and Urban Development. (2008). A situation of slums in Uganda and ational slum upgrading strategy and action plan. Kampala: Department of Human Settlements.

employment. As highlighted by the Overseas Development Institute or ODI (2012), the current shift in development programming is toward “viability” and “away from vulnerability.” The question is to what extent the majority of households will be able to access these opportunities safely without sustaining major risks, and which will need forms of social protection to avoid destitution or exploitation.

Empowered Karamoja: Vision and Theory of Change for Development

In light of these development trends, Mercy Corps and its partners envision a future for Karamoja characterized by the empowerment of its citizens, who are equipped to navigate the shifting dynamics of markets, livelihood opportunities, and governance institutions deliberately. This future is one in which women have equal decision-making and ownership rights as men; peace and security prevails through coordinated, effective, and accountable institutions (both formal and traditional); in which populations are increasingly educated and able to take advantage of new economic opportunities inside and outside of Karamoja; in which access to key natural resources like land is distributed equitably through transparent legal processes; and in which healthy communities value, demand, and have access to quality services and a healthy environment.

Such a future is underpinned by improved access to economic opportunities, health services, knowledge, education, and sustainable natural resource management. All of these are dependent on good governance at multiple levels, including increased participation among and agency and voice of marginalized groups, social protection, and access to justice.

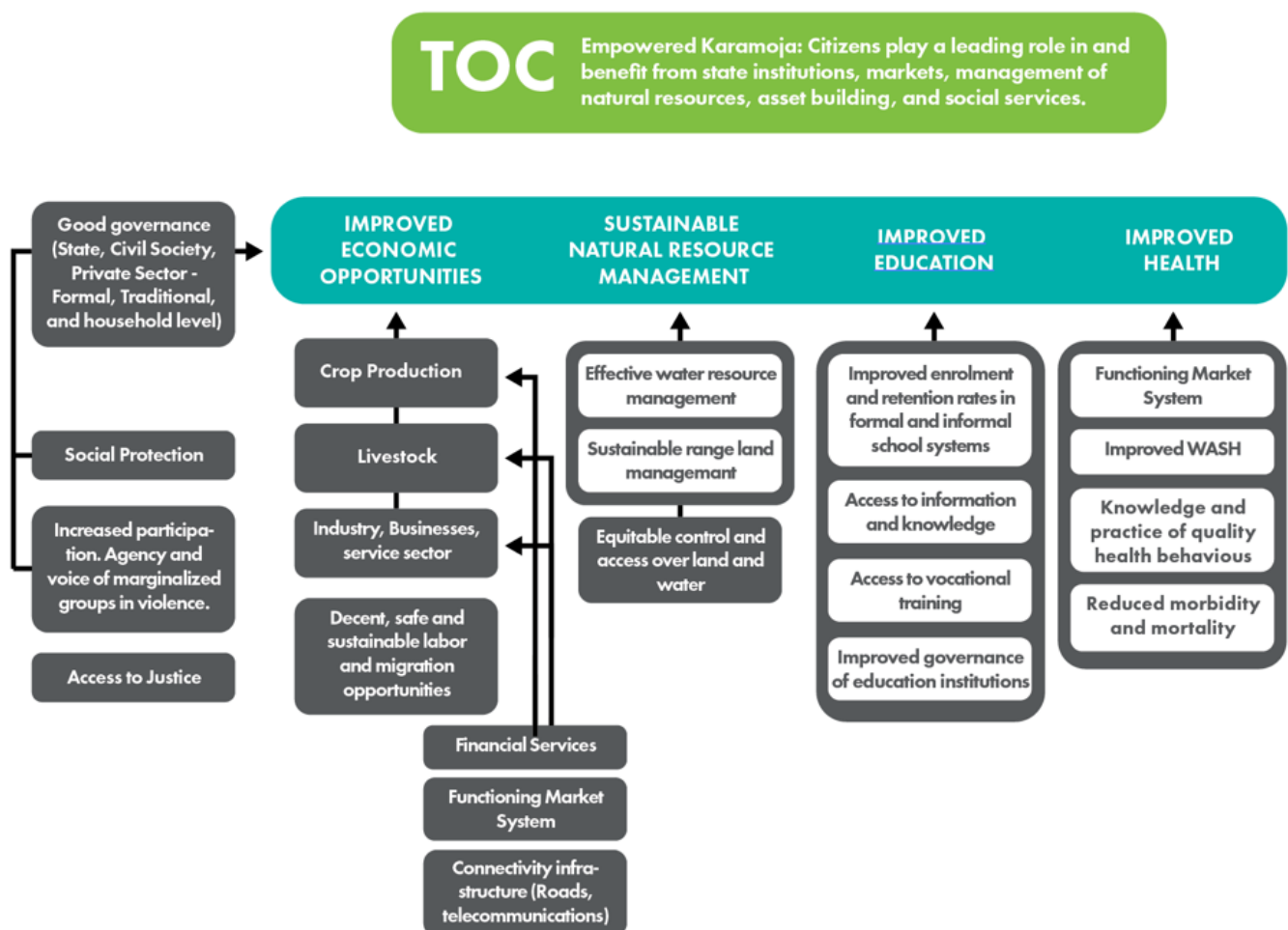


Figure 10: Mercy Corp and Its Partners' Development Theory of Change for an Empowered Karamoja

Shocks and Stresses

A number of shocks and stresses compromise the long-term the ability of communities, state, and non-state actors in Karamoja to achieve their vision of development. The impacts of drought and rainfall variability, natural resource conflict, alcoholism, under-nutrition and HIV, among others, strongly disrupt progress towards achieving key aspects of economic, ecological, and social well-being in Mercy Corp's own Theory of Change.

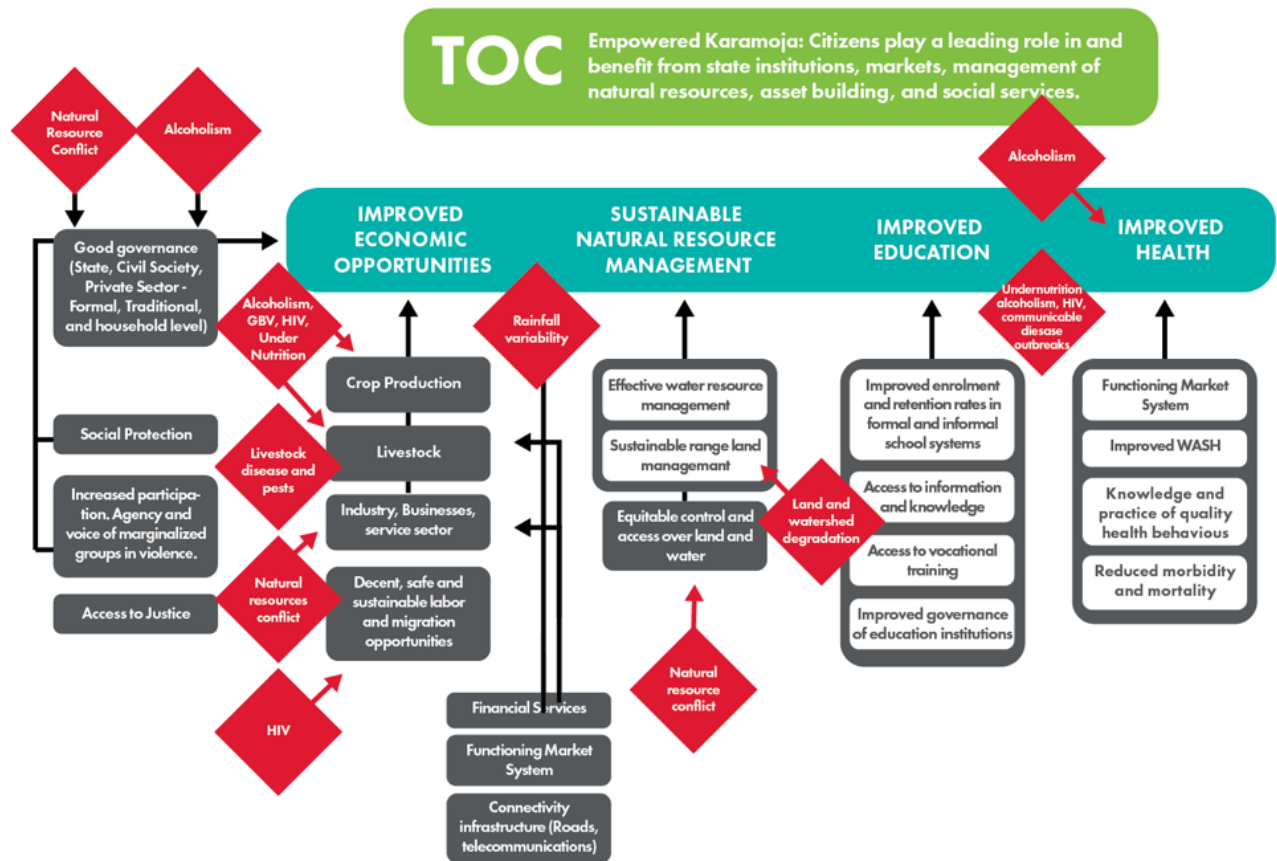


Figure 11: Impacts of Shocks and Stresses on Mercy Corp and Its Partners' Development Theory of Change

Climate Related Stresses: “Drought,” Rainfall Variability, and Dry Spells

A number of studies highlight the community perception that droughts and/or dry spells have become more frequent and rainfall patterns less predictable.¹¹⁴ While these perceptions are revealing, it is important to investigate the meteorological significance of each of these dynamics.

In Karamoja, rainfall is “characteristically episodic in occurrence, alternating with a prolonged severe dry season.”¹¹⁵ This means that Karamoja experiences high rainfall variability marked by intermittent extended dry seasons. Such erratic rainfall is a historical feature of Karamoja’s climate: from mid-century, Wilson (1960) observed considerable year-to-year variation in the total annual rainfall, accompanied by poor rainfall distribution. Variability is associated with dry spells, including from inter-seasonal rainfall, in which rains begin at the start of the planting season but cease over a long period. Variability may have become more severe in recent years. The Resilience Analysis Unit or RAU (2015) finds that monthly rainfall amounts in 2009-2014 diverged considerably from monthly averages over the previous 30-year period, although it is unclear—from the analysis of anomalies—that variability has actually increased.

