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STUDY REPORT

INTERFACE BETWEEN CLIMATE SECURITY, VIOLENT EXTREMISM AND NATURAL RESOURCE-BASED CONFLICTS IN THE ASALS OF KENYA

Independent Development and Learning Group - IDLG Ltd

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EXECUTIVE SUMMARY

Background

Climate change is a major global issue that affects people and the planet in various ways. Low and middle-income countries tend to be hardest hit due to their high reliance on climate-sensitive agricultural economies, limited governance structures, and low institutional capacity to deal with the complex impacts of climate change.

The interface between Climate Security, Violent extremism and Natural Resource-based Conflicts in the Arid and Semi-Arid Lands (ASALs) of Kenya has been observed in sectors such as water resources and grazing lands, food production, infrastructure, urbanization, and governance, among others. Despite the knowledge of this interfacing between climate change and security risks, there is still little contextual analysis of the origins, manifestations, and scope of climate security. To determine whether observed climate change impacts can raise security risks, Act Change Transform (Act!), with the support of the Danish International Development Agency (DANIDA) is implementing the Resilience, Peace, and Stability (RPS) programme that aims to promote resilience, peace, and stability in Kenya. To this end, a study was undertaken to aid in the development of new approaches towards climate change adaptation and mitigation programming in the ASALs in Kenya.

This study aimed to analyse the interface between climate security, violent extremism, and natural resource-based conflicts in the arid and semi-arid lands (ASALs) of Kenya. Special focus was placed on West Pokot, Laikipia, Wajir, and Taita Taveta counties while also bringing in Kisumu and Meru to enrich the information with non-ASAL areas. The research aimed to understand how climatological factors interact with social, political, and economic factors to induce violent conflict, with a focus on climate change-related security risks and their implications for peace and stability.

Study Methodology

The study utilised a mixed-method approach, combining numerical and narrative data. A sample size of 489 respondents was selected using both probability and non-probability sampling techniques. Probability sampling involved simple random sampling of 489 community members, while non-probability sampling used purposive sampling to select key participants from national and county governments, civil society organisations, and environment and security actors.

Data was collected using structured questionnaires, key informant interviews, focus group discussions, and observation schedules. The questionnaire aimed to gather information on the current status of climate change, its manifestations, key actors, existing policies and programs, observed impacts on security, and recommendations for addressing climate-related risks. Focus group discussions and key informant interviews provided further insights into the impacts of climate change on natural resources, communal resources, and peace and stability.

Findings

The ASAL regions of Kenya play a crucial role in supporting wildlife, tourism, livestock rearing, renewable energy potential, and cross-border trade. However, these areas are experiencing serious climate change effects. These include prolonged droughts, intense floods, unpredictable rainfall, and reduced resources, leading to increased competition and conflicts over limited resources.

The predominant economic activities in the ASALs are pastoralism, farming, and trading. Climate change, however, has significantly impacted these activities. This has led to decreased livestock numbers, crop failures, unemployment, and disruptions in trading activities; 80.7% of the household respondents indicated that crop production actually decreased over the previous 5 years. Climate change has also brought about water scarcity which has resulted in conflicts due to competition over limited water sources.

The ASALs support a significant amount of wildlife, but their potential for tourism remains largely unexploited due to insecurity and poor connectivity.

Due to climate change, the ASAL regions have experienced prolonged droughts, unpredictable weather patterns, new pest outbreaks, reduced vegetation regenerative capacity, disappearance of indigenous species, and frequent disease outbreaks. Such manifestations, including decreased food productivity and livestock losses, have significant socioeconomic impacts on the community, affecting peace and security.

Competition over natural resources, unemployment, drug abuse, small arms proliferation, political incitement, unregulated benefit sharing, administrative boundary disputes, and socio-economic factors, like illiteracy and clan conflicts, contribute to conflicts and violent extremism.

The report identifies two main pathways linking climate change impacts to conflicts and violent extremism in the ASALs:

Pasture scarcity-related conflicts: Prolonged drought leads to declining pastures, migration of pastoralists in search of pasture, tensions with host communities, conflicts between pastoralists and landowners/farmers, and retaliatory conflicts. Livestock losses may result in pastoral dropouts susceptible to recruitment by violent extremist groups.

Conflict over transboundary natural resources: Climate-induced migration to peripheral areas with transboundary resources creates tensions and conflicts between communities over forests, rivers, and vegetation.

Recommendations

The report presents several recommendations for addressing climate security and conflict-related issues. The recommendations include:

Conflict sensitive programming: Raise awareness and build capacity among stakeholders involved in development programmes, such as county executives, political leaders, and community leaders. This can be achieved through training, manuals/guides, and policy/strategy development.

Integration of livelihood components in peace programmes: Recognise that conflicts often stem from disruptions in livelihoods. Peace programmes should consider climate-resilient livelihood initiatives that cater to the needs of different groups, particularly youth and women.

Equalise development in cross-border projects: Ensure public participation and equitable benefits for communities located in border areas. A model project cited is the PACT project in the Mandera/Somali border which established infrastructure on both sides. The result was better development and interaction between communities.

Ecosystem approach in programming: Address the declining regenerative capacity of rangeland ecosystems, which leads to resource competition and pressure. Restorative efforts should take a holistic approach to mitigate degradation and its impacts.

Conflict management as a cross-cutting issue: Integrate conflict management into programs as a cross-cutting issue similar to environment and gender, allowing for deliberate efforts to prevent and mitigate conflicts, including violent extremism.

Women involvement in climate security programmes: Promote women's active participation in decision-making processes, as they play a significant role in managing conflicts related to climate change. Overcoming patriarchal systems to ensure inclusivity is a crucial step towards having effective climate security programmes.

Resilience enhancement: Develop solutions to enhance resilience to climate change, such as improved water management, sustainable agriculture, and protection of catchment areas.

Develop a climate risk management plan: Create a plan to identify and prioritise actions that reduce the impact of climate change in the county. This plan will guide decision-making processes and resource allocation.

Youth-centred programmes: Recognise the susceptibility of youth to recruitment into violent extremism and their involvement in resource-based conflicts. Climate security programmes should target youth by providing initiatives and interventions tailored to their needs.

Participatory Natural Resource Management: Shift towards increased community participation in resource planning, addressing social barriers, and promoting involvement of marginalised groups. Management plans should consider all resource users' needs and interests, informed by accurate data and fostering dialogue and consensus. Additionally, robust management and enforcement frameworks should be in place, including capacity strengthening and sensitisation of relevant government agencies and political entities.

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LIST OF ABBREVIATIONS / ACRONYMNS

ASALs	Arid and Semi-Arid Lands
BMUs	Beach Management Units
CBOs	Community Based Organisations
CFA	Community Forest Association
CSOs	Civil Society Organisations
DANIDA	Danish International Development Agency
FAO	Food and Agriculture Organisation
FCDC	Frontier Counties Development Council
FGD	Focus Group discussion
KFS	Kenya Forest Service
KII	Key Informant Interview
NDMA	National Drought Management Authority
NEMA	National Environment Management Authority
NGO	Non-Governmental Organisation
NSA	Non-State Actor
RPS	Resilience, Peace, and Stability Programme
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNSA	United Nations Security Council
WRA	Water Resource Authority
WRUA	Water Resource User Association

CHAPTER ONE: INTRODUCTION

Background

The role of climate change as a "threat multiplier" cannot be underestimated. However, the causal mechanisms linking the two remain under-researched as there are few studies to describe this cause-and-effect relationship. This also becomes a hindrance to the development of policy interventions that would address the nexus between climate change and security issues. During the Fifth UN Security Council (UNSC) debate on climate-security risks and responses in the summer of 2020, UN Assistant Secretary-General Miroslav Jença commented on the matter. He pointed out that the "failure to consider the growing impacts of climate change will undermine our efforts at conflict prevention, peace-making and sustaining peace, and risk trapping vulnerable countries in a vicious cycle of climate disaster and conflict." While violent conflict has many causes, climate change could exacerbate risks known to lead to insecurity.

Low and middle-income countries tend to be hardest hit due to their high reliance on climate-sensitive agricultural economies, limited governance structures, and low institutional capacity to deal with the complex impacts of climate change. In Africa, rising temperatures and changing weather patterns vary in magnitude and intensity across the region, becoming more severe and frequent. Impacts include extreme weather events such as life and livelihood-threatening heat waves, heavy rains, prolonged droughts, wildfires and floods. In Africa, regions most likely to experience adverse impacts of climate change on security include West Africa and the Sahel, Central Africa and the Horn of Africa.

The impacts of climate change pose cascading risks that go beyond the environment into having a direct impact on people's way of life. Climate-related security risks are seen to occur when climate change is experienced beyond levels where a community can effectively adapt. Some security risks are made more pronounced through food insecurity, poverty, and social, economic, and political inequality. Likewise, the effects of climate change affect other socioeconomic systems that affect labour markets, availability to feed the population and regional and cross-border stability.

The interface between Climate Security, Violent extremism and Natural Resource-based Conflicts in the ASALs of Kenya has been observed in sectors such as water resources and grazing lands, food production, infrastructure, urbanisation, and governance, among others. Despite this knowledge of the interfacing between climate change and security risks, there is still little contextual analysis of the origins, manifestations, and scope of climate security.

This study was thus conceived to conduct an in-depth analysis of the interface between climate security, violent extremism and natural resource-based conflicts to understand how, and under what circumstances, climatological factors interact with social, political, and economic factors to induce violent conflict in the ASALs of Kenya. This analysis will aid in the development of new approaches to climate change adaptation and mitigation programming in conflict-ridden and fragile nations that take into account the multifaceted and interconnected nature of those impacts. In addition, the study will help in identifying gaps and solutions to responding to known climate-related risks and inform the formulation of potential actions and/or project design on climate security risks in select ASAL counties.

Purpose and Objectives of the Study

The purpose of this study was to undertake an in-depth analysis of the interface between climate security, violent extremism and natural resource-based conflicts in the ASALs of Kenya. Specifically, the study focused on:

In-depth analysis of climate change-related security risks and their implications for peace and stability.

Assessment of key existing climate security programmes, policies, and legal frameworks in Kenya.

Mapping of state and non-state stakeholders and actors that are currently programming around climate security, their impacts, challenges, and lessons learned.

Proposing potential high-impact adaptation actions/recommendations that could be incorporated into project design addressing identified climate security risks.

CHAPTER TWO: STUDY METHODOLOGY

Study Approach

This study adopted a participatory approach through interaction and active involvement with/of Act! Kenya personnel, government bodies both national and county, CSOs, community members, environment and security think tanks among others. The consultants engaged with key stakeholders working in the climate and conflict sectors. These included government bodies at national and county levels in charge of climate change, CSOs, community members, and environment and security think tanks among others. They collected the data through key informant interviews, focus group discussions, and community surveys. The approach involved:

- Detailed literature review and desk study of climate security risks and existing intervention programmes across key sectors in Kenya;
- Key informant interviews (43) and focus group interviews (102) with relevant partners, community groups, and expert organisations implementing climate security programmes, both at national level and in specific counties;
- Community survey targeting households (489) in target counties;
- Analysis of findings and generation of a detailed report complete with key conclusions and recommendations report;
- Organising a validation workshop on the draft report findings with identified key partners/ experts/stakeholders in the country and internal staff;
- Integrating feedback on the draft report to produce the final assessment report with practical recommendations and actions that can inform the RPS programme adaptation and response.

Overall Design

This study utilised a mixed-method approach where both numerical and narrative data were collected and analysed. The mixed-method allows multiple data collection approaches to enable in-depth assessment and triangulation of information. County-based enumerators were identified and trained on the use of kobo collect to undertake the community survey.

