Community Adaptation Action Plan - Simailele Catchment

Integration of Climate Change Issues into Community Action Development Plans

20 September 2021

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AfDB	African Development Bank
AfDF	African Development Fund
CAAP	Community Adaptation Action Plan
CBO	Community Based Organization
CCAC	Climate Change Adaptation Committee
CDF	County Development Fund
CIDP	County Integrated Development Plans
CO	Chief Officer
CPIT	County Project Implementation Team
CSO	Civil Society Organization
DRSLP	Drought Resilience and Sustainable Livelihoods Programme
FBO	Faith Based Organization
FGD	Focused Group Discussion
GEF	Global Environment Facility
GoK	Government of Kenya
ITK	Indigenous Technical Knowledge
KEFRI	Kenya Forestry Research Institute
KII	Key Informant Interview
MENR	Ministry of Environment and Natural Resources
MoALF&C	Ministry of Agriculture Livestock and Fisheries and Cooperatives
NGO	Non-governmental Organization
O&M	Operation and Maintenance
PCU	Project Coordination Unit
PSC	Project Steering Committee
PWDs	Persons With Disabilities
RLACC	Rural Livelihoods' Adaptation to Climate Change
SCPIT	Sub-County Project Implementation Team
WASH	Water Sanitation and Hygiene

1 Background

1.1 INTRODUCTION

The Multinational Rural Livelihoods' Adaptation to Climate Change in the Horn of Africa (RLACC) Project – Kenya is being implemented by the Government of Kenya (GoK) under the Ministry of Agriculture, Livestock, Fisheries and Cooperatives; State Department for Crop Development and Agricultural Research. RLACC is funded by the Global Environment Facility (GEF) and the GoK. The GEF's support is in form of a grant that is channelled through the African Development Bank (AfDB) under the African Development Fund (AfDF). The project whose implementation period is four years (effective date: May 19th, 2016 and end date of May 31st, 2021) is designed to support the additional dimensions of climate change resilience in the on-going Drought Resilience and Sustainable Livelihoods Program (DRSLP – Phase I). While DRSLP responded to the impacts of chronic droughts in the medium and long-term through "hard" measures, such as investing in agricultural infrastructure, the RLACC project was designed to focus on "soft" measures for planning resilience in the long term, in order to increase the local sources of social, human, financial, economic, natural, and physical capital (i.e. livelihoods assets), through an integrated watershed management approach. RLACC project covers two Counties (Baringo and Turkana) of the six arid and semi-arid counties where the DRSLP 1 – Kenya project is being implemented (AfDB, 2016).

The project's main beneficiaries include agro-pastoral communities residing in these semi-arid areas in Barwessa Catchment (Kiboi- Baringo County) and Koono and Simailele Catchments (Turkana County). These catchments are particularly vulnerable to climate change. RLACC project activities aim to address the various impacts of climate change on rural livelihoods, by financing adaptation measures and associated services based on both the indigenous knowledge and know-how of pastoral and agro-pastoral communities, as well as improved sustainable technologies and practices.

The RLACC project is designed to directly benefit 26,000 persons (Turkana 18,000, Baringo 8,000) and 4,500 households (Baringo – 1,500; Turkana – 3,000) over a period of 4 years. [Reduction from the initially stated 44,000 beneficiaries to 26,000 (GEF, 2016) was informed by a number of factors;

a) to achieve in-depth impact in the project period, focus on communities in and around schemes instead of sub-county wide spread;
b) the actual number of households and population in the selected areas is about 26,000.

The main objective of the RLACC project is to improve resilience to climate change of pastoral and agropastoral communities, and increase the adaptive capacity of their livelihoods in targeted areas. The project consists of three components namely:

i. Improved resilience to climate change of pastoral and agro-pastoral communities in targeted areas;
ii. Investment in sustainable measures aimed at improving the resilience of pastoral communities to climate change and variability; and
iii. Program activities coordination, monitoring and evaluation.

Further, the development of community action development plans is covered under Component 1 of the RLACC project which seeks to achieve improved resilience to climate change of pastoral and agro-pastoral communities' in Barwesa Catchment (Kiboi- Baringo) and Koono and Simailele Catchments (Turkana).

1.2 PURPOSE OF THE REPORT

The purpose of this report is to present the specific community participatory tools and processes used in developing the Community Adaptation Action Plan (CAAP), and to present findings of the field mission. Conclusions and recommendations on actions needed for implementation of the plans is also provided.