With regard to drought: based on analysis of monthly precipitation data and annual rainfall anomalies from the average, Andries (2014) argued that the data “do not support the perception of an increase in drought incidences based on meteorological impacts...it is safe to conclude that the perception of increased number of droughts is just that—a perception. In which case other factors contribute to such a perception.”¹¹⁶ Indeed, the perception of more frequent drought is important to recognize and understand. The concept of drought is relative and linked to the dominant types of livelihoods practiced in a specific region, particularly in a context such as Karamoja in which rainfall variability has always been extremely high across seasons and years. As described by Stites (2016) “while crop failure is anticipated once every three years, droughts that lead to the death of over 20% of livestock have only occurred once every 10 years between 1927-1995.”¹¹⁷ Building on this, Levine (2010) argues that “for as long as livelihoods are livestock dependent, then, we can say that there have been no recent droughts in Karamoja. There have only been “droughts” for people who are settled and who rely on farming.”¹¹⁸

	Historical Trends	Future Projections*
Seasonal rainfall distribution and variability	<p>From 1970 to 2010 marked a trend of increasing rainfall from October-December over the entire Karamoja region. March-May rainfall has increased over the north and decreased in the south.¹¹⁹</p> <p>According to UN RAU (2015), the start of the rainy season has been highly erratic from 2009-2014.</p>	<p>March-May rainfall increases over all of Karamoja until 2050. October-December rainfall is projected to increase, with increase of about 42 per cent by 2080 simulated by the middle emissions scenario. Projections indicate rainfall reduction in the range of 14 per cent to 41 per cent for July to September.¹²⁰</p>

¹¹⁴ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.; RAU. (2015).; Dale et al. (2015a).; Markandya, A., Cabot-Venton, C., & Beucher, O. (2015). Economic assessment of impacts of climate change in Uganda: Karamoja case study. Uganda: Climate and Development Knowledge Network.; Stark 2011 (Climate Change and Conflict in Uganda: The Cattle Corridor and Karamoja)

¹¹⁵ Mubiru, D.N. (2010). Climate change and adaptation options in Karamoja. Rome: FAO.

¹¹⁶ Andries 2014 - Drought risk assessment of Karamoja

¹¹⁷ According to Mercy Corps Livestock Advisor, 20% is not particularly high, given that normal per annum mortality is roughly 10%

¹¹⁸ Levine, S. (2010). What to do about Karamoja? Rome: FAO.

¹¹⁹ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.

¹²⁰ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.

Daily rainfall variation	Number of days with unusually high rainfall (RAU 2015)	More days with lower rainfall, fewer days with higher rainfall. A “small but increasing fraction....of days” might receive more rainfall than ever recorded before. There will be fewer cool days than historically experienced. ¹²¹
Annual rainfall distribution	The average annual rainfall amount varies from one district to another, ranging from 703.93 to 1171.87 in Lokok and Lokere sub-catchments (1980-2010).	“Almost all the [20] climate models are projecting relative increment in annual rainfall in Lokere and Lokok sub-catchments for all the Representative Concentration Pathways.” However, findings across districts and Representative Concentration Pathways (RCPs) vary. ¹²²
Temperature	Average annual temperature ranged from 23.01 to 24.75 °C in Lokok and Lokere sub-catchments (IUCN and FAO 2015). Maximum temperature has increased over the last 40 years by 1.9° C at Kaabong station (northern Karamoja), and by 3.9° C in Moroto area (southern Karamoja). Minimum temperatures have changed by an average of 3.6° C over the entire region. There has been an increase in the number of unusually hot days and nights. ¹²³	Both Rautenbach (2015) and Mercy Corps (2013 BRACED VCA) projections suggest there will be days reaching high temperatures, previously unprecedented.

Table 4: A Number of Historical Trends Analyses and Available Climate Change Projections for Karamoja¹²⁴

Floods

Intense rainfall triggers flooding, especially in urban areas and valleys. As evident from historical data and projections illustrated in Table 4, the number of extreme rainfall events has risen and may continue to rise into the future. Flooding is exacerbated by land degradation, which leaves land bare, making it susceptible to erosion. As a result, the absorption and retention capacity of soil is reduced, leading to water accumulating on the surface and floods which spread quickly and cause significant damage to roads and crops. Floods can also cause contamination to open water sources like boreholes and cause silting to water dams.

As described by Mercy Corps (2013), “rains, when they come, are more intense and difficult to manage, eroding soil and degrading land. The intensification of the rain also



Figure 12: Flood Risk Map of Karamoja

Source: UNEP. Cited in RAU 2015

¹²¹ Rautenbach. (2015), as cited in Dale, N., Markandya, A., Wanzira, H., & Nakendo, I. (2015). Economic assessment of the impacts of climate change in Uganda: Case-study on agricultural production in the Karamoja region. Kampala: GoU Ministry of Water and Environment.

¹²² IUCN. (2014). Framework for rangeland management. IUCN.; FAO. (2015)

¹²³ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.

¹²⁴ Climate change projections have a high level of uncertainty, related to the inherent limitations of modeling; loss of granularity through the process of downscaling; inherent uncertainty about future GHG concentrations. Margins for error increase the further into the future scenarios are projected.

causes flooding that destroys young crops, washes away fertile topsoil, and collects in massive flooded areas at lower points.” FGDs participants in Nyakwae confirmed that flooding was common, as water would accumulate in the valleys, destroying their crops and forcing them to relocate and farm elsewhere. Flash floods are also common for communities living closer to seasonal rivers. Although there is little research on flash floods impacts, reports suggest those who cross these seasonal rivers have limited market access during these events.

Land and Watershed Degradation and Land Cover Change

Because populations are concentrated in smaller areas, communities have converted land to serve different purposes, including grazing, settlement, and agriculture. There has been a reduction in vegetation—partly due to over-grazing in areas with concentrations of livestock—around protected kraals, river banks, boreholes, and dams. Dry season burning results in a high percentage of bare land (30-40%) and exposes soils to erosion during the rainy periods. The widespread dependence on tree harvesting for thatching roofs and manyatta fencing, charcoal burning, and brick making has resulted in the rapid loss of species and vegetation cover in vast areas of Karamoja. This negative coping strategy is fueled by a demand for charcoal in Kampala and elsewhere in Uganda, where it can fetch a price of three to four times higher than in Karamoja.

Trees loss is particularly acute in areas with large settlements, such as Nadunget in Moroto districts and Nabilatuk in Nakapiripirit.¹²⁵ A survey by IUCN (2014) observed a 14% loss of the recorded plant species in Moroto and 33% in Napak.¹²⁶ Over-exploitation of forestry, overgrazing, and conversion of hills for agriculture also degrades upper catchment areas in parts of Moroto and Napak, reducing water absorption, leading to erosion,

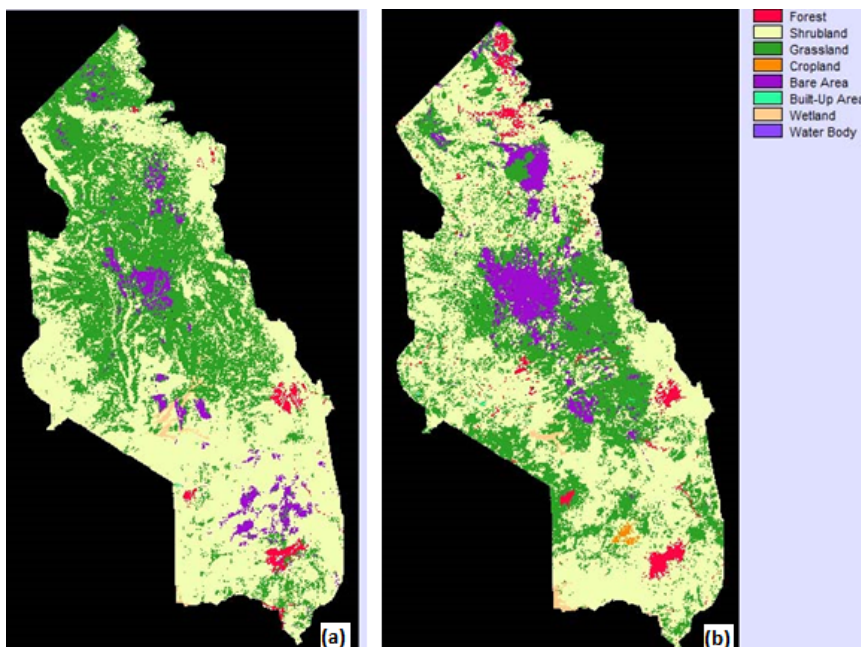


Figure 13: Land Use/Land Cover Map of the Karamoja Region for (a) 1986 and (b) 2014

Source: Mercy Corps (2014)

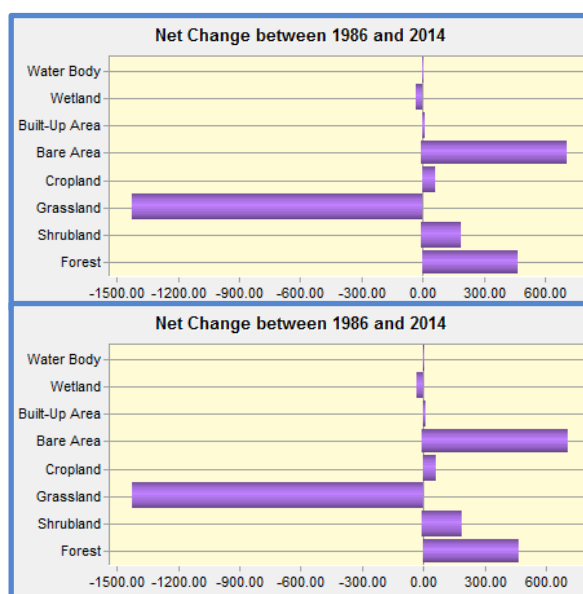


Figure 14: Net Change in Land Cover in the Period 1986 and 2014 (values are in sq. km)

Source: Mercy Corps (2014)

¹²⁵ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.

¹²⁶ IUCN. (2014). Framework for rangeland management. IUCN.

exacerbating flood impacts and likely reducing ground-water recharge rates.¹²⁷

Deterioration of land is part of a negative feedback loop linked to poverty and dependence on resource extraction. With households now deeply reliant on income particularly from charcoal sales, the cycle has become nearly intractable. Meanwhile as described previously, the area of available land continues to shrink due to expropriation by government and elites.

An analysis of satellite images by Mercy Corps (2014) suggests that these patterns are leading to a larger scale changes in land cover in Karamoja. Between 1986 and 2014, grassland areas were reduced significantly, whereas shrub land area expanded. Bare lands also expanded in central Karamoja, and gains in forest cover seem to correspond roughly to protected areas.¹²⁸

Natural Resources Conflict

Competition for land is becoming a principle source of conflict in Karamoja, one likely to intensify in the coming decade. As described in earlier sections, privatization, gazettement, and mining concessions have encroached on communal lands, and the lack of functioning institutions necessary to manage land use and tenure arrangements has left communities living in fear of land grabs, loss of access to mineral deposits, water contamination, erosion, and forced evictions.