2.1.2 Sample Size and Sampling Techniques

To draw a representative sample of ASAL counties, five physiological zones were identified. These are North Rift, Upper Eastern, Mt. Kenya, Coastal and the Lake Region. From the zones, six counties were sampled (Table 2-1)

Table 2-1: Classification of the targeted counties

Physiological Zone	Sampled County	Population (N)	Calculated Sample Size (n)	Sample collected
North Rift 1	Laikipia	518,560	46	60
North Rift 2	West Pokot	621,241	53	56
Upper Eastern	Wajir	781,263	69	91
Mt. Kenya	Meru	1,546,000	136	150
Coastal	Taita Taveta	340,671	40	60
Lake Region	Kisumu	610,082	54	72
TOTAL		4,417,817	399	489

Yamane sampling formula was used to draw a total sample of 399 from the total population in all the six (6 counties).

$$n = \frac{N}{1+N\,(e)^2}$$

Where: n = sample size, N = population size, e = sampling error/precision error (0.05).

The proposed sample size of 399 was then proportionately allocated to each county.

Both probability and non-probability sampling designs were used.

Probability Sampling Designs: Simple random sampling design was employed to select 489 community members who participated in the household survey.

Non-probability Sampling Design: Purposive sampling was used to select the key participants in the national and county government, CSOs, environment and security actors.

2.1.3 Data Collection Procedure

Primary data was collected in the 6 sampled counties using a structured questionnaire, KII, FGD guide and an observation schedule. Collection of data was aimed at establishing knowledge on the contextual climate-related security risks in the ASAL counties. This was done with a view to identifying gaps and suggesting solutions for responding to identified climate-related risks in these counties.

Data collection aimed at answering the following questions:

- What is the current status of climate-change in the county?
- How has climate-change manifested itself in the county?
- Who are the key actors in climate change in the county?
- Which policies/programmes are in place to address climate change in the county?
- What are the observed impacts of climate change on security?
- What are the key recommendations for responding to identified climate-related risks?

Focus Group Discussion. Two Focus Group Discussions (FGDs) in each of the six counties targeting community leaders and one that was exclusive with community-based security informants were held. Each FGD group targeted 8 participants. The composition made due regard to gender, youth inclusion, minority clans, pastoralists, farmers and resource user group representatives. The FGD mainly focused on climate change impacts on natural resources, communal resources such as grazing land and the short and long-term effects of these impacts on peace and stability.

Key informant interview guide: Five Key Informant Interviews per county were conducted using an interview guide. The key people interviewed were government officials (at the county and national levels), relevant NSAs, environment and security agencies.

Household survey questionnaire: A semi-structured questionnaire was the main quantitative instrument for the household survey. The questionnaire was developed and administered using Kobo-collect by a group of enumerators to 489 household heads.

Data Quality Control during Data Collection: To ensure quality control during the data collection exercises, the following strategies were employed:

- Comprehensive training of enumerators to ensure consistency in their protocols and interpretation of questions;
- Piloting the instruments with respondents that have similar characteristics with the identified sample of the study. The pilot sample was not included in the final sample for the study;
- Use of Kobo Toolbox with a capacity to take coordinates of the households and reflect the time taken in a household will allow an inbuilt consistency check which would prevent data input errors, such as contradictory answers, unfeasible numeric values, or missing data;
- All field teams had an accompanying supervisor to do a double-check on the data collected, and to monitor enumerator performance in the field;
- 10% of the data were subjected to additional quality checks. This included back-checks of data in the server and providing feedback to enumerators to ensure wrong entries are corrected promptly.

FGD session with community leaders in Kisumu Central Ward

Key Informant Interview at Sikom Peace Network, West Pokot

Community leaders who attended FGD from Mwatate Sub county

FGD at Voi sub county, Taita Taveta

Figure 2-1: KII and FGD sessions

2.1.4 Data Management

Quantitative Data Entry, Cleaning and Analysis: After the data collection exercise, quantitative data were downloaded from the Kobo Collect server every day and exported into analysis software (Statistical Package for Social Scientists-SPSS).

Qualitative Data Entry and Analysis: Content analysis was undertaken, combining the evidence from the desk review and qualitative research. Qualitative findings were used to corroborate quantitative findings by establishing the degree to which these different data sources support or refute each other.

2.1.5 Data Analysis and Interpretation

Quantitative data from kobo collect was analysed using descriptive analysis such as frequencies and cross-tabulations. This enables identification of the baseline figures for outcome and impact indicators for the programme as per the results framework. Qualitative data was analysed using inductive/thematic analysis where the consultants went through all the key informant interviews and focus group discussions reports with an eye for common themes.

2.1.6 Data Presentation and Reporting

Data is presented in numerical, tabular and graphical formats. After analysis, the consultants prepared the first draft report that was presented to the Act! technical team for the first review. Inputs from the first review were used to produce the second draft reports, which Act! team also reviewed. Inputs from second review were incorporated into the third draft, which was presented to all climate change and security stakeholders in a validation workshop. Feedback from the validation workshop was then incorporated into the final report.

CHAPTER THREE: RESULTS AND FINDINGS

Introduction

The Arid and Semi-Arid Lands (ASALs) of Kenya make up to 89% of the country's land, covering 29 counties and a population of about 16 million people (UNDP, 2018). These regions are home to more than 90% of the wildlife that supports the tourism industry, contributing to 12% of Kenya's Gross Domestic Product (GDP). The ASAL regions host 70% of the national livestock herd with an estimated value of Ksh.70 billion (GOK, 2019). Further, they have enormous potential for renewable energy (both solar and wind) and other natural resources and are as well strategically positioned for cross-border trade and social cultural interaction with Ethiopia, Uganda, Tanzania, South Sudan and Somalia.

The ASAL counties comprise of three agroecological zones[1]: Semi-arid (IV), Arid (V) and Very Arid (VI). The semi-arid zone occupies an elevation of between 900-1800 meters. They experience rainfall of between 500-1000mm. It covers vast parts of Laikipia, Machakos and parts of the central and southern Coast region. It is most significant for agricultural cultivation and livestock production. The arid zone experiences rainfall of between 300-600mm. It mainly covers northern Baringo, Turkana, lower Makueni and vast parts of the North Eastern region. The predominant economic activities are pastoralism and agropastoralism. The arid zone is the driest part of the country with an annual rainfall of between 200-400mm. It covers Marsabit, Turkana, Mandera and Wajir counties. Pastoralism is the predominant activity in this ecological zone.

Over the years, the ASAL regions have continued to experience climatic changes that are evident through prolonged droughts, intense floods, unpredictable rainfall and reduced amounts of rainfall. These conditions have reduced the regenerative capacity of natural resources such as water, vegetation and forest, among others. As a result, there is increased competition over the limited resources leading to natural resource-based conflicts. The nature of conflicts around natural resources maybe directly attributed to resource scarcity but could also be existing tensions that are heightened by these prevailing conditions. It is therefore notable that climate change is significantly linked to natural resource-based conflicts.

Overview of Climate Security Literature

Pearson & Newman (2019) assessed how climate change adaptation can help counter the increased risk of violent conflict that is associated with climatic changes[2]. A vulnerability model was used to analyse the various factors that mediate the impact of climatic variables on a given agricultural community and the risk for violent conflict occurring.

1 An Agroecological Zone is a land resource mapping unit, defined in terms of climate, landform and soils, and/or land cover, and having a specific range of potentials and constraints for land use (FAO, 1996)

2 Pearson, D., Newman, P. (2019). Climate security and a vulnerability model for conflict prevention: a systematic literature review focusing on African agriculture. Sustain Earth 2, 2 https://doi.org/10.1186/s42055-019-0009-6

The results indicated that the major vulnerability factors included: low levels of economic growth, weak governance system, low levels of development, high population, recent tension and conflicts. Policy makers and state institutions have a significant role to play in increasing the adaptive capacity of communities to adapt to climate change. These can include education and climate change awareness, increasing the economic development of rural and isolated areas in order to broaden the number of alternative livelihoods available hence increasing market access.

UNDP (2020) analysis of climate security indicated that climate change has a direct influence on natural resource-based conflicts on one hand while on the other hand it stands as a risk multiplier[3]. It also provides a potent ground for violent extremist groups to flourish and extend their reach particularly where governance and institutions are weak and unresponsive. In view of this, measures to address climate security should adopt an integrated approach that will seek to reduce vulnerability, increase human security and strengthen climate-resilient livelihoods. It is also critical that the distinct needs of different groups particularly those of women and youths are considered. In addition, recovery, stabilisation and resilience programmes should adopt a regional approach vis a vie a local administrative unit considering that climate change impacts cut across administrative boundaries.

Sekiyama (2022) recognise that climate change increases the risk of conflict. This not only due to direct threats from extreme weather events and natural disasters, but also indirectly through things like shortages of water and other resources, outbreaks of climate migration, disruptions in food production, economic and social disturbances, and geopolitical changes[4]. As a result, there is a likely escalation of tensions caused by climate emigrants, conflicts over loss of territories, conflicts caused by water shortage and instability caused by heavy rain and floods. This calls for measures to lower climate security risks such as climate change mitigation, vulnerability reduction, and policy dialogue more so at a regional level.

UNEP (2022) identifies four climate security pathways[5] including: climate change impacts change access to and availability of natural resources; climate change contributes to food insecurity; climate change undermines livelihoods and can fuel criminality; climate-related stresses can fuel displacement and affect migration; climate shocks could undermine an already weak social contract and climate change responses can instigate conflicts. The study warns against underestimating the scale and scope of climate-fragility risks. For instance, violent conflict is often defined by a certain threshold of people killed without considering latent fragility risks, such as increased civil unrest, criminality, intercommunal tensions, or diminishing trust in governments.

Sweijs et al (2022) established the need to draw structural patterns of climate related conflicts so as to design targeted interventions[6]. Their study identified seven climate related conflict pathways in different geographical regions.

3 UNDP (2020) The climate security nexus and the prevention of violent extremism: Working at the intersection of major development challenge

4 Sekiyama (2022) Climate Security and Its Implications for East Asia. Anthropogenic Climate Change: Social Science Perspectives

5 UNEP (2022) Reimagining the Human -Environment Relationship: Why Climate Change Matters for Human Security

6 Tim Sweijs, Marleen de Haan, Hugo van Manen (2022) Unpacking the Climate Security Nexus Seven Pathologies Linking Climate Change to Violent Conflict. Hague Centre for Strategic Studies

Table 3-1: Conflict Pathways

Conflict Pathways	Causes and mediating factors
a) Climate change-related resource scarcity leads to conflict between pastoralist and sedentary communities	Pasture scarcity forces pastoralist groups to alter their transhumance routes. This precipitates resource competition between groups, infringes on traditional customary regulations, and increases conflict risk.
b) Climate change-related resource scarcity leads to larger-scale inter-communal violence	Climate change-induced scarcity of water, food, and land resources, in combination with social, political, geographic, and economic variables, can trigger inter-communal tensions.
c) Climate change precipitates (internal) migration, leading to social unrest	Climate change can lead to migration which can spark social unrest by increasing resource competition and exacerbating feelings of relative deprivation, as well as the severity of inter-cultural clashes.
d) Climate change-related social unrest empowers nonstate armed groups	Climate change interacts with state fragility and contributes to livelihood deterioration, creating fertile ground for the emergence and expansion of non-state armed groups (NSAGs).
e) Policies aimed at mitigating the effects of climate change have adverse effects	Climate change policies can trigger political exploitation and marginalisation of groups, aggravating existing grievances and tensions.
f) Climate change-related social unrest precipitates large-scale political movements, provoking a government crackdown	Climate hazards can provoke a window of opportunity for violent and non-violent opposition to further undermine authorities. Conflict arises as a result of the state's (violent) crackdown on dissent.
g) Disputes over transboundary resources cascade into interstate conflict	Climate change can foster tensions over transboundary resources e.g., water scarcity raises tensions over transboundary freshwater resources

Situational Analysis for Kenyan ASAL Counties

3.1.2 Economic Activities

The predominant economic activities in the ASALs are pastoralism (30.26%), crop farming (22.29) and trading (21.88%) (Table 3-2). Others include employment and mining.