In some circumstances, this has ignited conflicts between government, private institutions/actors and communities in Karamoja.^{129,130} In at least one instance, households relocated to a new settlement with permission and encouragement from district officials, only to be evicted by national authorities after learning that the new settlement was located within a protected area.¹³¹ Tensions have also emerged between herders and national agencies in areas bordering wildlife parks, as a result of animals straying into non-gazetted areas and herders illegally grazing animals in the protected areas.¹³²

Conflict has also emerged among agricultural settlers and between farmers and pastoralists. Conversion of land into cropland has heightened competition, as households recognize the value and growing scarcity of land. Additionally, farmer-to-farmer land conflicts are also present in the Green Belt regarding boundaries and farmland and are common during the planting season.¹³³ One key informant described a “rush” to claim land, including by farmers from outside of Karamoja, for example Teso and Soroti. Indeed, Oxfam reported conflict around boundaries, including “low-key contestations between the Bokora (present-day Napak district) with their Teso neighbors over the border.”¹³⁴

Competition between pastoralists for water sources is longstanding with shrinking rangeland access and poor governance of water infrastructure exacerbating the problem. The absence of a water management plan or global water budget for Karamoja underscores a larger set of challenges for Karamoja’s water

¹²⁷ GIZ. (2015)

¹²⁸ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps. Changes may also arise from the differences in seasonality, since the images used to carry out the mapping were acquired at different times of the year

¹²⁹ GoU. (2014). Karamoja Moroto District: Hazard, risk, and vulnerability profile. Kampala: GoU.

¹³⁰ Kabongo, I., Kabiswa, C., Atugonza, S. Balemesa, T., Karatisi, R., & Bainomugisha, A. (2014). The dynamics of conflicts related to land and natural resources in Rupa, Karamoja, Uganda. 2014. Eco, Riamiriam, and ACODE.

¹³¹ Key Informant: Barbara Gerber PHD Researcher

¹³² Mercy Corps Strategize Workshop.

¹³³ USAID. (2015). Uganda: Conflict scan report for the month of February 2015. Washington, DC: USAID.

¹³⁴ Drivers Of Conflict In Karamoja: An Analysis Of Factors Fuelling The Continuing Conflict-Oxfam

system.¹³⁵ While irrigation in Karamoja is currently very small-scale and no larger scale investments appear to be underway for the region, Avery (2014) argues that plans under the 2011 National Irrigation Master Plan would likely create additional conflict between pastoralists and farmers.^{136,137} Human Rights Watch (2014) likewise warns of the “real potential for water availability and contamination problems to be exacerbated as more mining companies expect to tap into the same water sources when they arrive to explore and mine in Karamoja in larger numbers.”¹³⁸

Livestock Diseases and Pests

Livestock disease and pests played a central role in the catastrophic decline of livestock populations between 2008 and 2012. FGD participants in Kaabong described livestock disease as a shock, occurring once or twice per year historically; however, since 2014 they have constituted a constant stress. Common livestock diseases include Contagious Bovine Pleuro Pneumonia (CBPP), Peste des Petits Ruminants (PPR); Contagious Caprine Pleuro Pneumonia (CCPP), Foot and Mouth Disease (FMD), and Tick Borne Disease like Anaplasmosis, Babesiosis, and East Cost Fever.¹³⁹ Recently, zoonotic diseases including Brucellosis and Rabies have appeared. Tick infestation (Lomadang) and tick borne diseases, as well as gastro intestinal worms (Ngikuur) present additional threats to livestock health and productivity.¹⁴⁰ Previous outbreaks of livestock pests and diseases have resulted in bans on livestock cross-border trade and establishment up of quarantines, which have adversely affected livestock markets in Karamoja by reducing income from sales.

Use of livestock health systems in Karamoja is constrained by: a perception of high cost of services; a culture of aid dependency (with NGOs and government supplying free veterinary services and drugs); limited knowledge of CAHWs; and severe shortage of fully trained veterinary doctors to serve the Karamoja population. Additionally, Karamoja law does not fully recognize CAHWs, and they do not belong to a specific body of professional service providers. This may change, as legislation recognizing CAWLS is currently under review.¹⁴¹

Crop Pests

According to the UN Resilience Context Analysis for Karamoja, 30% of surveyed population in February 2014 reported crop pests and diseases as a major shock affecting agricultural production. Pesticide usage in Karamoja is very low. During STRESS FGDs, farmers in Nyakwae District complained bitterly of a new pest affecting their crops. Areas suffering from land erosion are particularly vulnerable to invasive species that overtake crops and can be poisonous for livestock. Because climate variables influence the geographical distribution of pests and diseases, future climate shifts could expand their distribution to new areas, magnifying this threat.¹⁴²

¹³⁵ Avery. (2014).

¹³⁶ Avery. (2014). DCA water study.

¹³⁷ Per. Comm. Thomas Ameny, FAO

¹³⁸ Human Rights Watch. (2014). How can we survive here? The impact of mining on human rights in Karamoja, Uganda. (Pg. 73). New York: Human Rights Watch

¹³⁹ RAU. (2015).

¹⁴⁰ Eguru. (2015).

¹⁴¹ Abebe, D. Bushby, K., Mahmoud, H., & Stites, E. (2016). Resilience and risk in pastoralist areas: recent trends in diversified and alternative livelihoods. Washington, DC: USAID.

¹⁴² GoU. (2007). Climate change: Uganda national adaptation programs of action. GoU.

Price Shocks/Fluctuations

A number of reports highlight food prices and price shocks as a critical burden for households.¹⁴³ Indeed, FGD participants particularly in Kotido Town expressed that inflated prices before the start of the rainy season constituted a severe stress, one that occasionally sent them back to rural areas. 2015 witnessed an alarming spike in prices of staple commodities, with the price of maize, sorghum, and beans rising by 58%, 49%, and 19% respectively between 2014 and 2015. The spike was attributed to the preceding season's poor harvest (as compared to the favorable 2013 bumper crop harvest) and heightened dependency on external markets.¹⁴⁴

In previous resilience analyses, there is some discrepancy regarding the extent to which Karamoja experiences cyclical price spikes versus generally high prices. Mercy Corps (2013) reports that “even under normal climate conditions, the Karamoja economy faces an annual economic shock each year during the rainy season, when prices spike and incomes plummet.”¹⁴⁵ In contrast, RAU (2015) suggests that there is no great variation in prices of staple foods throughout the year, except when prices fall during the post-harvest period of November to March. As illustrated in Figure 15, the World Food Programme (WFP) confirms that prices for sorghum, maize and beans did fluctuate but not dramatically until the very end of 2015. The tendency among households to sell crops at low prices at the height of the harvest season, rather than storing or banking, does little to reduce exposure to high prices later in the season.¹⁴⁶

Though crop yields from of previous years' harvests affect cereal prices, Karamoja's dependence on imported cereals exacerbates market fluctuations and distortions. An assessment by Mercy Corps in 2014 found tremendous price

disparities across the region with significantly higher food prices observed in Kaabong than in Abim related to market isolation of traders in the former.¹⁴⁷ Vendors in Kotido interviewed for STRESS reported road blocks or excessive rains in points of origin could cause mild shocks. Most cereals in Northern Karamoja come from just two wholesalers with no aggregation by sub-dealers, increasing vulnerability.¹⁴⁸

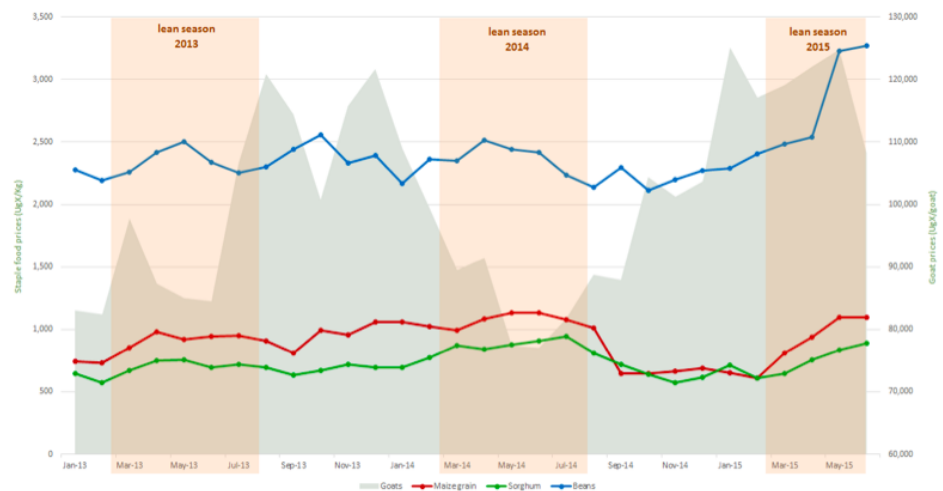


Figure 15: Price of Selected Cereals and Goats from 2013-15

Source: Karamoja Development Partners Open Working Group (2015)

¹⁴³ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps; RAU. (2015)

¹⁴⁴ WFP. (2015). Monthly market bulletin—December 2015. Washington, DC: WFP.

¹⁴⁵ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.

¹⁴⁶ WFP. (2014). Food security and nutrition assessment (FSNA) in Karamoja. Washington, DC: WFP.

¹⁴⁷ Sparkman/Mercy Corps. (2014) Ag2Nut community call: Uganda food trade system, and new dietary diversity indicator. *Presentation Notes*.

¹⁴⁸ Mercy Corps. (2014). GHG team: Food trade network draft report. *Unpublished report*.

Youth Male Unemployment/Disenfranchisement

The stasis within traditional governance systems during the conflict period deprived youth men of their traditional roles in community life. Burns et al (2013) describe the “lack of identity and humiliation” among Karamoja men who have not been formally initiated into positions of authority, which “has left several generations of male Karamojong without any real power, status, or voice.”¹⁴⁹ As such, male youth lacked access to the social and economic capital necessary to gain social respect, support families, or pay bride prices. While other income generating opportunities are available to men (e.g. agriculture, brewing, poultry) engaging in these traditionally women-led activities may undermine their social capital.

Violence—Crime and Gender Based Violence

Large-scale conflict is now rare in Karamoja, due to reduced numbers of ammunitions and weapons among citizens and new social taboos against using them. In Kaabong district, households in 2015 reported violence between household members as the most common form of conflict. Small-scale cattle thefts are still present within communities, despite the reduced rate of major cattle raids. However, the small-scale thefts in many ways reflect former raiding practices, and are often inter-regional, with communities from neighboring states initiating these thefts. Petty theft of household items is also a major concern for households.¹⁵⁰ The term “lonetia” is used to describe a phenomenon of male individuals who cause violence, steal animals, and other assets within communities.¹⁵¹

GBV is linked to historical disempowerment of women but exacerbated by changing social dynamics, particularly the loss of livelihoods for both youth and adult men, who are the primary perpetrators of violence against women. Research by Mercy Corps shows increasing reports of GBV, with higher rates of violence against women as compared to men. Sexual violence is mostly perpetrated against women, with a small percentage of victims being men.¹⁵² As described by Valone 2016, “rape cases are reported rarely and the overall number and frequency is highly contested among health professionals and government officials. In general, women lack knowledge on their rights and communities lack a strong mechanism to document cases of GBV and SGBV.” Referral pathways through health units, policy, and court system are severely constrained, and community institutions offer limited support because of prevailing attitudes that condone sexual violence.¹⁵³ Early marriage of girls, a cultural tradition in Karamoja, occurs without the full consent of the girls and is in some cases accompanied with violence (e.g., rape) to force girls to accept their grooms.¹⁵⁴

Malnutrition, HIV, and Communicable Disease Outbreaks

Karamoja has seen an overall decline in GAM rates from a peak at 23% in 2003, although the regional median rate remains above the World Health Organization’s (WHO) emergency threshold of 10%.¹⁵⁵ Under-nutrition rates fluctuate with the season, but can reach as high as 15-25% in hunger season in Kaabong and

¹⁴⁹ Feinstein baseline

¹⁵⁰ Mercy Corps. (2015). Conflict management and mitigation endline study. Portland, OR: Mercy Corps.

¹⁵¹ Howe, K., Stites, E., & Akabwai, D. (2015). We now have relative peace; Changing conflict dynamics in Northern Karamoja, Uganda. Somerville, MA: Feinstein International Center.

¹⁵² Mercy Corps. (2015). Conflict management and mitigation endline study. Portland, OR: Mercy Corps study

¹⁵³ Valone. (2016). Social systems background paper for STRESS.

¹⁵⁴ Howe, K., Stites, E., & Akabwai, D. (2015). We now have relative peace; Changing conflict dynamics in Northern Karamoja, Uganda. Somerville, MA: Feinstein International Center.

¹⁵⁵ UNICEF/DFID. Karamoja multisectoral nutrition strategy 2015-2020. as cited in McLoughlin (2016).

Moroto.¹⁵⁶ Among Karamojong children under five, 13% are acutely undernourished, 34% are chronically undernourished, and 21% are underweight.¹⁵⁷ Macro deficiency is evident in the region, with an average caloric at only 58% of the recommended 2,500 daily in-take. Dietary diversity in Karamoja is minimal, with an average of 2.4 of a possible 12 food groups consumed per day, and only 2% of children under two receiving the minimum acceptable meal frequency and diversity.¹⁵⁸ Such macro and micronutrient deficiencies underlie the population's vulnerability to a range of compounding health problems. This includes an alarming 70% rate of anemia among children under five in Karamoja, "increasing their risk of irreversible cognitive losses and poor immune functionality in childhood". Other noted micronutrient deficiencies include vitamin A deficiencies (impacting vision) and folic acid deficiencies (increasing risk for neural tube defects in birth).¹⁵⁹

Malnutrition is an underlying risk factor for communicable disease due to low health status and immunity. Reduction in mobility (leading to densely populated settlement) combined with poor health practices and lack of WASH services and practices have contributed to outbreaks of epidemic prone diseases in Karamoja, including cholera, hepatitis E, yellow fever, and meningococcal meningitis.¹⁶⁰ Recent outbreaks include cholera (2006, 2010, 2015), meningitis (2006, 2007), and hepatitis E (2009-12).¹⁶¹ FGD participants reported that diseases like cholera, malaria, and typhoid were most prevalent following heavy rains. Community settlements in remote and poorly serviced areas, inadequate vaccination and immunization facilities, and poor water and sanitation facilities have hindered disease surveillance, prevention, and treatment.¹⁶²

Karamojong were once regarded as a low-risk HIV population because of their relative isolation. Yet by 2012, prevalence among this community had risen to 5.8%, up from 3.5 percent in 2004-05.¹⁶³ Growth of trade and market access, increasing mobility, urbanization and migration—particularly related to mining—are drivers of transmission in Karamoja. Key informants observed that the growing prevalence of sex work as a livelihood and transactional sex were contributing to HIV transmission, especially among youth. Traditional polygamous practices contribute to transmission rates in rural areas. Overall, limited awareness of HIV, poor access to condoms, and negative attitudes toward safe sex mean that transmission is essentially unchecked. Several key informants felt that absent of urgent intervention, HIV could represent a major threat to Karamoja, severely constraining its social and economic development.¹⁶⁴

Trafficking and Exploitation

Although individuals are moving increasingly into non-farm livelihoods and out-migration, prevailing governance conditions make these activities susceptible to labor abuses. This is evident for in the mining sector. A case study of three mining companies with activity in Karamoja found that, "employees were employed casually without contracts and several reported not receiving wages that they were owed."¹⁶⁵

¹⁵⁶ Food Security and Nutrition Assessments, Karamoja—all 2012-15, along with GHG sponsored biannual mass screenings, McLoughlin (2016).

¹⁵⁷ USAID FFP Baseline. 2014. Available [here](#).

¹⁵⁸ USAID FFP Baseline. 2014. Available [here](#).

¹⁵⁹ McLoughlin. (2016).

¹⁶⁰ McLoughlin. (2016).

¹⁶¹ McLoughlin. (2016).

¹⁶² Cummings, M., Kamakech, I., Malimbo, M. and Lukwago, L., (2014). Emerging and reemerging epidemic-prone diseases among settling nomadic pastoralists in Uganda..

¹⁶³ IRIN. (2102). Inadequate healthcare and rising HIV prevalence in Karamoja. IRIN.

¹⁶⁴ Key informants.

¹⁶⁵ Human Rights Watch. (2014). How can we survive here? The impact of mining on human rights in Karamoja, Uganda. (Pg. 73). New York: Human Rights Watch

Allegations of a cement company compensating their workers in warangi (Ugandan brew) were raised during a Karamoja Development Partners Working Group Meeting.¹⁶⁶

According to the US State Department's 2015 Trafficking in Persons report, women and children from Karamoja are "particularly vulnerable to domestic servitude, commercial sexual exploitation, and forced begging....additionally, many Karamojong children are brought to towns in Eastern Uganda where they endure forced labor in grazing and domestic servitude or to Kampala where they are exploited."¹⁶⁷ A national Task-Force on Child Trafficking has been established under the Ministry of Gender, Labor and Social development. However, aside from treating this purely as a criminal issue, there have been limited efforts to address the root causes.¹⁶⁸ The growing prevalence of child migration outside of Karamoja also exacerbates vulnerability to human trafficking.¹⁶⁹

Alcoholism

As a result of male and youth disempowerment, men have developed "feelings of inadequacy, depression and loss of power in the new economy [which have] led to rising levels of alcohol consumption, petty crime and theft, and sexual and gender-based violence."¹⁷⁰ Alcohol is cited as the second largest expenditure for households after food, and the second most important trigger of violence and insecurity.¹⁷¹ Shocks and stresses related to alcoholism and GBV and other negative cultural practices—including forced marriage, courtship rape, and abducting girls from dormitories—are deeply entrenched. Many of these practices and the attitudes underlying them can contribute to transmission of HIV, particularly in limiting the ability of women to make proactive, informed decisions about their sexual and reproductive health.

¹⁶⁶ Meeting minutes – January 2015

¹⁶⁷ U.S. State Department. (2015). Trafficking in persons report. (Pg. 344). Washington, DC: U.S. State Department.

¹⁶⁸ Key informant: Mercy Corps Governance Team

¹⁶⁹ IOM. (2014).

¹⁷⁰ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.

¹⁷¹ Technical Assistance to NGOs (TANGO) and Mercy Corps. (2013). Uganda peace-building and resilience study. Portland, OR: Mercy Corps.

Resilience for Whom? Differential Vulnerability Profiles

For individuals, vulnerability to shocks and stresses is mediated by a variety of factors: dominant livelihood strategies, wealth status, gender, age, and ethnicity. Exposure and sensitivities have likewise shifted, changing the nature of specific risk profiles.

Differential Vulnerability Across Livelihood Groups

Livestock Based Livelihoods

Livestock disease and pests are the most critical shock threatening livestock-based livelihoods, leading to reduced herd health and productivity and mortality, sometimes in large numbers. Though households with many livestock may eventually recover their herds, those with only a handful of livestock may struggle to regain them over time because of high reentry costs. The problem is compounded when livestock epidemics force the “closure of markets, thus affecting the major income source for pastoralists and agro-pastoralists that normally sell cattle during the hunger period.”¹⁷² Cross-border quarantines can cripple trade with indirect losses far exceeding direct losses related to livestock mortality and productivity.¹⁷³ Quarantines and market closures also negatively affect small businesses that rely on animals.

Natural resource conflict and degradation are of critical importance to pastoralists, whose herds depend on the ability to migrate freely to access water and healthy grazing areas during the dry season. Privatization, gazetting, and/or opening of land for crop productivity can severely hamper mobility, weakening animals, reducing their value, and making them less resilient to disease.

Although diminished rainfall does impact the health and productivity of animals due to impacts on vegetation and water availability, livestock-based livelihoods are much less vulnerable to erratic rainfall and dry spells. It is notable that Dale et al.’s (2015) economic analysis of Uganda’s agriculture sector finds negligible impact on livestock productivity from temperature and precipitation change.¹⁷⁴ However, when they occur, extended dry spells do present a serious stress for pastoralist communities, forcing men and boys to venture further in search of pasture and water, contributing to land conflict.

The threat of raiding has diminished significantly in Karamoja following disarmament. However, the ongoing presence of arms in South Sudan and Kenya means that the specter of cross-border raids remains should the security deteriorate, for instance, with the exit of military forces. Smaller scale theft of livestock remains a significant source of anxiety for livestock-owning households.

Crop-based Livelihoods

Drought, rainfall variability, and floods have a greater impact on agriculture-based livelihoods than on pastoral livelihoods. Many farmers are diversifying into and/or becoming increasingly dependent on agricultural production, which increases their exposure to Karamoja’s variable rainfall regime and shifting

¹⁷² FAO. (2011). Integrated food security phase classification (IPC) for Karamoja. Rome: FAO.

¹⁷³ Key informant: Mercy Corps Livestock advisor

¹⁷⁴ Dale, N., Markandya, A., Wanzira, H., & Nakendo, I. (2015). Economic assessment of the impacts of climate change in Uganda: Case-study on agricultural production in the Karamoja region. Kampala: GoU Ministry of Water and Environment.

climate conditions, as well as crop pests. Relatively low agronomic skills/knowledge and absence of effective extension services compound these issues. As described by RAU (2015), “Many cultivators are ex-pastoralists, new to farming or ‘in transition’ and their inadequate experience and knowledge, combined with poor extension services and lack of input providers, make outbreaks of crop pests hard to control and significant in terms of food insecurity and economic vulnerability.”¹⁷⁵ Households struggle to access services and agricultural inputs in part due to poor roads and connectivity.