Table 3-2: Economic Activities of the respondents

		Primary Activity		Secondary Activity		
#	Activity	Frequency	%	Frequency	%	Annual Income
1	Business	107	21.88	117	23.92	43,328/-
2	Pastoralism	148	30.26	54	11.04	50,507/-
3	Farming	109	22.29	135	27.60	62,269/-
4	Mining	8	1.63	4	0.82	-
5	Employment	55	11.24	51	10.42	53,520/-

Most pastoralists practise the extensive pastoralism system involving large stocks of livestock. Majority of the respondents rear indigenous/local cattle (32.11%), indigenous sheep/goats (31.49%) and indigenous/local poultry (18.81%). However, it is notable that the stock herd has continued to decrease in the last five years majorly due to extended drought conditions causing livestock death (Table 3-3).

Table 3-3: Causes of decline in stock herd

#	Reasons for the Decrease	Frequency	%
1	Prolonged drought causing livestock death	238	48.67
2	Livestock diseases	128	26.18
3	Cattle Rustling	72	14.72
4	Sold for household needs	137	28.02

The average farming area among smallholder farmers is 3.29 acres. The three main food crops grown are maize (47.03%), beans (33.13%) and vegetables (30.27%). However, 80.16% stated that the trend in food production had decreased over the last 5 years mainly due to unpredictable weather patterns, erratic rainfall and prolonged drought periods (Table 3-4). In response to this, some farmers have taken climate adaptation measures including irrigated farming (28.42%) and water conservation practices such as mulching (29.4%).

Table 3-4: Causes of decline in farm productivity

#	Reasons for the Decrease	Frequency	%
1	Prolonged dry season	371	75.86
2	Less support from government/NGO	110	22.49
3	Floods destroying crops	59	12.06
4	Pests destroying crops	104	21,27
5	Wildlife destroying crops	72	14.72

The impact of climate change on economic activities in ASALs is significant. Most of the livelihood are reliant on predictable weather patterns hence the vulnerability to climate change. Prolonged drought conditions such as what most parts of the country experienced in the last 5 seasons led to massive loss of livestock, crop failure and reduction in forest product yields[7]. Additionally, agricultural losses also occurred due to an increased surgency of pest and diseases which the community attributes to climate variability. In areas such as Meru, Laikipia and Isiolo where large scale farming is practised, the prolonged drought led to increased unemployment as many workers were laid off. In other instances, flooding incidences lead to destruction of crops and disruption of livelihoods. Trading activities are also affected by climate change when flooding, which has become increasingly frequent, damages roads hence cutting people off from main markets. In addition, when pastoralists lose their livestock to drought, their purchasing power is reduced which impacts trading activities significantly.

In response to these impacts of climate change, communities are adopting alternative livelihood options so as to diversify their incomes and reduce vulnerability. These include: hay production, ecotourism, charcoal and fuelwood production, sale of forest products such as aloe vera.

Alternative livelihood strategy in Taita Taveta

Following the implementation of a pasture and fodder commercialisation project, farmers and group ranches have started engaging in this enterprise. Mgeno ranch has established a hay barn with a capacity of 20,000 bales of hay. Community conservancies e.g., Lumo Community Conservancy have also taken on the initiative as a way of diversifying their revenue. Small holder farmers have formed groups which sell their hay through a cooperative society, Mungama Cooperative Society. More farmers are joining the cooperative as the hay market continuous to gain vibrancy. However, the smallholder farmers are still yet to make deliberate investments in farming grass. Most rely on the natural regeneration of grass.

7 Interview. Conducted by ACT! May, 2023

3.1.4 Water resources

The ASALs are characterised by water scarcity. The main sources of water are rivers, streams and boreholes. Residents observed that climate changes have exacerbated water shortage leading to intensified competition over the limited source and subsequently water related conflicts. In Wajir County, where there is no surface water, residents noted that most of their boreholes and wells are drying up forcing them to move for longer distances in search of water (Figure 3-1).

In Kisumu County, the impacts of climate change on water resources and security are significant and wide-ranging. It has affected agriculture, water quality, and water availability. Farmers in Kisumu County are heavily reliant on rain-fed agriculture and thus extremely vulnerable to climate change and variability. During an FGD, it was revealed that almost 90% of residents in Kisumu County rely on open water sources. Flooding in some areas like Nyakach and Kano plains, due to variable rainfall patterns and rising lake levels, negatively impacts the quality of water leading to human displacement and learning interruptions. In response, Kisumu County has mainstreamed climate change adaptation and mitigation efforts into the County Integrated Development Plan II for 2018-2022 and in the formulation of Kisumu County Climate Change Policy and Bill. The County's targets address core issues including waste management, greenhouse gas emissions reduction, water security, energy efficiency, and climate change adaptation.

> "I have never bought drinking water but now we have to buy water from boozers at a high cost of Kshs 25000 per 5000 litres. Many people cannot afford this." *Wajir Resident.*

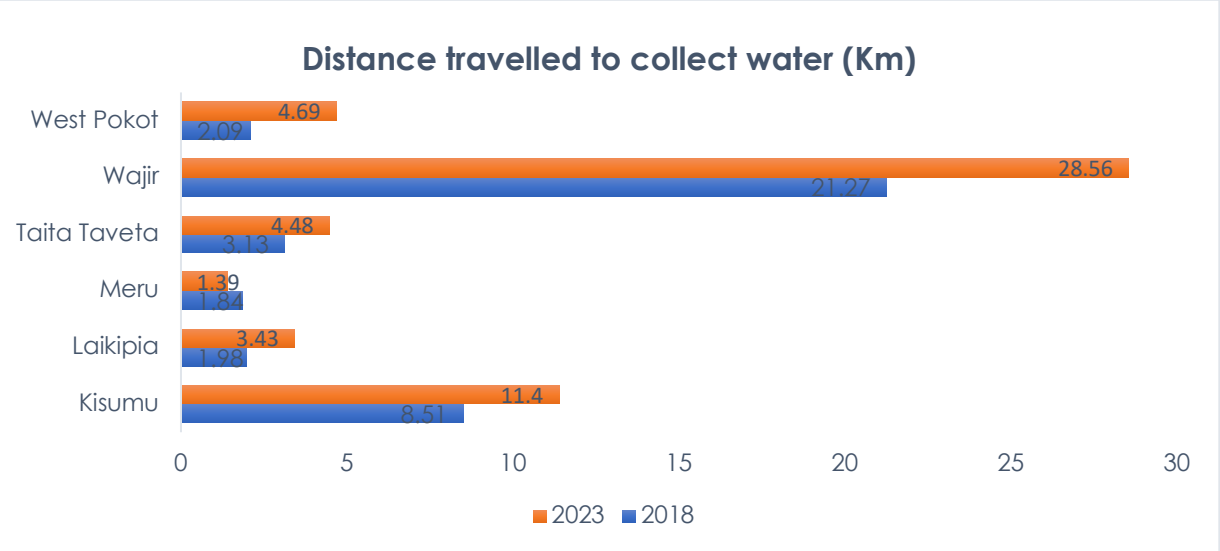

Figure 3-1: Distance travelled to collect water in selected ASAL counties

3.1.5 Wildlife

The ASALs support 90% of the wildlife in Kenya. Despite this endowment, the resource has remained largely unexploited in most of the counties. This is attributed to insecurity and poor connectivity. In Wajir, for instance, the rangelands are spotted with large numbers of wildlife including the rare Somali giraffes. In spite of this, there is only one established community conservancy and no game reserves. If exploited, tourism could provide alternative livelihood options for the community cushioning them from the impacts of unpredictable weather patterns on farming and pastoralism. Community conservancies present a valuable tool that can be used to increase community stewardship, reduce natural resource-based conflicts and provide resilient livelihoods (Ontiri & Robinson, 2015; Gross et al., 2016; Bedelian & Ogutu, 2017). They can create employment for the youths who are the most susceptible to engaging in violent extremism. However, they can also be agents of conflicts where the frameworks do not allow for adequate community participation and equitable benefit sharing mechanisms. This is evident in Laikipia County where there are many conservancies, such as Laikipia Nature conservancy, which residents say are a source of human-wildlife crisis. Animals are known to leave the conservancy and feed on farm crops because the pastoral communities graze in the conservancy and deplete water and pasture meant for the wild animals. According to the FGD participants at Kinamba in Laikipia county, it is common for elephants to break into maize stores and feed on dry maize during seasons of extreme drought.

3.1.6 Forests

Forests support community livelihoods in ASALS by providing products such as herbs, gum arabica, fuelwood and potent areas for bee keeping. These are usually for domestic or commercial use. As a result of the declining land productivity due to climate change, there has been increased forest encroachment as people search of pasture, fertile land for farming and other forest products. Though the Community Forest Associations are charged with the responsibility of ensuring sustainable use and harvesting of forest products, they often lack the capacity to develop, implement and monitor sustainable forest management plans. Uncontrolled forest use often leads to conflicts among different user groups and heightens intra/inter community conflicts.

Table 3-5: Forest resources in selected ASAL counties

County	Forest	Climate change impact	Recommendation
Wajir	No gazetted forest; multiple community range forests exist, gazetted hills	Uncontrolled logging due to increased charcoal and fuelwood trade (necessitated by loss of primary livelihoods-pastoralism/small scale farming)	• Advocate for gazettement of existing community forests • Strengthening of CFAs[8]/ capacity building of the CFAs • Training on sustainable charcoal production • Promotion of priority species-avocados, neem and dates

8 The CFAs in this county are established around tree nurseries since there are no gazetted forests

County	Forest	Climate change impact	Recommendation
Taita Taveta	Taita Hills Forest	Encroachment by farmers	• Strengthening of CFAs and capacity building of the CFAs • Training on sustainable charcoal production
Laikipia	Mokogodo Forest	Forest encroachment by pastoralists in search of pasture	• Control of human activity in the forest through empowering the CFA. • Sensitisation and awareness on forest conservation • Advocacy against forest encroachment
West Pokot	Kamatira Forest Tangasia Forest Communal range forest	Forests and woodlands have been encroached	Creation awareness among the community on the effects of forest encroachment, and reduction of vegetation cover
Meru	Mt. Kenya forest, Meru National Park, Lewa Conservancy	Forest encroachment by herders during dry seasons, and farmers in search of fertile farming land	Encourage sustainable forest management practices to ensure that forests are not overexploited or degraded.
Kisumu	Impala Sanctuary	Degradation of vegetation and loss of suitable habitats for wildlife due to human activities	Foster collaborations and partnerships among local communities, government agencies, non-governmental organisations, and research institutions to enhance conservation

3.1.7 Minerals

Most of the ASALs counties are richly endowed with minerals which could potentially provide climate resilient livelihoods (IGAD, 2013). Artisanal mining is ongoing in these counties. However, it remains highly uncontrolled. This leads to worker exploitation, land dereliction and ownership conflicts. If well regulated, the sector has the potential to create direct and indirect employment and to generate revenue for the county. The former is critical in ensuring youths have economic engagements that reduce their susceptibility for being recruited into criminal gangs and violent extremism.

Table 3-6: Artisanal Mining

County	Minerals
Wajir	Limestone, stones
Taita Taveta	Limestone, coal, gemstones
Meru	Gemstones, stones
Kisumu	Limestone (Rachuonyo), Diatomite (Sumbek area), stones
Laikipia	limestone, granite, clay minerals, mica
West Pokot	Talc, gemstone, limestone, sandstone

3.1.8 Climate change Evidence in ASALs

There are multiple indicators that evidence the occurrence of climate change in the ASALs. These include the directly observable changes such as the recurrent and prolonged droughts and unpredictable weather conditions.