Analysis by Dale et al. (2015) considers potential losses due to dry spells and flood under future climate conditions, projecting losses of “9 percent (for a less severe scenario) and 18 percent (a more severe scenario)” for Oryeotyene village in Abim, and “15% in a less severe scenario and 32%” for Nakayot in Napak to 2050. Mercy Corps (2014) notes that projections of reduced July-September rainfall are particularly alarming, given this is the main planting season.¹⁷⁶

As highlighted by Cummings et al. (2014), community settlement in remote and poorly serviced areas has hindered disease surveillance, prevention, and treatment. Households relocating to remote settlements in Karamoja areas may be particularly vulnerable to risks of epidemic outbreaks, due to the absence of WASH or health care facilities. This is particularly worrisome in light of Karamoja’s rising HIV rates. Land conflict is an important feature of the settlement phenomenon, as expressed by FGD participants in Nyakwae who were rushing to claim land as quickly as possible.¹⁷⁷ Nevertheless, the viability of crop production varies across the region, and households shifting to crop-base livelihoods outside of the Green Belt will be particularly at risk of crop failure.

Wage laborers—who are also more likely to be poor and single women—are doubly vulnerable to rainfall variability, since they depend on income earned after initial rainfall to buy inputs for their own plots. By the time this income is available, rains may have already passed, and they may have lost their opportunities for planting.

Urban and Non-farm Livelihoods

Results from STRESS FGDs in Sidok and Kotido Towns suggest that variability and dry spells remain the most important shock and stress for peri-urban and urban residents. This suggests that town centers in Karamoja are not shielded from impacts of dry spells, largely because of the strong links with rural settings and dependence on farm livelihoods. This implies that many urban individuals and households currently remain within a similar risk profile as their rural counterparts. This was particularly true for Sidok participants, who described reduced food availability due to crop failure. In Kotido, FGD participants additionally highlighted the secondary impact of price spikes, with youth claiming they return home temporarily when food prices rose significantly and food became inaccessible.

When asked specifically about urban-based challenges, Kotido participants identified human disease as the most critical shock or stress. Malaria, cholera, and typhoid are particularly prevalent following heavy rain and linked to poor sanitation. HIV was also raised as an emerging stress. There is considerable frustration with health services, which are distant (for rural households in Nyakwae), understaffed, and often lack the required medications. In Sidok, participants described being too weak with hunger to ingest medications.

¹⁷⁵ RAU. (2015). (Pg. 28).

¹⁷⁶ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.

¹⁷⁷ Cummings, M., Kamakech, I., Malimbo, M., & Lukwago, L., (2014). Emerging and reemerging epidemic-prone diseases among settling nomadic pastoralists in Uganda.

Out-migrants constitute a growing segment of Karamoja's population, and the trend is likely to continue. Stites and Abakwai (2012) hint at the spectrum of migrant profiles, from those with some degree of deliberate choice and understanding about what new conditions will entail to those lacking this level of agency and are exposed to various forms of labor exploitation and trafficking.

Differential Vulnerability Across Social Groups

Gender plays a formative role in producing and reproducing vulnerabilities in Karamoja. As summarized by Mercy Corps (2013), women and girls—particularly girls between the ages of 9 and 18—in rural and urban settings are the most vulnerable to shocks and stresses, although their growing financial independence could afford them a measure of protection in the future. Men and boys still possess forms of higher forms of capital (physical, financial and social) but their vulnerability could increase over time if they are unable to transition into new roles and ways of relating to women and girls.¹⁷⁸

With primary responsibility for crop production, women and girls are the first to feel the impacts of erratic rainfall, dry spells, and crop pests. Land degradation and water scarcity also impact them first and most acutely. During dry spells or drought, women and children endure longer distances to collection points and waits to use boreholes, and deforestation implies longer walks to collect wood for home construction, consumption, and/or charcoal production. Moreover, key institutions such as the village water committee are dominated by men, with women reporting these organizations are “taken over by young men during periods of prolonged drought or dry spells. These young men beat women with sticks and force them to pump water for them and their animals and to pay tolls to access the water, in addition to their water user fees.”¹⁷⁹

The lack of ownership or control over key resources compounds shocks and stresses for women. This is evident in the case of land conflict. Although women are less likely than men to become embroiled in direct confrontation, “women in polygamous marriages reported losing possession of their land—often plots they had tilled for many years—when a subsequent wife was taken. Widows said that their husbands’ extended family forcibly repossessed their land after his death and that little recourse was available to resolve these disputes.”¹⁸⁰ Though livestock pests and disease have a greater direct impact on livelihoods dominated by men, poultry disease (such as Newcastle) can devastate one of the rare assets controlled by women.

Girls are also more likely to adopt negative coping strategies such as reducing food consumption, early marriage, or school drop-out when shocks and stresses lead to reduced productivity of farm livelihoods.¹⁸¹ This is especially true for victims of GBV and SGBV, which can have devastating physical and psychological consequences.¹⁸² Recent impacts are dire with five women killed as a result of GBV in January 2015 in Kaabong district alone.¹⁸³ And, early marriages have in some cases led to suicide.¹⁸⁴ FGD participants in Kotido report that SGBV remains a critical stress for women in urban settings, with rapes occurring at night when security is poor.

¹⁷⁸ Mercy Corps. (2013). BRACED CVA. (Pg. 35). Portland, OR: Mercy Corps.

¹⁷⁹ Mercy Corps. (2014). BRACED VCA. (Pg. 67)..Portland, OR: Mercy Corps.,

¹⁸⁰ Howe, K., Stites, E., & Akabwai, D. (2015). We now have relative peace; Changing conflict dynamics in Northern Karamoja, Uganda. Somerville, MA: Feinstein International Center.

¹⁸¹ Mercy Corps. (2014). BRACED VCA. Portland, OR: Mercy Corps.. Key Informant: Mercy Corps Regional Gender Advisor

¹⁸² Mercy Corps (2015) CMM Endline study

¹⁸³ Howe, K., Stites, E., & Akabwai, D. (2015). We now have relative peace; Changing conflict dynamics in Northern Karamoja, Uganda. Somerville, MA: Feinstein International Center.

¹⁸⁴ Howe, K., Stites, E., & Akabwai, D. (2015). We now have relative peace; Changing conflict dynamics in Northern Karamoja, Uganda. Somerville, MA: Feinstein International Center.

Migration to urban areas or outside of Karamoja—where they are less restricted by traditional social norms and better able to control financial assets when outside of their villages—can be an important and even empowering adaptive strategy for women. By the same token, migration also holds greater risks for women and girls, who are more likely to engage in poorly protected domestic work. In some instances, young women engage in transactional sex or prostitution, raising their vulnerability to forms of abuse as well as HIV contraction. Girls also face the highest risk of trafficking.

Single, abandoned, or widowed women also face disproportionate vulnerability, primarily due to the increased burden to provide for their families. Single women are more likely to depend on wage farm labor with its potential for exploitation and “double” vulnerability to rainfall variability. Qualitative research indicates that some widows move to urban centers after the death of their husbands, where they have limited social networks. They are limited in the type of livelihood activities they can adopt, have more difficulty finding accommodations, and frequently survive on a single income stream.¹⁸⁵

For men and boys, recent loss of livestock and decline of pastoral livelihoods remained an underlying source of disempowerment, as well as an ongoing shock when livestock epidemics or theft occurs. These events contribute to GBV, alcoholism, and in some instances even suicide. Social norms meanwhile inhibit the willingness and ability of men to engage in alternative livelihood strategies that would promote household food security and health. Men and boys have greater exposure to violence linked to land and water conflict.

Age can also play a determining role in shaping patterns of vulnerability. The reduction in household availability of nutritious animal products (i.e., meat and milk) has most negatively affected the health of infants and children. This has long term developmental and health impacts. For children, shocks and stresses often mean loss of educational opportunities (especially for girls) when they are pulled from school to engage in natural resource extraction or wage labor. During times of food scarcity, their teachers may leave the region. Families tend to deprioritize elderly members in terms of access to food, such that older people frequently suffer during times of food scarcity.

Differential Vulnerability Across Wealth Categories

A number of studies desegregate households by wealth category revealing the extent to which poverty undermines peoples’ capacity to absorb and adapt to shocks and stresses.¹⁸⁶ Wealthier households own a greater proportion of almost every livestock type as compared to poorer households, and particularly higher value livestock such as cattle, sheep, and goats.¹⁸⁷ As corroborated by a number of studies, livestock and asset ownership is highly correlated to household sufficiency during periods of food insecurity, suggesting that wealthier households are more resilient to shocks and stresses such as erratic rainfall, crop pests, floods, and price shocks. They may be more vulnerable to livestock pest and disease outbreaks, although pastoralists with large herds will be more able to recover than those with small herds.

Burns et al. (2013) found that households in Northern Karamoja classified as poor were less able to rely on the sale of livestock or crops as compared to middle-income or better off households. They are more likely therefore to rely on food purchases and suffer more from price shocks. Regional price differences mean that locality is also a determinant of vulnerability to price shocks: “households living in, say, Kawalokol (in the

¹⁸⁵ From FGD in Sidok. Stites et al. (2014) also confirm the particular vulnerability of widows in urban settings

¹⁸⁶ Wealth is defined differently across regions in Karamoja (FAO 2014, Burns 2013). Most categorizations are sensitive to this, engaging communities to identify wealthy and poor households. In many regions, wealth is determined by livestock ownership

¹⁸⁷ TANGO. (2015). BRACED baseline. Tucson, TZ: TANGO.

western part of Kaabong district), have much lower purchasing power shilling for shilling than households in most other parts of the three-district area.”¹⁸⁸

Very poor and poor households as identified by FAO (2014) also depend on sale of labor and “self-employment” in all regions except the Southeast Cattle and Maize Zone. Within the category of “self-employment,” poorer households rely on firewood, charcoal, grass and pole sales indicating both their participation in and disproportionate vulnerability to natural resource degradation. Analysis from TANGO (2015) indicates that poor households have lower access to positive absorptive or adaptive strategies, which include access to savings and credit and ability to sell or replace livestock and assets. Poorer households were less likely to resort to reductions in food consumption (probably because they were food insecure in the first place). Poorer households are also more likely to engage in migration and wage labor, thus facing risks associated with exploitation and trafficking.

In addition to having lower social and human capital as compared to wealthier households, poorer households also have low disaster preparedness, low access to public services, and low effectiveness/access to conflict mitigation initiatives.¹⁸⁹ Overall, TANGO (2015) finds that poorer households consider themselves less exposed to shocks and stresses and experience them less intensely. TANGO attributed this to their perception of lower exposure of potential income and assets to losses as a result of shocks and stresses as compared to wealthier households. However, the study finds that both poor and wealthy households perceive themselves to be equally impacted by shocks and stresses, and poorer households are less likely to recover from shocks and stresses.

¹⁸⁸ Mercy Corps. (2014). GHG food Commodity network report. (Pg. 3). Portland, OR: Mercy Corps.