Table 3-7: Household views on climate change evidence

#	Evidence of climate change	Frequency	%
1	Frequent drought	356	72.80
2	Unpredictable weather patterns	294	60.12
3	Drying up of water sources	225	46.01
4	Increased temperatures	207	42.33
5	Significant decrease in farm productivity	186	38.04
6	Frequent floods	54	11.04

Other indicators indirectly attributed to climate change include emergence of new breeds of pests and diseases, reduced vegetation regenerative capacity, disappearance of some indigenous species and frequent disease outbreaks.

"In the recent past we have just been in a cycle of disasters." *Director, Peace & Security Directorate, Wajir County*

"The pasture that regenerates don't take us long after the rainy seasons; averagely 2 months." *Officer, National Drought Management Authority, Taita Taveta County*

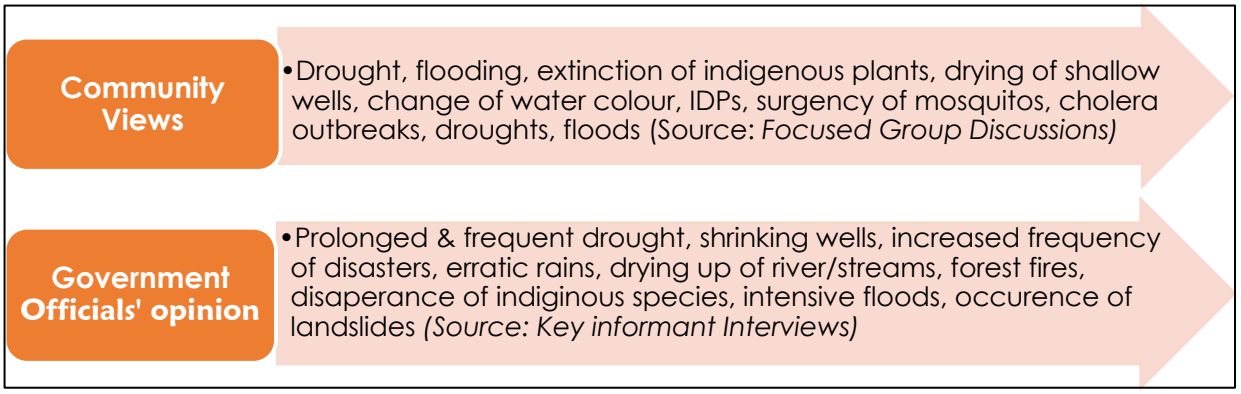

Figure 3-2: Views on effects of climate change

3.1.9 Impacts of climate change in the community

Households indicated that the above-mentioned climate change manifestations bear significant socioeconomic impacts on the community. The results were decreased food productivity and loss of livestock, which subsequently affect peace and security (Figure 3-3.)

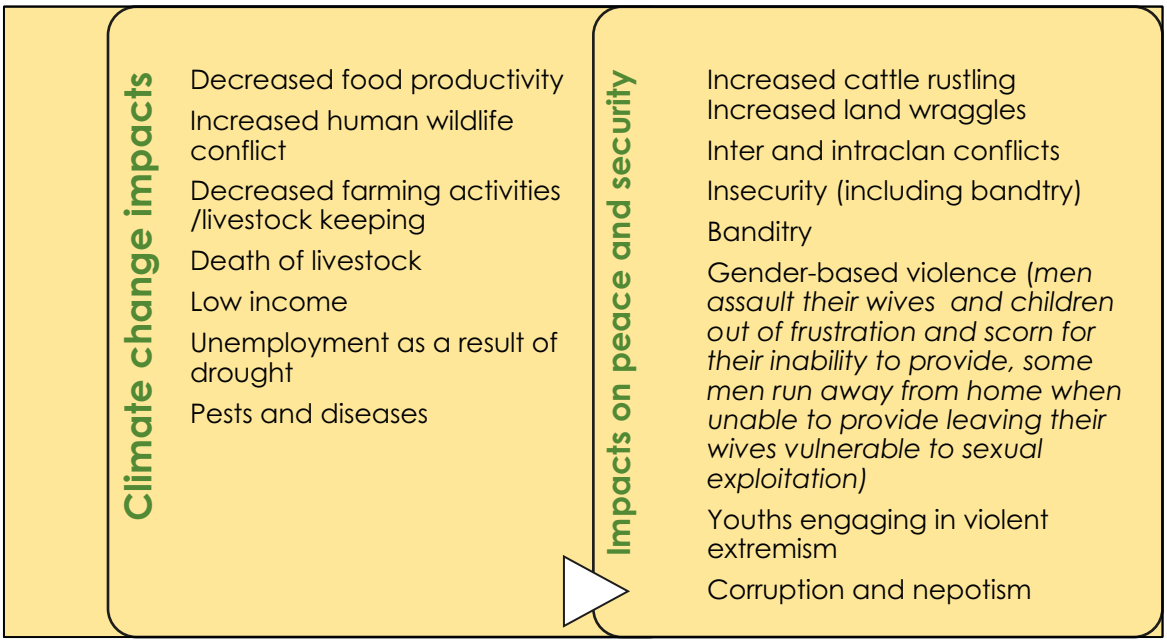

Figure 3-3: Socio economic impacts of climate change and their implication on peace

3.1.10 Drivers of Natural Resource based Conflicts and Violent Extremism

The major causes of Natural Resource Based conflicts in the ASALs include competition over dwindling natural resources (particularly pasture and water), political incitement, unregulated natural resource benefit sharing systems, contestation over administrative boundaries, transboundary resource use and management etc. Violent extremism on the other hand is majorly influenced by unemployment and drug abuse that instigate criminal activities and proliferation of small arms. These drivers are further fuelled by other socio-economic factors such as high illiteracy levels, clannism and insurgency of communities from bordering counties/countries. High level of illiteracy was mentioned as one of the most significant drivers influencing youth involvement in conflicts and violent extremism. According to the household survey, 15.74% of the respondents have never attended school while 18.04% have attained only a basic education level (Figure 3-4). Notably, Wajir and West Pokot have a higher percentage of respondents who have not been to school at 37.7% and 32.5% respectively. Kisumu and Taita Taveta had the lowest at 1.3% and 7.8% respectively. A Report of the Task Force on Peace and Security in Baringo County submitted in 2016 similarly cited high illiteracy levels as one of the major causes of conflict and violence. It reported that high illiteracy is evidenced by low school enrolment, completion and transition rates as most parents prefer that their children take care of their animals or go for early marriages.

According to key informants in peace and security departments, education influences the ability to comprehend the importance of peace. It also offers opportunity to engage in multiple economic activities which ensures continued supply of livelihood even when one or two are disrupted.

Specifically on violent extremism, it is notable that it thrives during wet seasons when water and milk are readily available and the weather is favourable for trekking over large distances through illegal transit routes. Additionally, it is facilitated by lack of infrastructure whereby residents are unable to report suspicious activities.

Also, access to these areas by security agents is difficult. Lack of infrastructure and security agents, particularly in boarder areas, creates an impression of an absence of governance which provides a conducive environment for the advancement of radicalism and banditry.

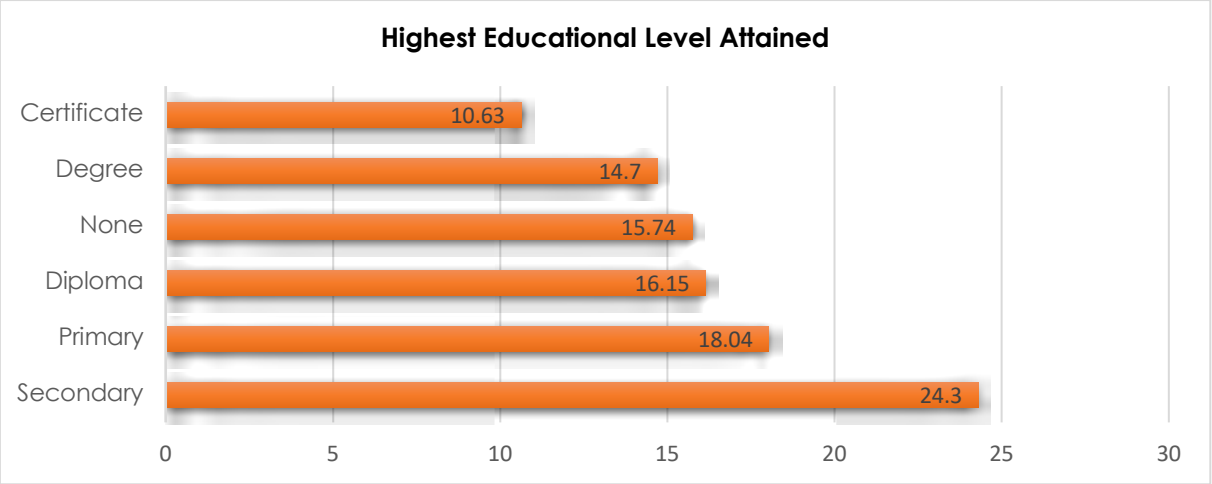

Figure 3-4: Highest Education Level Attained

"The new breed of youths cannot take care of livestock yet they have absconded school. They are semi-illiterate. Even when the government establishes TVETs, these youths don't find learning or gaining technical skills appealing. In this state they are readily available for radicalisation with the promise of huge pay." *Director, Livestock Department, Wajir County.*

"Radicalisation rides on a non-functional government. When people lose trust in the government, they become susceptible to radicalisation." *Deputy County Commissioner, Wajir*

"There are a lot of weapons available in the communities which are used to protect livestock and to conduct livestock raids. This propels conflict to a new dimension of armed conflict leading to loss of lives. The guns come from Sudan, Uganda and Somalia. The government has had continuous disarmament drives in the area but the number of weapons in civilian hands is still high." *West Pokot County*

Climate Security Analysis
Conflict-Cause-effect-Mediating Factor-Recommendation

The climate security analysis presents pathways that link climate change impacts to natural resource-based conflicts. This entails descriptions of a main or direct causal factor (*climate change impact*), its effect on conflicts, the factors that mediate this linkage and the recommendations to address these conflicts. It is worth noting that individual pathways do not occur in a vacuum but interact with each other at different levels.

3.1.11 Pasture scarcity related conflicts

Prolonged drought conditions result in pasture decline in the rangelands where grazing is done. As a result, pastoralists migrate to neighbouring lands in search of pasture. In the process, they cause a strain on existing pastures and water points hence creating tension between the immigrants and host communities. This tension may escalate into conflict that leads to loss of lives and livestock. The conflicts intensify as the affected communities try to retaliate.

> Conflicts are normally instigated by drought which forces the Pokots to go into Turkana, and vice versa, in search of pasture and water for their livestock where they clash. Security personnel have also been victims of this conflict and the country has lost a lot of police officers over the years necessitating the presidential order to deploy the Kenya Defence Forces in the area to bring peace and calm, *West Pokot County*

They may also invade ranches and farms in the host community leading to conflicts between the pastoralists and the landowners or farmers. For instance, in Taita Taveta, a herder was killed by a foreign herder as he tried to prevent him from invading his land. The host community retaliated by killing the foreign herder's livestock. Such tension may escalate into inter or intraclan war. Herders from Isiolo and Laikipia counties often drive their livestock to Meru County in search of pasture during the dry season. The animals usually end up in farmlands and bring the herders in direct conflict with the farming communities.

> In Meru County, the Northern Grazing Zone provides a shared grazing buffer between the farming communities of Meru and the pastoralists from the counties bordering to the North. However, during prolonged dry seasons, the zone becomes inadequate to contain the grazing needs of all livestock and there is usually a spill over into farmlands to the South of the zone. Similar situations are witnessed in other ASAL regions as grazing areas dwindle.

In the event of extreme drought cases, as was experienced in the last 5 seasons, most of the pastoralists eventually lose their livestock. This leads to disruption and loss of a major livelihood activity. The pastoralists may resort to raiding other communities so as to restock. The raided community also retaliates leading to conflicts which are characterised by killings and displacements.

> "Our people attach so much value on livestock. It is a medium of dowry payment. An average dowry requires 50 cows. In a polygamous setting like ours, you need many of those. This is what motivates cattle rustling particularly after a prolonged drought." *Chief, Laikipia County*

Those who lose their entire herds and are unable to restock are loosely referred to as 'pastoral drop outs'. They are known to hang around in towns where some engage in crime such as mugging and drug peddling.

Additionally, it is believed that they become easy targets for recruitment by violent extremist' groups as they are often in dire need of money to restock their herds. Youthful pastoral drop outs are greater targets of these groups since they are energetic enough to fight, supply food and water to recruits and to provide security information.

In other instances, the pastoralists may choose to settle in neighbouring areas where there is abundant pasture. The host communities may become agitated over immigrant influx leading to tension which may escalate into conflicts. Pkalya (2023) through a similar lens on causes of natural resource-based reported that conflicts occur where herders defy the seasonal migration pattern by establishing permanent settlements in areas that were traditionally classified as dry season grazing reserves instead of returning home after the dry period. He cited the case of the Pokot who moved with their livestock to Turkana a year ago in search of pasture during the drought period but have since remained there even after the rains and went on to establish permanent settlements. A situation that has instigated conflict in the area.

> "At the onset of the drought that occurred in the last season, most pastoralists in Wajir moved to Wajir South where there was pasture. Months after the rains came, the immigrants have not returned home. There is now tension as the host community (ogaden) claims that the immigrants (dogodia) have refused to leave. The host community has now expressed fear and concern that these immigrants might settle there permanently leading to strain on resources. The issue is currently being mediated by the council of elders." *Director, Peace and Security, Wajir County*

3.1.12 Conflict over transboundary natural resources

Pasture decline due to climatic changes necessitates migration to less affected areas, in spite of administrative and political (electoral) boundaries. These are peripheral areas, which in most cases have transboundary resources such as forests, rivers and vegetation. These areas then become points of interest to communities on either side. This results in heightened competition and tensions due to conflicting procedures in the use of the resource. This is further aggravated by lack of transboundary resource governance frameworks. In Pokot County, there has been a long disagreement about the Turkana-Pokot border. This area is richly endowed with water resources and pasture. The two communities contest that either side has encroached on their land. Politicians also use this narrative to rally their population and charge them against each other.

The conflicts and governance vacuum in this border areas allows for establishment of illegal transit routes for human trafficking, small arms and drug trafficking, which then propel violence. Proponents of violent extremism are known to be opportunists who ride on the chronic failure of the security sector, as well as the instrumentalisation of ethnic violence'[9]

9 'ohwerder B.(2015) Conflict analysis of Kenya. Birmingham, UK: GSDRC, University of Birmingham.

According to government officials, there is need for a framework to manage transboundary resources. Such a framework should harmonize conservation and grazing procedures of the bordering communities.

Wajir (Adado/Isiolo (Merti) Border is rich in pasture supported by Ewaso Nyiro river and a high-water table. During drought season, herders from Isiolo and Wajir aggregate here. Each of the community lays claim to the resource leading to tension. This is fuelled by lack of a clear boundary. In December, 2022 fifty-two people were killed in this area due to conflict between the two communities.

3.1.13 Human Wildlife Conflicts

Prolonged drought conditions and loss of livelihood cause increased incidences of poaching. When members of the community are arrested, fined and in some instances killed by KWS officers, tension develops and, in some instances, it leads to deadly conflicts.

On 3rd May, 2023 two young men in Wajir County were killed by KWS officers while poaching. This led to unrest in the town as the community demonstrated against the killings. Two other people were killed during the demonstrations. Business came to a standstill for three days following the killings. According to the community leaders who participated in the study FGD, the heightened crime in the county is attributed to loss of livestock following the recent drought.

The human wildlife conflicts are further aggravated by degradation and low vegetation regeneration in the parks/game reserves. This implies that the available stock only lasts for a short period after the rains. The wildlife then moves out of the conservation areas into human settlements in search of pasture and water. As a result, they end up attacking livestock and people. Due to the lengthy and bureaucratic compensation process, the neighbouring communities become apprehensive towards conservation activities. This leads to tension which may, with time, escalate to violence.

In Meru County, the wildlife especially elephants, lions and hyenas have been invading farmlands adjacent to the forests and those found in the wildlife migration corridors. This leads to destruction of crops, livestock and homesteads. Communities then retaliate and kill the wildlife.

In the recent past, there have been numerous cases of loss of human lives due to wild animal attacks, predation of livestock and crop destruction by wild animals in the county. The situation has worsened over time as wildlife dispersal areas and corridors shrink due to encroachment and recurrent drought conditions.

There is need for deliberate effort to rehabilitate the parks through grass reseeding and development of watering points in the park, and more so, along the areas bordering human settlements.

Additionally, communities leaving in these hotspots could be sensitised on sustainable deterrent measures to keep wildlife away from the farms and settlement areas.

In the various wildlife conservancies of Laikipia county, there have been reports of human-wildlife crises as a result of pastoralists grazing in the conservancies, leading to depleted pasture and water for animals. Lions and Leopards were found eating goats in Ereri and Mutirithia, a cheetah was found in Njoguini, and elephants were found eating cabbages, bananas and trees in Karama, Umande, and Njoguini. This led to loss of livestock, crops, and insecurity, especially at night.

The FGD held in Kinamba suggested that electricity, as opposed to solar, should be used to fence the conservancies since the solar panels would be easily vandalised by pastoralists allowing them easy access to the conservancies. Additionally, during instances of low sunlight, solar fences would lack enough power to stop animals from crossing into the farm lands.

In Taita Taveta County, where the protected area covers an estimated 67% of the total land, human wildlife conflict is one of the most pronounced natural resource-based conflicts. In addition to the protected areas, community conservancies have been widely established leaving a relatively small area for human habitation. Residents indicated that the major causes of human wildlife conflict included minimal investment in water infrastructure and reseeding within the parks. Lack of water and pasture are what have caused wildlife to invade water points within settlements and farms. They also cited the issue of laborious compensation procedures, perceived community exclusion in wildlife management and absence of wildlife benefit sharing mechanisms. There were suggestions for a need to develop a framework that would allow for a community-government partnership in wildlife management within the county. The government officials noted that promoting the establishment of community conservancies is one of the low-hanging fruits towards addressing the human wildlife conflict in the county.

Human wildlife conflicts in Kisumu are known to mainly escalate when there is flooding. Increased water levels forces animals, crocodiles and hippopotamus to move from their natural habitat into farms and settlement areas, leading to crop damage and adverse human injury.

Human-Wildlife Conflict Management Project in the Tsavo Ecosystem-Taita Taveta

Realising the need to address the growing human-wildlife conflict crisis, AWF and Save the Elephant through different programmes, have implemented various interventions which have recorded significant success. These include: developing plans to enhance land use compatibility which minimises human wildlife interaction; conducting patrols; innovative fencing (e.g., using small pieces of iron-sheets which rub against each other to create a deterrent noise); beehive fencing; chilies fencing and provision of water infrastructure in the parks and within the community conservancies.

3.1.14 Water Resource based Conflicts

Erratic rainfall, decreased precipitation and increased drought frequency leads to water scarcity. This increases competition on the existing water resources among different users which heightens tensions which may escalate into conflicts (Table 3-5) Such conflicts are mainly between farmers and pastoralists, downstream/upstream water users, irrigation water users and domestic water users/pastoralists.

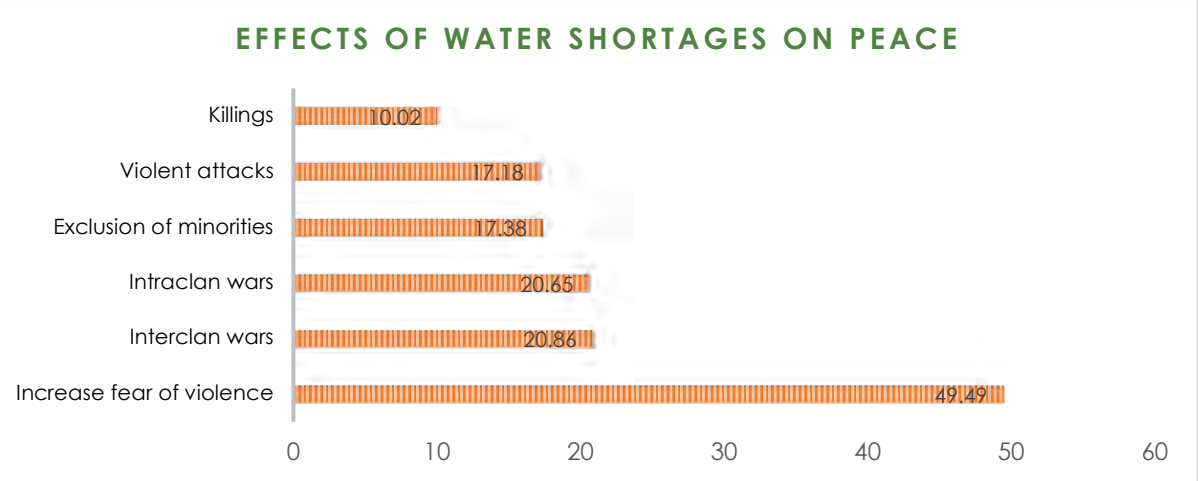

Figure 3-5: Effects of water shortage on peace and security

In Meru County, for instance, the rivers that flow from Nyambene Hills have recorded significantly low water levels. There is therefore intense competition for the available water from different users. Downstream users are attributing the water scarcity challenges to unsustainable use by upstream communities particularly unregulated irrigation activities. Residents indicated that Kathita, Mutonga, and Kiringa rivers are almost drying up downstream. This has created a lot of tension between the upstream and downstream communities that rely on these rivers. Similarly, one horticultural farmer in Rumuruti, Laikipia County is accused of blocking water from the Ngare-Ndare river and diverting it to his farm. As a result, pastoralists downstream have been forced to move upstream in search of water, where the animals end up invading farms hence heightening tensions and conflicts.

In addition, during the drought period, herders normally find their way into the forest in search of pasture. In the process, they destroy water project infrastructures which leads to conflicts between the herders/pastoralists and the host communities who depend on the water projects that draw water from the forests for domestic and livestock use.

There is need to strengthen the capacity of the Water Resource Authority (WRA) and the Water Resource User Associations (WRUA) to regulate water abstraction and also to sensitise farmers on sustainable irrigation practices. This can be done by training WRUAs on emerging issues, development and implementation of conflict sensitive water resource management plans and providing monitoring and enforcement infrastructure, such as gauge stations and WRUA offices.

According to a WRA officer in Laikipia County, there is need to allocate a budget to help ensure that the WRA introduces alternative income sources through tree seedbeds that would allow local communities to earn from tree planting and to also provide trees seedlings for water catchment areas. It was also recommended that the dams get desilted to expand their water storage capacity. This will ensure that conflicts brought by lack of adequate water are minimised. In addition, fencing off water catchment areas and planting trees in collaboration with the community will ensure awareness on the benefit of these practices, which is to preserve the water cycle that facilitates rain formation.