¹⁸⁹ TANGO. (2015). BRACED baseline. Tucson, TZ: TANGO.

Capacities

Mercy Corps and its partners identified the following capacities through the STRESS process. Each capacity articulates a strategy, which if employed by the identified user is theorized to increase their resilience. These capacities are designed to support Mercy Corps and its partners' vision for an Empowered Karamoja, ensuring development investments are sustainable and communities and their governments are able to capitalize on their hard work—even in the face of shocks and stresses.

Each capacity below is described using the following framework:

- **What:** Brief description of the capacity
- **Provisioning system:** The stakeholders, processes, or systems appropriate for ensuring delivery of the capacity
- **User:** The group, individual, or institution intended to employ the capacity. In some cases the user may also be a necessary component of the provisioning system
- **Response:** An articulation of the intended outcome or achievement reached as a result of the capacity the user employs in response to one or more shocks and stresses (indicated in red)
- **Required Transformational Factor:** Transformative capacity refers to the enabling conditions required for the provisioning, accessibility, and effective use of the capacity

Appendix A includes a chart summarizing framework responses for each of the following six capacities.

Capacity #1: Increased Capacity to Manage Natural Resources Equitably and Transparently

- **What:** Increased ability to reduce resource degradation and conflict through equitable and inclusive resource management, including planning, developing policies, directing resources more strategically.
- **Provisioning System:** Government, CLAs
- **User:** Government ministries, CLAs, farmers, and livestock grazers
- **Response:**
 - Through greater ownership and more sustainable resource investments, communities reduce natural resource degradation.
 - By divesting in unsustainable and destructive agriculture practices and facilitating land management between users across scales, the appropriate actors are able to reduce natural resource degradation.
 - The creation and use of a transparent land tenure system reduces conflict over natural resources—even as land users diversify and water resources become more variable and inaccessible.
- **Required Transformational Factor:** The creation of a clear land tenure system where ownership is understood and can be clearly confirmed, communicated, and enforced.

Inequitable and unsustainable natural resource management is driving a number of shocks and stresses (e.g., flooding, conflict), increasing livestock producers and farmers' vulnerability. Increasing government capacity to use information adaptively and effectively in managing resources at large scales will require engaging stakeholders beyond any single community, increasing capacity to manage existing degradation, reducing trends over time, and increasing transparency.

The creation of a clear land tenure system where ownership is recognized, and can be clearly confirmed, communicated, and enforced is foundational to this capacity. Access to secure land and transparent, equitable land use agreements undergirds efforts to reduce land degradation, combat water stresses, and reduce conflict. It also sustains capacities related to agricultural and livestock productivity and diversification of livelihoods. CLAs are arguably the key legal instrument for combatting loss of land to privatization and assuring communities legally own land. Though more than 50 CLAs have been established in Karamoja, none have been registered through the government. Nevertheless, they have helped community groups to defend against land grabs in the past.¹⁹⁰ The dynamics and sustainability of CLA structures are not well understood, and without strong civil society voice and accountability, they are at risk of being co-opted for private or elite interests. To achieve secure land tenure, all actors must deepen understanding of how CLAs work and can be strengthened. Implementation of the National Land Policy and CLA promotion in Karamoja will also require enhanced capacity among civil society organizations (CSOs). CSOs such as the Uganda Land Alliance offer critical legal support and guidance, mediation services, and advocacy on securing land tenure in Karamoja.

Establishing a legal, community accepted, and transparent system for land tenure will allow the appropriate parties to develop and enforce policies addressing risk and sustainability, including: 1) establishing transparent gazettment and allocation of mining concessions, 2) developing co-management agreements between National Wildlife agencies and communities, and 3) developing clear guidelines for communities to obtain legal land tenure and registration. These policies and land tenure systems will be essential de-incentivizing agricultural investments in non-viable, high-risk areas. It is critical to note that no amount of inputs and knowledge will sufficiently mitigate risks associated with farmers shifting to crop production as their dominant livelihood strategy in low rainfall regions of Karamoja—specifically, outside of the Green Belt—or households in high rainfall areas depending solely on agriculture. Governments and non-governmental organizations (NGOs) that support extension services and input supply chains must be cautious that their interventions do not promote these risky practices, particularly if they result in household indebtedness to input agents. These risks can be reduced through land-use zoning and supporting economic policies, such as limiting agricultural extension services only to those areas legally zoned for such activities. This will reduce natural resource degradation and grazing land, while incentivizing more sustainable livelihoods practices.

Finally, a more sustainable land resource management system provides opportunities to reduce conflict. However, the development process and subsequent resource management policies and regulations must promote communication, collaboration, and input—through formal and informal channels—amongst communities, civil society, government, and the private sector. These new forums could expand efforts to reduce tensions between pastoralists and agro-pastoralists, improving inter-communal relations and conflict management.

¹⁹⁰ Owor et al. (2014).

Capacity #2: Increased Access to Products and Services that Reduce Risk

- **What:** Increased access to services and products which reduce and/or diversify risk to rainfall variability, dry spells, livestock diseases, and pests.
- **Provisioning System:** Government, private sector actors
- **Users:** Farmers, livestock producers
- **Intended Response:** The economic impact of rainfall variability, dry spells, livestock diseases, and pests is reduced, contributing to continued economic growth.
- **Required Transformational Factor:** Functioning market systems, supportive framework for livestock based livelihoods.

There are technologies, information services, and skills which could drastically increase the capacity of communities to prepare for, manage, and recover from shocks and stresses such as rainfall variability, dry spells, livestock diseases, pests, and land degradation. However, neither local markets, nor or governments are providing them. Gaining access to the following tools will help communities develop in the face of a range shocks and stresses identified through the STRESS process.

Livestock and crop extension services can support risk reduction and management—especially by equipping herders and farmers to better utilize technology—against a range of shocks and stresses, including droughts, rainfall variability, crop and livestock diseases, and land degradation. Embedding extension services in local agro-dealers and their agents or linking dealers and agents to Agricultural Extension Workers (AEWs) can promote access to drought resistant and short maturing crops, while empowering farmers to apply improved agronomic practices. Additionally, access to basic risk-reducing technologies (e.g., pesticides, fertilizers, and water storage technologies) would help build resilience to a range of environmentally related shocks and stresses (e.g., rainfall variability, dry spells, and crop pests). It is also essential to link herders and farmers to more robust markets, increasing access to these products and services.

Provision of animal health services—by reducing vulnerability to diseases and pests that have devastated livestock herd populations in recent years—is the most important capacity for building resilience of livestock production. Levine (2010) estimates that a “sustainable herd” that can “support the entire minimum food and cash needs for a household for an entire year” is currently “12-13 cattle and 60-65 shoats,” but simple health and management interventions could reduce this number to 10 cattle and 25 shoats.¹⁹¹ Because basic care and vaccinations can limit mortality and morbidity considerably, it is important to supply community members trained as Community Animal Health Workers (CAHWs) with basic drugs and equipment.

Yet a fully functional livestock health system also requires the presence of private veterinary pharmacies and drug supply chain, and pastoralists must also be willing to pay for these services. The high cost of services, which seem unaffordable to herders; a culture of aid dependency (with NGOs and government supplying free veterinary services and drugs); limited knowledge of CAHWs; and a severe shortage of fully trained veterinary doctors limit the use of livestock health systems in Karamoja. Additionally, Karamoja law

¹⁹¹ Levine, S. (2010). What to do about Karamoja? Rome: FAO.

does not fully recognize CAHWs, and they not belong to an official body of professional service providers. Strengthening and linking CAWHs, pharmacies, and private veterinary service providers will help ensure high quality, sustainable, and affordable livestock health services are available.

Ultimately, the resilience, productivity, and profitability of livestock based livelihoods will hinge on the degree to which development policy provides a supportive framework for livestock-based livelihoods, recently undermined by state policy favoring sedentarism. Introducing a supportive policy and institutional framework for provision of animal health services and domestic and international trade of livestock and crop goods is particularly critical. According to a key informant, the official stance towards livestock has softened at higher levels due to advocacy from civil society partners and tribal leaders. The failure of a number of donor-support agricultural projects may encourage leaders to embrace pastoral livelihoods at least partially. However, researchers are finding that this attitude has not necessarily trickled down to local officials, who continue to insist on interventions aimed at promoting sedentarism and agriculture.

Capacity #3: Increased Access to Financial Services

- **What:** Access to savings mechanisms to support investment in adaptive strategies (including assets) by providing safety nets and loan products.
- **User:** Farmers and livestock owners, particularly woman
- **Provisioning System:** Community and commercial financial service channels, including consumer credit
- **Response:**
 - Households access savings in period immediately after shock to cover key household needs and recover assets, avoiding debt.
 - Households invest in: 1) new assets to diversify income streams, and/or 2) technologies to enhance productivity or reduce risk.
- **Required Transformational Factor:** Reduced constraints on woman engaging in household expenditure decisions and accessing loans for agriculture investments.

Reducing risk to shocks and stresses (e.g., rainfall variability, crop pests, and livestock diseases), requires innovative financial products and services, such as loans in order to invest in adaptive strategies and savings structures to allow for debt-free recovery. These mechanisms are essential to protecting market actors and decreasing perceptions of risk among potential investors. Loans allow households to buffer themselves against a range of shocks by giving them the ability to invest in and plan for the future. They can support income generating activities and small businesses that help accumulate income and assets. Meanwhile, savings can support efforts to recover from damage associated with shocks such as floods, droughts, or loss of livestock to diseases.

At the community level, VSLAs are the primary source of financial services for households in Karamoja. Though specific figures on VSLA members are unavailable, TANGO's (2015) finding that 17% of sample households had taken out a loan in the last 12 months provides a strong indication of coverage, given most VSLAs require households to take out at least one loan per year. All gender and age groups in Nyakwae FGDs listed access to VSLAs as one of the three most important resilience capacities, important particularly

in the face of drought and during times of hunger.¹⁹² According to TANGO (2015), food purchases were the most common use of loans, representing up to 46.7% of loans for households in the sample's middle wealth tercile. Medical expenses followed. Less than 25% of loans were used for production, as business capital, or for school fees.¹⁹³ This suggests that loans are indeed used to absorb shocks and stresses, but less frequently to adapt to them. Since savings are dispensed at the end of the year in most VSLA models, households often need another loan source, especially when facing shocks and stresses. Moreover, with average interest rates of 10%, the use of VLSAs for food purchase may impose an additional burden on struggling households.