In Kisumu, climate change is evidenced by irregular changes in water levels on the Lake Victoria, alternating between receding waters and flooding. During the dry season, when water recedes, fishermen move to new zones where water is closer to the shore and invade areas that have fishing territories. This gives rise to clashes between new comers and those who 'own' these zones. The situation worsens when there are low fish stocks in the lake; mostly as a result of fishermen capturing large stocks of small immature fish, a total disregard of the designated beach management unit boundaries. The existence of Beach Management Units (BMUs) provides an entry point for interventions that could avert these conflicts; one way is through development and implementation of sustainable fishing plans and instituting conflict resolution mechanisms.

3.1.15 Conflicts related to development projects

Development projects aimed at building resilience may instigate conflicts. This is particularly true when projects are set up in contentious areas, in border projects which seem to only benefit one community and where there is minimal public participation.

Recently a borehole was drilled at Mado Wale village in Lelesa area at the Isiolo North/Wajir West border where land is contested. The two communities residing in the area disagreed over the ownership of the land where the borehole was drilled. This led to tension and eventually intense conflict that caused many deaths.

3.1.16 Land Related Conflicts

Most communities in ASALs live under the communal land ownership arrangement. This implies that there is minimal incentive by an individual to use the land resources sustainably. During the drought season, there is often intense competition for pasture and water resources. This, in most cases, leads to conflict among pastoralists or between pastoralists and farmers.

"There are minimal conservation activities in these communal lands. Just unending conflicts." *Deputy County Commissioner, Taita Taveta*

Climate security programmes, policies

Climate security interventions that have been implemented range from single component projects to complex programmes with multiple components. Though most of these projects have recorded positive outcomes, there are still gaps, or areas of improvement that would have increased the project/programme's impact. The lessons related to project design, community involvement at different stages and the identification of target groups.

Table 3- 8 provides an assessment of selected programmes in six ASAL counties.

Table 3-8: Climate security programmes and policies

Existing Intervention	Nature of the intervention	Outcomes	Lessons learnt	Actors	Impact rating
WAJIR COUNTY					
Peace and security sensitisation and awareness programme	Training peace committees Sensitising communities on peace & security	Most of the conflict hot spots are now safe	Sensitisation programmes need to integrate other components such as livelihood creation	Department of peace and security	High (high level of awareness on peace and security at the community level)
Relief food programme	Distribution of food items, pasture and water during the drought period	Effective in meeting the urgent needs of the community	Need for a sustainable solution for building community resilience to droughts & floods	NDMA, Red Cross, NGAO Islamic Relief	Medium (not sustainable, isn't possible to reach all vulnerable groups)
Water projects	Dam construction	Didn't meet the water needs of the community	Involve communities in the project design Importance of feasibility studies	County Government	Very low (doesn't capture adequate water, dries up shortly after the rains)
Livelihood diversification programme	Promoting high value crop farming through irrigation	Effective in changing communities' mindset towards diversification	The success of the project depends heavily up on water availability To be implemented together	County Government	Medium (successful in attitude change but has not taken up well due to lack of water)
Policy development on peace and conflicts	Drafting of a peace and conflict bill & disaster management bill	Assisted in institutionalising the mandate of peace and security department in the county	Importance of broad stakeholder engagement Different groups have unique roles in conflict management	WFP Dept of Peace & Security	High (the mandate of the peace department is institutionalised)

Livestock Marketing Project in 6 ASAL counties	Livestock extension Value addition Training and capacity building of LMA Market Infrastructure Grants to community members	Community resilience Sustainability of market prices De-risking assets	The importance of primary data as a basis for programming	ACDI VOCA Department of Livestock, Agriculture, Trade	High (ability to revitalise business & offer alternatives) livelihoods during the drought season
Rural Community Resilience Fund	TVETs scholarship, establishing SMEs, start-up kits, some employment by county	Youths acquired skills to engage in meaningful activities	Livelihood Interventions should go beyond training to empower target groups to utilise these skills	IFAD Department of Education TVETs	High (some start-ups have employed other youths)
Small holder farmer project	Supporting farmers to establish greenhouses for horticultural farming	Attitude change achieved but other components failed due to water scarcity	All agriculture projects should incorporate or be linked to a sustainable water project	World Vision	Medium (project lacked a complementary component)
Range rehabilitation programme	Reseeding[10] at the start of rain season	Successful rehabilitation of targeted sections	Rangeland rehabilitation requires a largescale approach	World Vision Islamic relief Dept of livestock	High (visible regeneration)
Water access	Solarisation of water pumps	Reduced cost of pumping water-	Solarisation should be integrated in all water	WFP ACDI/VOCA	High (projects have demonstrated sustainability

10 Indigenous seeds

		significant amount of money saved	projects for operational sustainability		compared to diesel powered ones
Kenya Climate Smart Agriculture Programme	Promotion of alternative livestock - poultry, bees	Community learnt how to diversify	Need for integrated programmes Livestock need water, fodder, regenerating resources	State Dept of Agriculture Dept of Agriculture	High (lessons learnt on diversification
Ecosystem Management	Promoting food security, water & ecosystem management	Resilience practices widely adopted	Efficacy of integrated projects vs single component	Aldef Kenya Dept of Water, Environment & CC	High (community resilience was evident during last drought season)
TAITA TAVETA COUNTY					
Forest rehabilitation	Tree planting -19,000 acres		Need to incorporate other components in tree planting projects	KEFRI	Medium (indicate water/rains has affected the success rate)
Pasture & Fodder commercialisation	Training on fodder commercialisation, commercialisation equipment	Establishment of enterprises around fodder	Community is still fixated on conventional livelihood activities	SNV FAO Dept of Livestock	High (sustained enterprises 2 years on)
Promotion of Melia volkensii	Provision of seedling	High rate of adoption	Significant of promoting targeted tree species	JICA	High (Acres of land under tree cover)

	Technical tree growing support Farmer organisation			Dept of Environmental & Climate Change	
Human wildlife conflict management	Supporting development of land use plans -ranches Security meetings Farmer training	Ranches have seen increased investments	Integration of livelihood components in conservation projects	AWF	High (evidenced benefits in the target areas)
LAIKIPIA COUNTY					
Human Wildlife conflict management	Solar Electric Fencing & trenches around conservancy	Initially reduced conflicts but later destroyed	Participatory programming	Nature Conservancy	Low (herders destroyed the fence to access grazing areas)
Livelihood programme	Relief supplies -water, food, pasture	Reduced risks/ deaths due to drought	Need to improve infrastructure to increase access during drought/floods	NDMA	Medium (significantly controlled human and livestock death
Livestock programme	Livestock offtake programme	This meat was then freely distributed to the community as relief food	Need for awareness on value of livestock offtake	National government. Red Cross	High impact (significantly reduced losses due to death of cattle and also provided food for the community from the meat slaughtered)
Environmental programme	Tree planting.	Increased vegetation/ forest cover	Integrate livelihoods in environmental	County Government Department of	Medium (the projects are in their early stages hence they

	Eradication of invasive species.		conservation for sustainability[11]	water and environment	have not yet shown full impact)
Agriculture	Seed loan which is paid back with an agreed quantity of produce	No impact yet	Ensure distribution of seeds is timely	Caritas	Medium (provided seeds but was late)
Fruit tree project	Promote fruit trees Create awareness on diversification	Farmers have embraced fruit tree planting as a livelihood activity	Need to increase access to extension services	County government	High (high level of adoption)
Agriculture					
	Capacity building and provision of hybrid seeds[12].	Increased awareness and adoption	Target all farmers-, not just the vulnerable to maximise output /facilitate speedy adoption	County government	Medium (distribution of hybrid seeds is still slow)
WESTPOKOT COUNTY					
Water supply	Digging boreholes, water pans	Increase availability of water	Need to prioritise & intensify water projects to address other issues	NDMA, county government, national government, European Union,	High (most settlements are centred around this sources of water)

11 A group of women are using Opuntia to make oil, juices and biogas

12 Hybrid seeds maize seeds -520, 6213, 624 & Nyota beans.

Livestock health & resilience	Livestock vaccination	Increase livestock resilience to drought	There is a lot of misinformation that makes the herders afraid of vaccinations	County government	Medium (a number of livestock owners still do not believe in vaccination and prefer traditional methods)
Irrigation	Crop farming	Irrigation has promoted crop farming	There are innovative ways to deal with negative climate change impacts	County government, World vision, Italian government	High (has led to a source of food that is all year round)
Bee farming	Alternative livelihood	Residents are diversifying livelihood from pastoralism & crop farming	Need for increased sensitisation on livelihood alternatives	world vision	Low (uptake is still very low)
MERU COUNTY					
Food relief	Provision of relief food to households and schools	Hunger alleviation, Reduced school dropout/absenteeism rates	Food shortage increases school dropout/absenteeism rates as learners get engaged in sourcing for food.	National government, Red Cross	High (subject to regularity and amounts given)
Livestock feeds	Provision of animal feeds especially for cattle	Reduced cattle livestock deaths	There is less conflict on grazing land as farmers are able to take care of their animals	National Drought Management Authority (NDMA)	Medium (not all areas that required intervention were reached)
School water supply	Trucking of water to schools	More time spent on learning	Improved/sustained learning standards as pupils spend less time fetching water	County government	Low (cost implications are high if all school were to be reached)

Alternative Justice System (AJS)	Capacity building on mediation, and conflict management	Reduced impacts of conflicts	Reduced conflict in the community as disputes are amicably resolved	Ripples International, Sub-County Peace Committees	High (amicable dispute resolution has a high buy-in by parties involved and leads to win-win situation)
Provision of tree seedlings **Tree Planting**	Tree planting in gazette areas, towns and farmlands Capacity building on establishing tree nurseries	Reduced soil erosion Income from sale of tree seedlings	Less soil erosion and hence sustained land productivity	County & National governments, One Acre Fund, Youth & Advocacy Network (CBO), Mt. Kenya Trust Mafuko Industries	Low (communities living far from urban settings are rarely reached. Tree seedlings usually inadequate)
Trees conservation	Advocacy against charcoal burning	Sustained/improved forest cover	Forest cover is sustained leading to more rains and better harvests	C4s (NGO)	Medium (positive attitude towards charcoal burning as a conservation method not fully realised)
Youth entrepreneurship	Pig rearing in Nkubu	Source of livelihood for the youth	Youths who are gainfully engaged are less likely to engage in criminal activities	Resilience, Peace and Stability (RPS) Programme	Medium impact (Good intervention but requires resources and expertise to achieve wider impact)
Smart farming	Soil conservation, Water harvesting, Tree planting	Improved harvests	Quality farming outcomes	World Bank project in Agriculture, County Government	Low impact (uptake is low)
KISUMU COUNTY					
Livestock restocking	Provision of livestock to support the farmers	Sustained livelihood and source of animal	Due diligence is key to ensure the intervention has the desired outcome	County government	High (reduces over-reliance on fishing)

	replace those lost due to adverse weather	products at affordable rates			
Mental Climate Change Action (MECCA)	Targeting Mental Models of climate change risk to facilitate climate action in East Africa (Lake Victoria)	Adaptation and mitigation strategies identified	Understanding climate change risk perceptions to facilitating climate action	KMFRI in collaboration with the Utrecht University (Netherlands)	Low (challenges in translating research findings into policy and practice)
Kenya Lakes Debris Volunteer Programme (KLDVP)	Spearheading Lake Victoria efforts to research, prevent and reduce the impacts of debris to aquatic life and marine resource users	Better strategies for keeping Lake Victoria and surrounding ecosystem clean	A cleaner lake environment is conducive for enhanced breeding and growth of fish	Kenya Marine and Fisheries Research Institute (KMFRI)	Medium (difficulty in raising awareness and changing the behaviour of the public and stakeholders on the issue of lake debris)
Tree planting	Greening Kisumu City	Town more beautiful town	Trees change the general outlook of a place and make the environment more appealing	County Governor initiative supported by private entities	Low to medium (trees planted in urban areas are basically ornamental)
Financing Locally-Led Climate	Support locally-led climate	Increased initiates for combating	Supporting local initiatives encourages	The World Bank Group	High (local communities and

	Action Programme (FLLOCA)	action in developing Kisumu	effects of climate change	process ownership and support by the community		stakeholders were engaged in identifying local climate risks and priorities through participatory planning processes)
	Victoria Institute for Research on Environment and Development (VIRED)	International non-governmental organization involved in community projects in the Nyando River Basin	More grassroots community projects supported with increased involvement of the community	Involving community members in decision-making processes is essential for ensuring ownership of project outcomes and long-term success.	NEMA	Medium (implementation of research findings)
Dyke construction		Dyke construction in Nyakach to control flooding	Reduced impacts of flooding	Prevention as an intervention is cheaper in the long term than responding to effects of flooding	NEMA, VIRED	High (being a perennial occurrence every rainy season, the local communities fully appreciate the direct impact of dykes in their regions)

CSOs involved in Climate Security

There are multiple civil society organisations that are implementing projects in the ASAL areas of Kenya. These organisations operate at different levels and are sector specific e.g., the Northern Rangeland Trust and Save the Elephant in the conservation sector; ecosystem-based organisations such as C4s in Mt Kenya and Taita Taveta Wildlife Conservancy Association in the Tsavo ecosystem; regional CSOs e.g., Caritas in Mt Kenya region, and national and international organisations such as World Vision. Their specific interventions are described in section 3.5 on climate security programmes and policies.

Table 3-9: CSOs Involved in Climate Security

CSO	Activity	Location
ACDI/VOCA	Livestock & Trade & Emergency response	Wajir
Action Aid	Climate Justice	Taita Taveta
ADS Anglican Church	Provision of seeds. Capacity building on drought management.	Laikipia West
Africa Wildlife Fund	Wildlife conservation, livelihoods	Taita Taveta
Northern Rangeland Trust	Water supply • Alternative livelihood • Conservation establishment/ support	West Pokot
ALDEF Kenya	Water, Livelihoods, Environment	Wajir
C4s	Tree conservation by advocating and sensitising communities against charcoal burning	Areas bordering Mt. Kenya in Imenti North Sub County
Caritas	Agriculture [14]	Laikipia West
Ecofinder Kenya	Focuses on environmental conservation and sustainability. They implement projects related to climate change adaptation, tree planting, sustainable agriculture, and environmental education.	Dunga Beach, Kisumu
IFAD	Vocational Training & Enterprise development	Wajir
Islamic Relief	Emergency response	Mandera, Wajir, Garissa, Marsabit, Kajiado, and Kilifi

14 This NGO loans 4kg of maize seeds to farmers to plant on quarter an acre, and once the farmer harvests, he is obliged to take 8kgs of maize to the NGO.

CSO	Activity	Location
Joali NGO	Agriculture[15] Jikos, water tanks, gas cylinders, dairy goats to farmers	Laikipia West
Kenya Lakes Debris Volunteer Program (KLDVP)	Spearheading Lake Victoria efforts to research, prevent and reduce the impacts of debris to aquatic life and marine resource users	KMFRI, Kisumu Centre (Kisumu Central)
MAGNAM Environmental Network	Sensitise fisher folk on issues of conservation of the Lake as a resource	Kisumu West Sub-county
Mazido	Conservation	Taita Taveta
Mercy Corps	Conservation	Wajir, Isiolo
Mt. Kenya Trust	Preserving and protecting Mount Kenya and its surrounding areas from indigenous tree deforestation, poaching, overgrazing, charcoal production, illegal marijuana farming, and wildfires in the dry season.	Operating in all counties bordering Mt. Kenya
Nature Kenya	Conservation	Taita Taveta
One Acre Fund **Youth & Advocacy Network (CBO)**	Tree planting, Capacity building on establishing tree nurseries	One Acre Fund is present in Meru, Homa Bay, Kisumu, Migori, and Busia Counties. It is also found in other countries in Africa.
Organic Health Response (OHR)	Focuses on sustainable development and environmental conservation in parts of Kisumu County. They implement projects related to renewable energy, sustainable agriculture, and climate change awareness.	Mfangano Island in Lake Victoria, Kisumu
Red Cross	Emergency response Livestock off take programme.	Wajir,Taita Taveta, Laikipia
Resilience, Peace and Stability (RPS) Programme	Supporting youth to rear pigs by as a group but also to use the offspring to start individual pig farming	• Nkubu Sub-County, Meru • Also implemented in West Pokot, Garissa, Isiolo, Samburu, Baringo, Nakuru, Mombasa, Kwale, Lamu, Mandera, Bungoma, Kisumu, and Nairobi Counties

15 Provision of avocado tree seedling to farmers to diversify farming.

CSO	Activity	Location
Save the Elephant	Wildlife conservation, livelihoods	Taita Taveta
Sicom	Awareness and training of new livestock keeping techniques	West Pokot
Taita Taveta Wildlife Conservancy Association	Wildlife conservation, livelihoods	Taita Taveta
Victoria Institute for Research on Environment and Development (VIRED)	International non-governmental organization involved in community projects in the Nyando River Basin. VIRED focuses on making knowledge on sustainable management of natural resources available to local communities.	Rabuor Environment and Development Center in Rabuor, along the Kisumu-Nairobi Highway
World Food Programme	Food relief, Cash transfer, water infrastructure	Wajir, Taita Taveta
World Vision	Livelihoods-farming, livestock	Wajir, Taita Taveta, West Pokot

CSO	Activity	Location
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ADS Anglican Church	Provision of seeds. Capacity building on drought management.	Laikipia West
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17 Provision of avocado tree seedling to farmers to diversify farming.

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Red Cross	Emergency response Livestock off take programme.	Wajir, Taita Taveta, Laikipia
Resilience, Peace and Stability (RPS) Programme	Supporting youth to rear pigs by as a group but also to use the offspring to start individual pig farming	• Nkubu Sub-County, Meru • Also implemented in West Pokot, Garissa, Isiolo, Samburu, Baringo, Nakuru, Mombasa, Kwale, Lamu, Mandera, Bungoma, Kisumu, and Nairobi Counties
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Victoria Institute for Research on Environment and Development (VIRED)	International non-governmental organization involved in community projects in the Nyando River Basin. VIRED focuses on making knowledge on sustainable management of natural resources available to local communities.	Rabuor Environment and Development Center in Rabuor, along the Kisumu-Nairobi Highway
World Food Programme	Food relief, Cash transfer, water infrastructure	Wajir, Taita Taveta
World Vision	Livelihoods-farming, livestock	Wajir, Taita Taveta, West Pokot

Recommended Climate Security Programmes

In recognition of the impacts of climate change on peace and security in the ASALs, a range of interventions can be implemented to address and mitigate climate security challenges. These interventions include capacity building targeting government officers and civil society organisations to enable integration of climate security in development programmes, promoting alternative livelihoods and diversification, development of sustainable rangeland plans targeting grazing areas, ranches and conservancies, and policy/legislation development and review.

(Table 3-10) provides a list of priority interventions. Key enabling factors for implementation of climate security interventions are mainly existing policy and institutional frameworks.

3.1.17 Policy and legislation framework

Most of the counties have made great strides in localising national policies and legislations on matters climate change and security. They have county specific climate change Acts, natural resource policies, security policies and departments. Proposed programmes can therefore be implemented within a guided framework. It also implies that there is a basis upon which proposed interventions can be aligned to the county priority areas. Additionally, the Frontier Counties Development Council (FCDC[18]) Act provides for development of programmes and institutions that address the unique challenges affecting the ASAL counties.

3.1.18 Institutional Structures

The counties have established elaborate institutional structures to implement climate change and peace programmes at various levels of governance. There are established peace and climate change planning committees at county, sub-county and ward levels. Most ASALs have functional peace and security departments that work in collaboration with the national security agencies. This allows for inclusive and participatory programme development and implementation.

The major risks are mainly those related to prevailing values and attitudes held by the target communities, negative political and administrative influences and land adjudication problems.

18 A regional piece body known as the FCDC Peace Summit

Table 3-10: Recommended Climate Security Programmes

Climate change impact /Climate change security issue	Approach	Enabling Factors / Opportunities	Risk Factors
Integration of climate change in peace and security policy frameworks	✓ Training government officials and security agents on climate security ✓ Sensitsing peace committees and community leaders on climate security ✓ Policy development or review to integrate climate security ✓ Advocacy on climate security	Most ASAL counties have fully fledged peace and security directorates The peace committees have been established & sensitised on basic procedures on conflict management Existing County Engagement Forums (which bring together all stakeholders in development)	Low prioritisation of climate security agenda
Capacity building conflict sensitive programmes	✓ Training programs ✓ Development of conflict sensitive manuals/guidelines	Existence of peace and security policy frameworks	Highly rigid donor funded programmes
Strengthening traditional peace structures	✓ Capacity building of council of elders e.g., Alfatah on climate security ✓ Advocacy on women and youth inclusion ✓ Retooling on mediation due to emerging issues	Existence of structured traditional peace institutions	Dominance of patriarchal system among communities in ASAL areas
Prioritisation of water projects in planning	✓ Lobbying for increased budget allocation-county assembly ✓ Provision of boreholes, dams, desilting existing dams, water pans, ✓ Promoting water harvesting among households ✓ Capacity building of WRAs (equipment, enforcement tools)	Availability of ground water/ flood waters Some counties already have feasibility studies done by government-led agencies	Land adjudication challenges

Climate change impact /Climate change security issue	Approach	Enabling Factors / Opportunities	Risk Factors
	WRUAs & BMUs (training, development of management plans)		
Livelihood diversification	✓ Capacity building on alternative livelihood-alternative livestock e.g., poultry ✓ Promoting small-scale farming/gardening	Most farmers have lost livestock/ experienced crop failure hence motivation to diversify	Pastoralism prestige
Livestock programmes	✓ Review national/county-based livestock policies particularly on livestock movement ✓ Capacity building on sustainable livestock keeping ✓ Restocking projects ✓ Value chain development ✓ Market infrastructure-slaughter houses, milk aggregation centres ✓ Development of livestock marketing legislations ✓ Capacity building of LMAs	Favourable climate for livestock keeping Existing funding to complement the project in other areas-FLOCCA, Successful cases to draw lessons from e.g., Moyale LMA[19] Kenya has been declared a meat deficient county	Low adoption of sustainable practices
Grazing management	✓ Development of grazing management policies & plans ✓ Harmonisation of grazing plans with county spatial/ land use plans ✓ Designation of dry season grazing areas[20]	Established range management committee	Bureaucratic government processes

19 Structured LMA that receives 20% of the revenue collected by county government from livestock markets

20 There are successful models in Isiolo County ref Isiolo Range Management Policy

Climate change impact /Climate change security issue	Approach	Enabling Factors / Opportunities	Risk Factors
	✓ Capacity building of range management committees		
Fodder Production	✓ Fodder commercialisation training ✓ Production centres (equipment-bailers, tractors, storage facilities) ✓ Strategic hay reserves establishment ✓ Farmer organisation	Ready market[21]	Extended drought conditions
Promotion of conservancies	✓ Establishment of conservancies ✓ Capacity building of existing conservancies ✓ Establishment of model conservancies to facilitate learning	Rich plant and wildlife diversity Availability of land	Land adjudication challenges
Renewable energy	✓ Promote renewable energy sources	Maximum sunlight hours	Low adoption rate
Sustainable charcoal production	✓ Policy/legislative development[22] ✓ Support policy implementation: ✓ Training and awareness on sustainable charcoal production ✓ Group formation ✓ Model charcoal production centres	On-going charcoal production activities Existing markets - local/ regional	Policy & legal gaps