VSLAs often include social or welfare funds, which can be accessed during times of need or distress.¹⁹⁴ However, there is limited information on whether social funds are functioning as intended and how households use them, and no FGD participants acknowledged use of these funds, even when asked specifically. Although not explicitly stated by FGD participants, protecting women's savings from male relatives is likely one of the most important roles of VSLAs. Nyakwae women repeatedly emphasized the need to keep money out of the hands of their husbands, who would spend it on alcohol or other non-essentials. TANGO's survey suggests that women make up a greater share of VSLA membership than men, since women are more likely to have taken out a loan from them in the last year. It is worth noting that the poorest households in TANGO's survey had not taken out loans, suggesting they may not be members of VSLAs. Nyakwae FGDs noted that many households were not members of VSLAs, due to lack of capital or negative perception of VSLAS.

TANGO's (2015) survey in Southern Karamoja suggests that as many as 20% of loans taken out by middle tercile wealth households are from SACCOs. Although no members of SACCOs were interviewed during the STRESS process, Mercy Corp views the role of SACCOs as supporting "the ability to save for routine and extraordinary costs (e.g., school fees, medical emergencies) that will build their financial resiliency, as well as obtain credit for income-generation purposes."¹⁹⁵ Constraints to accessing SACCOs include the underrepresentation of women in membership, boards, and committees, and their lack of access to products and services. Due to historical corruption scandals, there is a considerable lack of trust in SACCOs as institutions, limiting growth and membership.

Despite limitations, the strong presence of VSLAs suggests a willingness to save and borrow.¹⁹⁶ A more formalized banking system, which provides equal access to standard and customizable loans and savings products, would likely be successful. These innovative new banking structures need to be gender sensitive, allowing women unprecedented access to capital and preventing greater sensitivity to shocks and stresses. Having access to more robust and inclusive financial services would also provide the level of support required for effective investment in the livelihood products and services discussed in Capacity #2.

¹⁹² Interestingly, this preference was less pronounced in Kotido and Sidok, which may suggest VSLAs are less prevalent in town settings

¹⁹³ BRACED baseline -- note that these figures include uses for all types of loans without disaggregating, although the majority of loans are from VSLAs. It would be useful to know whether the 20% of loans from SACCOs are more likely to be used for production and business capital, or whether the VSLA and SACCO loans are used for similar purposes.

¹⁹⁴ Burns et al. (2013).

¹⁹⁵ Mercy Corps. (2014). Financial Access study. Portland, OR: Mercy Corps.

¹⁹⁶ Geller. (2014).

Capacity #4: Increased Access to Information and Early Warning Systems

- **What:** Access to user-driven information—on weather and climate, including early warning information on disease outbreaks, market prices, and conflict—reducing vulnerability to dry spells and rainfall variability, price shocks, and conflict.
- **Who:** Farmers and livestock owners (especially women), government and community decision-makers
- **Provisioning System:** Government, commercial telecommunications
- **Response:**
 - Timely weather forecasts and climate predictions inform farmer planting decisions and pastoral rangeland usage decisions, increasing yields and income and/or reducing impact of shocks.
 - Strategic investments in absorptive and adaptive strategies for decrease the social, economic, and ecological impacts of shocks and stresses.
- **Required Transformational Factor:** Increased technological capacity and capacity of government and/or private sector to collect, analyze and communicate information to users effectively.

To prepare for, reduce, or avoid risks associated with livestock disease and pests, drought-induced food insecurity, flood, and price shocks, Karamojong communities, households, and individuals need timely access to basic strategies and information. A number of national early warning systems (i.e., Drought Early Warning System—DEWS, the Food Security Early Warning System Network—FEWSNET, and the Conflict Early Warning and Response Mechanism—CEWARN) are operational in Uganda. Though these focus primarily on rainfall, famine, and conflict respectively, a number of organizations have supported the establishment of a livestock disease surveillance system in Karamoja (i.e., a European Commission Humanitarian Aid Office or ECHO funded drought preparedness project implemented by the Institute for International Co-operation and Development or C&D) between 2008 and 2010. These focus on using building capacity of District Veterinary Officers (DVOs) and CAWHs to identify disease, in part through the establishment of a livestock disease monitoring center in Karamoja in 2007. Currently no system is in place to provide regular updates on market prices, forcing communities to make uninformed buying and selling decisions. Investments in important adaptive strategies, such as commercial destocking or investment or crop storage are limited.

Existing systems appear to be reaching communities. A high proportion of STRESS FGD participants in Nyakwae, Kotido, and Sidok described receiving drought early warning information related to rainfall. Households and individuals also reported receiving information regarding livestock diseases from district veterinary services, while flood information participants from Sidok received flood early warnings from Red Cross. In an Agency for Technical Cooperation and Development (ACTED) study (2013), 71% of communities reported being aware of the DEWS, while over 60% reported implementing its recommendations. However, TANGO's 2015 survey in Southern Karamoja suggests these estimates may be inflated, finding that less than 30% of all households in the BRACED project area received rainfall information. In contrast, approximately 40% received information on livestock disease outbreaks. CEWARN is providing conflict alerts to communities. However, better coordination between peace committees and informal councils on the one hand and CEWERU on the other will enable more effective response to natural resource disputes and livestock theft in district border areas

Access to information is also mediated by gender. Men are more likely to own radios, one of the primary means of information transmission. Women thus rely more heavily on their social networks, describing that they normally hear about rainfall forecasts from friends. Older women in Sidok said that they receive only traditional forecasts and early warnings (i.e., from elders). Therefore, it is critical that women, men, boys and girls receive effectively targeted information, including early warning information, equally.

While transmission of information is a critical first step, its efficacy depends on how communities understand and utilize the information. Communities must perceive warnings to be reliable, understand their inherent uncertainties, and take appropriate action based on information. While there is growing acceptance of meteorological forecasts as compared to traditional EWSs (i.e., forecasts issued by elders), misleading forecasts (e.g., forecasts of early El Niño rainfall in 2015) may have damaged the credibility of these warnings. Warnings must accurately illustrate the probabilistic nature of forecasts and projections, and avoid overly prescriptive messaging. To increase access and use of information for decision-making, government, the private sector, and other actors also need to provide information that is user-driven. It is essential to increase the capacity of these actors to collect, analyze, and communicate information aligned needs of potential users.

Early warning and market price information supports investments in planning and implementation of appropriate adaptation actions. For example, at the community level, actions include early preparation of gardens or clearing (i.e., for rainfall prediction), purchase of garden tools, sharing information with friends, reduction of food wastage, cereal stocking, and planning for travel to secure food and cash during dry season. Support from DMCs at the district and sub-county levels strengthen these investments.

Capacity #5: Improved Mechanisms for Disaster Risk Management and Response

- **What:** Mechanisms in place for community and local government entities to manage and respond to acute disasters in order to limit loss of life and support quick recovery.
- **User:** All community and governance entities
- **Provisioning systems:** Community governance groups, government, international aid
- **Response:**
 - DMCs mobilize in response to EWS triggers and execute plans for collective action to increase survival and distribution of emergency food aid.
 - Food aid at local, regional, and/or national storage made available in response to EWS, and international aid coordinated as needed through district and community systems.
 - Cash transfers from government and/or foreign aid systems target and are received by households.
- **Required Transformational Factor:** Increased capacity of government to prepare for and manage disasters, including supporting community level DRM efforts.

To reduce casualties, manage resources effectively, and ensure a quick economic recovery, it is essential that communities and governments are prepared when disaster strikes. DMCs must be able to respond effectively to EWS triggers and execute plans for collective action to increase survival and distribution of

emergency food aid. At the district and sub-county level, DMCs can play an important role in supporting communities utilize EWS information effectively. Under the National Policy for Disaster Preparedness and Management, DMCs should be present and active at district and village levels. District Management Technical Committees are responsible for assessment and planning for local hazard and risks, developing district level preparedness plans, and supporting other key institutions in integrating DRM into their own planning. At the village level, committees are tasked with assessing risk and developing contingency plans, supporting the intervention implementation, and community mobilization. Committees vary in their level of functionality and capacity. Most district committees do have preparedness and contingency plans, but are poorly resourced and implementation is limited with some almost entirely non-functional.

NGOs programs have in some cases helped to strengthen village level committees, particularly through Community-based Disaster Risk Management approaches and trainings. One key informant argued that development actors go through DRM committees for all programming (e.g., natural resource management, agronomic training) because these officially recognized entities should be strengthened and could serve a variety of development functions at village levels.¹⁹⁷

Food aid at local, regional, and/or national storage should be made available in response to early warning systems and international aid coordinated as needed through district and community systems. Access to emergency food support from humanitarian agencies, government, or family and friends serves as a basic absorptive capacity. TANGO (2015) found that 28.4% of surveyed households reported receiving food aid from an NGO; 14.4% reported receiving aid from government, and 36.6% of households participated in food for cash or food for work programming. There is some concern that food for cash or work programs may have the “unintended consequences of drawing farmers away from planting their own gardens, and taxing already depleted levels of physical energy among participants.”¹⁹⁸ Thus this absorptive capacity may undermine a longer term adaptive one. Overall, households in the TANGO survey were likely to receive food or cash from family members, demonstrating the critical contribution of bonding social capital as an absorptive capacity.

Food storage is an important strategy for buffering droughts and dry spells. Households in Nyakwae district confirmed this, describing budgeting grain for different purposes over the dry season. However, stocks appear insufficient to see most households through lean seasons following poor harvest years. There may be several contributing factors, including insufficient harvests and poor storage facilities. WFP (2013) reports that households are more likely to sell grains post-harvest than to store them, due to “lack of proper storage facilities and limited access to credit and sources of income.” One key informant described that the cropping of red sorghum, a valuable commodity used for brewing beer outside the region, also discouraged better stocking behavior.¹⁹⁹ This has not been validated elsewhere, but merits further investigation.

Capacity #6: Increased Access to Water Management and WASH Services

- **What:** Water management strategies and WASH services reduce the risk of transmittable diseases and decrease vulnerability to dry spells and rainfall variability.
- **Provisioning Service:** Government, private sector actors

¹⁹⁷ Key informant, GIZ

¹⁹⁸ (2016). Karamoja Partners Open Group Meeting.

¹⁹⁹ USAID. (2014). Baseline study for Title II development food programs in Uganda. (Pg. 31). Washington, DC: USAID.,

- **User:** Communities, farmers
- **Response:**
 - The development of water management arrangements reduces natural resource based conflict .
 - Strategic management of water resources—for various needs and purposes—reduces the impact of rainfall variability and dry spells, resulting in greater water access and availability.
 - Increased access to clean and healthy water for domestic uses reduces disease transmission.
- **Required Transformational Factor:** Enhancing the capacity of existing water and rangeland management institutions across scales.

Functioning community water management mechanisms—such as linked district and watershed management systems—will be essential to increasing access to quality water, reducing the impact of rainfall variability and heath disturbances. Governance of water systems at the district and county levels needs to be accountable and transparent, balancing the needs of various users for productive means. Such governance mechanisms will support community-scale efforts to increase: 1) utilization of sanitation in urban and rural areas through enforcement of by-laws focused on good sanitation practice, and 2) water storage technologies for use during dry periods.