21 'Last year we bought 10,000 bales of fodder from the community'- Director, Livestock Department Wajir County

22 Charcoal Control Bill currently under development in Wajir County

Climate change impact /Climate change security issue	Approach	Enabling Factors / Opportunities	Risk Factors
Woodlot Establishment	✓ Farmer training ✓ Facilitate seedling access ✓ Linkages with extension service providers	There is increased demand for fuelwood and charcoal	Legal/policy gaps to provide incentives
Carbon market readiness	✓ Training and capacity building on carbon market framework ✓ Development of carbon market readiness policies/legislation ✓ Support development of a model carbon market project	National readiness frameworks almost complete Vibrant market Existing carbon projects mostly concentrated in ASALs	Low technical capacity for carbon readiness in the county
Climate change policies, strategies, action plans	✓ Sensitisation of county assemblies to facilitate passing of climate change related bills ✓ Development of climate change action plans	Existence of climate policies and legislation but there is need for an implementation framework	Too many policies may overwhelm the departments Constant changes in the political offices; governor, CECMs etc
Exploitation of invasive species	✓ Training and awareness creation on exploitation of invasive species ✓ Farmer mobilisation & organisation ✓ Knowledge exchange programs ✓ Product processing centres-oil, juices, biogas, feeds, briquettes	Proliferation of invasive species in ASALs-prosopis juliflora, Opuntia Stricta Migratory and Invasive Pests and Weeds Management (M&IPWM) Strategy 2022-2027	Limited technical support in counties for instance KEFRI operates at regional level

Recommendations

3.1.19 Conflict sensitive programming

There is need for creating awareness and capacity building on conflict sensitive programmes. This should target all stakeholders involved in designing development programmes including county executives, political leaders, national and county government officials and community leaders. This can take the form of capacity building on conflict sensitive programming, development of manuals/guides and policy/strategy development. The Stockholm Hub has developed a comprehensive step by step guide on conflict sensitive programming[23]:

Three steps to including conflict considerations in the design of Climate Change Adaptation Projects

Step 1: Analysing climate–conflict dynamics at the project level

This allows a project developer to understand the wider societal system in which they are operating and the potential effects of their projects on target communities. It ensures proposed projects maximise adaptation gains, avoid exacerbating tensions and contribute to peace.

Step 2: Assessing how the project influences climate–conflict dynamics

Identifying climate -conflict pathways in a specific context and the factors that mediate these linkages. Involve local actors in through a cocreation approach since they possess valuable knowledge on community needs.

Step 3: Integrating climate–conflict analysis into project design

The climate -conflict dynamics should be integrated in the project including demonstration of a theory of change. The inclusion of specific conflict-related output and outcome indicators as part of a project's MEL processes is instrumental in demonstrating the effect of the project on the climate and conflict dynamics identified.

Figure 3-6: Steps to including conflict considerations in the design of Climate Change Adaptation Projects

3.1.20 Integration of livelihood components in peace programmes

The need to integrate livelihoods in peace programs is based on the rationale that most conflicts are instigated or fuelled by loss of or disruption of livelihoods. As climate change continues to threaten more livelihoods and cause dwindling of natural resources, conflicts are likely to increase in frequency and intensity.

23 Stockholm Hub, 2023

This will necessitate that peace programmes make consideration for a livelihood component that promotes climate resiliency such as ecotourism, hay production, poultry farming and fruit tree farming. Additionally, the livelihood activities must be designed to reflect the needs of different groups particularly youth and women. In Laikipia and Kisumu, there were proposals for the planting of fruit trees that would supplement their diet, be a source of income while at the same time expanding tree cover that would lead to better weather and less climate-related conflict.

3.1.21 Equalise development in cross-border projects

Projects that are located in community or administrative border areas should allow for public participation and ensure the proposed development provides seemingly equal benefits to either community. One model project that was often cited by respondents is the PACT peace dividend projects in Mandera/Somali border. The project established complementing infrastructures on either side; a school on one side and a health centre on the other side. This way the communities have almost same level of development it also allows the communities to interact when going to school and seeking health care.

3.1.22 Ecosystem approach in programming

Climate security issues are tied around regenerative capacities of the rangeland ecosystem. Degradation of one element has a significant effect on the entire system. In most of the counties, natural resource regenerative capacity has been declining leading to increased competition for the limited resources. Vegetation loss due to overgrazing, for instance, compromises groundwater recharge and exposes soil to agents of erosion. This implies that any restorative intervention must take a holistic approach by targeting all components of an ecosystem including water, soil, vegetation and animal biodiversity. This could entail, for instance, providing new land management technologies, new animal breeds and crop varieties, and new skills and methodologies for the communities[24].

Conflict Management as a cross cutting Issue

Conflicts including those that relate to violent extremism fall in the category of 'wicked problems' which are difficult to solve because of their complex and interconnected nature[25]. In this regard, the most effective approach to address such problems is to integrate them in programmes as cross cutting issues akin to environment and gender. This will allow for deliberate effort by government and development agencies to initiate and promote conflict management (prevention and mitigation) activities.

24 GEF/ADB (2016) Integrated Ecosystem Management: Stories from the field

1 25 Mason et al (2018) Wicked conflict: Using wicked problem thinking for holistic management of conservation conflict

The process of mainstreaming cross cutting issues involves innovation, flexibility, learning and acceptance of new norms. It suggests deep changes in the established procedures and cultures of organisations so that the issue becomes integrated into its values, mission and management. OECD (2014) shares 7 lessons on how to design and advance a mainstreaming issue based on experiences in development co-operations from the OECD Development Assistance Committee (DAC).

a) The need to provide consistent leadership and sustained commitment. This implies getting a buy in from organisational leaders, senior government officials and politicians through advocacy and training programmes
b) Establishing a clear policy and strategic framework for the cross-cutting theme. A conflict mainstreaming framework will spell out the rational for mainstreaming peace and conflicts in development. Kenya lacks such a strategy[26].
c) Engage in high level policy and political dialogue as in the case of the Paris Agreement on mainstreaming climate change in development. Key entry points include: sector reviews; the launch of key statistics and reports; discussions ahead of and at key international and regional fora; consultations on politically 'hot' policy issues where there is a clear link to security, macroeconomic policy or employment,
d) Have clear implementation guidelines with follow-up tools and practices.
e) Link incentives and accountability to results.
f) Allocate financial and human resources for delivering on commitments.
g) Strengthen the culture of learning on mainstreaming.

2 26 Accord (2022) Peacebuilding Policies and Frameworks in Kenya

3.1.23 Women involvement in climate security programmes

Women are significant players in the management of climate change instigated conflicts. However, they have remained marginalised in most decision-making processes due to the patriarchal system that characterises most ASAL communities, they have limited control over natural resources, they lack property rights, they are relatively poorer and less educated compared to men[27]. These challenges worsen in situations of conflict, fragility, and violence due to the collapse of institutions, loss of livelihoods, and increased vulnerability to gender-based violence (GBV)[28]. There is need to make climate security programmes all-inclusive by allowing women to actively participate. In Wajir, for instance, an attempt to include women in the council of Alfatah Elders, a community peace mediating group, was met with a lot of resistance. A peace committee member recalls a statement that was made regarding this (see quote).

> "If you bring women on board, we will pull out and start a parallel outfit…" *Alfatah Elder*

3.1.24 Resilience enhancement

This will require solutions to enhance resilience to climate change by introducing measures such as improving water management, promoting sustainable agriculture, and protecting catchment areas.

3.1.25 Develop a climate risk management plan

A climate risk management plan can help identify and prioritise actions to reduce the impact of climate change in the County.

3.1.26 Youth Centred Programmes

Recognising the high susceptibility of youths to recruitment into violent extremism and being used as agents to fuel natural resource-based conflicts, climate security programmes should make deliberate effort to favour the youths. The projects should provide initiatives that are favourable for the youths, or make provisions for youth-based interventions particularly those that equip them with technical skills. An example is the Community Resilient Fund by IFAD which was cited among the youth targeted projects with high impact. It involved promotion of skills through provision of TVET scholarships and funds and a start-up kit for establishment of SMEs. As a result, some of the SMEs have matured to a level of creating employment opportunities for other youths.

27 Women and the environment: the role of gender in effective natural resource management. Gender Action. 1998 Winter;2(1):1-3. PMID: 12321705.

28 Christien & Spencer (2022) Integrating Gender into Environment Projects in Fragile and Conflict Setting Accessed on 9 June2023 from https://blogs.worldbank.org/dev4peace/integrating-gender-environment-projects-fragile-and-conflict-settings

3.1.27 Participatory Natural Resource Management

The centrality of natural resources in climate security necessitates a paradigm shift in the management of these resources. First, there is need for increased community participation in planning how these resources are used. This means addressing social barriers that constrain active participation through awareness creation and designing incentives to promote involvement of marginal groups.

> "Lack of proper structures for dialogue and pursuit of selfish interests among resource users is the root of all these conflicts. if each group compromised a little, allot would change in this equation." *Chief, Laikipia County*

Secondly, the natural resource management plans need to be integrative. They have to take into consideration all resource users' needs and interests. The plans should be informed by adequate and accurate data towards the end of enhancing resource regeneration capacity, promoting climate change resilience and mitigating user conflicts. The process should allow for dialogue, brainstorming and consensus.

Thirdly, there is need for elaborate management and enforcement frameworks. These can include strengthening the capacity of resource user groups, supporting the enforcement capacity of government agencies such as WRA, KFS, KWS while also sensitising political arms who may interfere with the processes.

SELECTED IMAGES FROM THE STUDY AREA

One of the farmers (on the right) has taken up sugar cane farming as an alternative to fishing

Typical livestock herd among pastoralists in Wajir County

Fodder farm in Wajir county

A pastoralist who has taken up pawpaw farming in Wajir County

Figure 3-7: Selected Images from the study areas

Conclusion

From the study, it can be concluded that there exists a causal relationship between climate change, natural resource-based conflicts and violent extremism. This relationship is evidenced by multiple climate change induced conflicts which include pasture scarcity related conflicts, conflicts over transboundary natural resources, human wildlife conflicts, water resource-based conflicts, conflicts related to project development and land related conflicts. These conflicts are encouraged by weak governance structures, high illiteracy levels, lack of alternative livelihoods, poor infrastructure and services. Despite the distinct conflict categorisation, the conflict causal effect pathways are highly interlinked. This implies that an intervention against one conflict category is likely to positively affect other conflicts. However, this does not negate the importance of unpacking the climate induced conflicts so as to design targeted interventions whose impact can be clearly monitored.

There are multiple policies and programmes that have been implemented to address climate security in ASALs. Their impact is varied based on actual and perceived benefits. Most of the programmes and projects that are deemed to have high impact are characteristically participatory in design. This is because they address critical conflict mediating factors, particularly alternative livelihood options, improving water infrastructure access and education. They also leverage on lessons learnt from previous projects e.g., solarisation of boreholes to mitigate the challenges of fuel reliant boreholes.

There are multiple civil society organisations that are implementing climate security projects in the ASAL areas of Kenya. Some of the actors operate in very distinct spaces and are sector specific while others implement a range of projects in multiple sectors. Regardless of the nature of operations, the impact of their intervention is of much significance to the government agencies and citizens.

The recommended projects are based on experiences from previous interventions and the current state of climate security, including the major conflict drivers. These range from policy interventions that will allow for integration of peace and security in programming, sectoral policy development to sectoral projects that promote sustainable livelihoods, water access and sustainable natural resource management. These proposals have been put forward against a backdrop of notable enabling factors, such as existing climate security policies, supporting institutional structures and existing programmes such as FLLoCA. The major risks are mainly related to prevailing values and attitudes held by the target communities, negative political and administrative influences and land adjudication problems.

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