Basic WASH facilities and strategies are essential for reducing transmission of water and vector born diseases, particularly following heavy rains. FGD participants in Kotido highlighted latrine construction as the most important capacity for mitigating the risk of epidemics. Because boreholes supply the majority of domestic water consumption, their construction must be better coordinated among multiple actors to ensure more optimum distribution based on population density and groundwater availability. In collaboration with civil society partners, district water offices need to lead the planning and construction of boreholes. Maintenance of these resources also requires promoting user-fee collection, accountability, and effectiveness of Village Water Management Boards; increasing the capacity of local mechanics association; and strengthening local markets for spare parts. The creation of water utilities has also proven effective increasing borehole functionality and consistent availability of safe water.

At the community level, diversification of water sources mitigates water stress for households and pastoralists, helping to assure water access for cattle and household consumption during dry periods. Currently, households rely primarily on distant boreholes that are insufficient in numbers and often in disrepair, or on water from traditional ponds that are shared by livestock and thus are frequently contaminated. Boreholes with manual back-up operating systems will continue to be necessary for communities, as a fail-safe strategy.

One strong diversification strategy is rainwater capture and storage. According to the International Union on the Conservation of Nature (IUCN) et al. (2015a and b), rainwater supply exceeds demand in both Lokok and Lokere catchments.²⁰⁰ Water filters would allow households to safely access drinking water from traditional ponds at a low cost, if technology were available on the Karamoja markets. Roof water harvesting may be possible in urban areas where roofs are tin or tile rather than thatched. On a larger scale, expansion of spatially distributed capture and storage infrastructure like valley tanks and dams can contribute to water security through capture and storage of Karamoja's considerable seasonal rainfall. The draft Karamoja

²⁰⁰ IUCN and FAO. (2015a and b).

Integrated Development Plan includes a variety of infrastructure investments to support additional water supply. Construction of additional water points will also reduce the ecological burden on areas surrounding water points, which are heavily affected by overcrowding and overgrazing.

Access and utilization of improved sanitation requires both institutional support and behavior change. Communities must develop positive attitudes and behaviors around use of latrines, despite prevailing practices of open defecation. Community-led total sanitation (CLTS) has been successful in triggering a sense of discomfort with open defecation among community members and mobilizing communities for collective action around building, maintaining, and utilizing latrines. Evidence from STRESS FGDs suggests that urban-rural migration may also contribute to transmission of knowledge and behavior change around sanitation.

Sanitation and waste management will be particularly important for ensuring healthy urban centers, as they continue to grow. Enforcement of by-laws on good sanitation practice in Kaabong have helped ensure that over 90% of the population has access to latrines. Similar laws (now in effect in Kotido) must be enforced elsewhere as well. Stites et al. (2014) found that only 43% of residents surveyed in Kotido and 50% in Abim had access to latrines. However, urban FGD participants in STRESS highlighted latrine construction as the most important capacity for mitigating the risk of epidemics, demonstrating a high level of demand and awareness.

Productive natural resource management systems are also an essential capacity for mitigating the impact of or reversing trends associated with rainfall variability, dry spells, and land degradation. Challenges related to water stress and land degradation are interlinked, with practices like deforestation, bush burning, and vegetation clearing, exacerbating water run-off, soil degradation, and erosion. For farmers and pastoralists, water management can also mitigate the impact of drought and dry spells by helping ensure the supply and availability of water for livestock and small-scale irrigation, preserving pasture for grazing, and reducing the impact of flooding.

However to be effective community water management strategies must be linked to district and national level water management mechanisms and be supported by national level policies and investments. These strategies will require enhancing the capacity of existing water and rangeland management institutions. Currently, the absence of: 1) effective management institutions, and 2) district level budget for construction, maintenance, and operations of water infrastructure represent major barriers for the optimal utilization of water infrastructure. At a village level, this means supporting village water management committees to collect and manage funds and link with village mechanics, while providing access to spare parts through market systems. If strengthened, these committees could also support community-based management of water filtration at traditional ponds, as well as boreholes. According to an official from the Ministry of Water and Environment, communities in Amudat already provide a strong example of well-managed water resources and community ownership.

Sustainability of valley tanks and dams will require more fundamental strengthening of local governance systems. This includes devolution of resources for management and maintenance at the district level, which currently have no budget for maintaining this infrastructure, as well as enforcement of by-laws and statutory laws related to environmental conservation.²⁰¹ There is also a need for comprehensive strategies for sub-catchments that address upstream and downstream user needs and provide mechanism for multi-

²⁰¹ IUCN. (2014). Framework for rangeland management. IUCN

stakeholder coordination and ongoing monitoring. The development of catchment management plans and management organizations is already underway for the Lokok and Lokere sub-catchments, under Uganda's Directorate of Water and in collaboration with the German Society for International Cooperation (GIZ) and FAO.²⁰²

²⁰² GIZ. (2015). Watershed management brief. GIZ.

Conclusion

Karamoja is a dynamic place, recovering from years of conflict and insecure economic resources. Seemingly on a new trajectory, the region is seeing significant progress, new economic opportunities, and productive social changes. Yet, significant steps must be taken to ensure the positive effect of this work is sustainable long-term and distributed equitably.

Mercy Corps and its development partners and beneficiaries envision a future for Karamoja characterized by empowerment of its citizens, who are well equipped to navigate the shifting dynamics of markets, livelihood opportunities, and governance institutions deliberately. This future is one in which women have equal decision-making and ownership rights as men; peace and security prevails through coordinated, effective and accountable institutions (both formal and traditional); in which populations are increasingly educated and able to take advantage of new economic opportunities inside and outside of Karamoja; in which access to key natural resources like land is distributed equitably through transparent legal processes; and in which healthy communities value, demand, and have access to quality services and a healthy environment.

However, this report illustrates that a number of shocks and stresses seriously compromise the ability of communities, state, and non-state actors to meet these development objectives sustainably in Karamoja. To prepare for, manage, and quickly recover from the impacts of these disturbances, development strategies must also incorporate prioritized resilience capacities. These include: (a) reducing the extent and occurrence of resource degradation and resource conflict through strengthened natural resource management structures and processes; (b) reducing and diversifying risk to rainfall variability, dry spells, livestock diseases and crop pests through increased access to livelihood-supporting services and products; (c) increasing access to financial services, including loans and savings, to support investment in services and assets which reduce risk and support debt-free recovery from disturbances; (d) increasing access to information and early warning systems in order to inform strategies for reducing risk to dry spells and rainfall variability, price shocks, and diseases outbreaks; (e) strengthening and expanding government structures and processes and community's efforts to prepare for and respond to acute natural disasters in order to limit losses and support quick recovery; and (f) strengthening water management capacity to reduce the impacts of rainfall variability and dry spells, and supporting WASH efforts to reduce disease transmission.

Like the development vision presented in this report, increasing resilience in Karamoja is not a goal that can be achieved by a single institution. It requires a shared platform and vision, strong partnerships, and the strategic resource investment of a number local, national, and international development actors in Karamoja. For Mercy Corps, the STRESS process represents just the beginning of a strategic effort to establish this platform and engage in partnerships to ensure Karamoja has the opportunity to attain a sustainable, resilient future.

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About Mercy Corps

Mercy Corps is a leading global organization powered by the belief that a better world is possible. In disaster, in hardship, in more than 40 countries around the world, we partner to put bold solutions into action — helping people triumph over adversity and build stronger communities from within. Now, and for the future.



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Annex A: Resilience Capacity Summary Table

#	What	User	Provisioning System	Response	Required Transformational Factor
1	Increased ability to reduce resource degradation and conflict through equitable and inclusive resource management, including planning, developing policies, directing resources more strategically.	Gov't, CLAs	Government ministries, CLAs, farmers, and livestock grazers	<p>Through greater ownership and more sustainable resource investments, communities reduce natural resource degradation.</p> <p>By divesting in unsustainable and destructive agriculture practices and facilitating land management between users across scales, the appropriate actors are able to reduce natural resource degradation.</p> <p>The creation and use of a transparent land tenure system reduces conflict over natural resources—even as land users diversify and water resources become more variable and inaccessible.</p>	The creation of a clear land tenure system where ownership is understood and can be clearly confirmed, communicated, and enforced.
2	Increased access to services and products which reduce and/or diversify risk to rainfall variability, dry spells, livestock diseases, and pests.	Gov't, private sector actors	Farmers, livestock producers	The economic impact of rainfall variability, dry spells, livestock diseases, and pests is reduced, contributing to continued economic growth.	Functioning market systems, supportive framework for livestock based livelihoods.
3	Access to savings mechanisms to support investment in adaptive strategies (including assets) by providing safety nets and loan products.	Farmers, livestock owners, esp. woman	Community and commercial financial service channels, including consumer credit	<p>Households access savings in period immediately after shock to cover key household needs and recover assets avoiding debt.</p> <p>Households invest in new assets to diversify income streams and / or technologies to enhance productivity or reduce risk.</p>	Reduced constraints on woman engaging in household expenditure decisions and accessing loans for agriculture investments.
4	Access to user-driven information—on weather and climate, including early warning information on disease outbreaks, market prices, and conflict—reducing vulnerability to dry spells and rainfall variability, price shocks, and conflict.	Farmers, livestock owners, esp. women, government and community decision-makers	Government, commercial telecommunications	<p>Timely weather forecasts and climate predictions inform farmer planting decisions and pastoral rangeland usage decisions, increasing yields and income and/or reducing impact of shocks.</p> <p>Strategic investments in absorptive and adaptive strategies for decrease the social, economic, and ecological impacts of shocks and stresses.</p>	Increased technological capacity and capacity of government and/or private sector to collect, analyze and communicate information to users in a way that meets their needs.
5	Mechanisms in place for community	All commun-	Community governance,	DMCs mobilize in response to EWS triggers and execute plans for collective	Increased capacity of government to

	and local government entities to manage and respond to acute disasters in order to limit loss of life and support quick recovery.	ity and governance entities	government, international aid	<p>action to increase survival and distribution of emergency food aid.</p> <p>Food aid at local, regional, and/or national storage made available in response to EWS, and international aid coordinated as needed through district and community systems.</p> <p>Cash transfers from government and/or foreign aid systems target and are received by households.</p>	prepare for and manage disasters, including supporting community disaster risk management level efforts.
6	Water management strategies and WASH services reduce the risk of transmittable diseases and decrease vulnerability to dry spells and rainfall variability.	Communities, farmers	Government, private sector actors	<p>The development of water management arrangements reduces natural resource based conflict.</p> <p>Strategic management of water resources—for various needs and purposes—reduces the impact of rainfall variability and dry spells, resulting in greater water access and availability.</p> <p>Increased access to clean and healthy water for domestic uses reduces disease transmission.</p>	Enhancing capacity of existing water and rangeland management institutions across scales.