1.3 PROJECT AREA

Simailele catchment is located in Loima Sub-county (Loima Ward) respectively, in Turkana County. Turkana County is the second largest of 47 counties in the Republic of Kenya, covering 71,597.6 km^2 and accounting for 13.5% of the total land area in Kenya. It lies between Longitudes 34° 30'E and 36° 40'E and between Latitudes 10° 30'N and 50° 30'N and is traversed by the extensive Eastern African Rift Valley System. The topography varies between semi-arid and arid landscapes consisting of low-lying plains and isolated hills and mountain ranges. The altitude extends from 369m at Lake Turkana to the highest point at around 900m near the Ugandan border in the west.

The main mountain ranges of the County are Loima, Lorengippi, Mogila, Songot, Kalapata, Loriu, Kailongol and Silale mountains. Because of their high elevation, the mountain ranges are generally green, covered with dense bushes and woody vegetation.

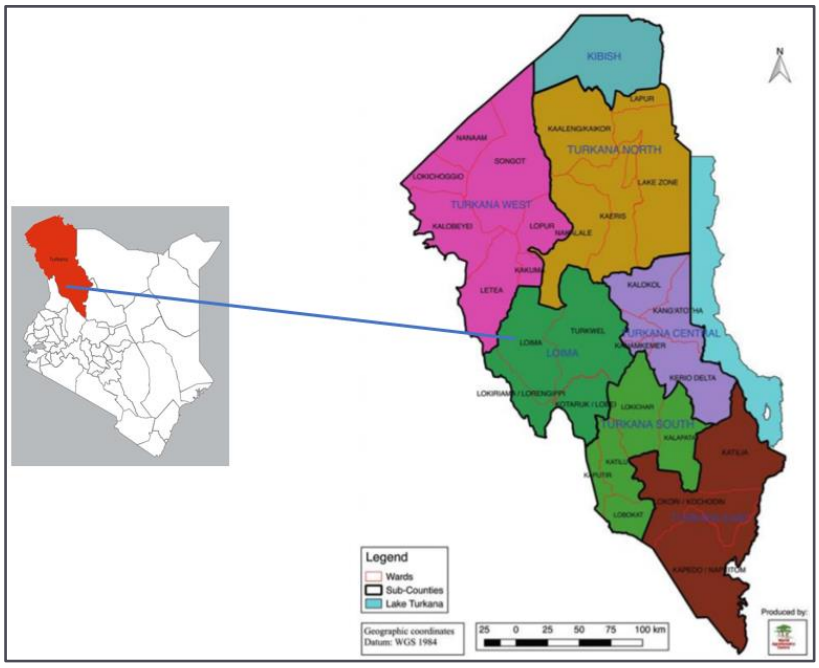


Figure 1: Location of Simailele catchment in Turkana County

Turkana County has a hot, dry climate with temperatures ranging between 20ºC and 41ºC and with a mean of 30.5ºC. Rainfall in the area is bimodal and highly variable. The long rains (locally known as *akiporo*) occur

between April and July and the short rains between October and November. Annual rainfall is low, ranging between 52 mm and 480 mm with a mean of 200 mm (Turkana County Investment Plan, 2016-2020). Rain patterns and distributions are erratic and unreliable. Rain usually comes in brief, often accompanied by violent storms that result in flash floods. The driest periods (locally known as *akamu*) are in January, February and September and the county is highly prone to drought with approximately 80% of the county being categorised as either arid or very arid (Turkana County Government, 2018).

The primary sources of water in rural parts of Turkana County are unprotected dug wells, streams, and boreholes. Approximately more than half (61%) of rural households in the County use unimproved water sources with the majority relying on unprotected wells and streams. The full water resources potential for the County is not yet established as no proper monitoring installations exist in permanent rivers. Access to water significantly affects food security due to its impact on the key sectors such as livestock production, crop production, sanitation, health and nutrition, and therefore hampering human productivity.

According to the 2019 population census, the population of Turkana South sub-county, where Simailele catchment is situated was estimated at 153,736. The population density is low at 22 persons/km^2 in Turkana South sub-county. The male population (approximately 53%) is slightly more than the female population (KNBS, 2019).

The main source of livelihood in Turkana County is from pastoralism. Mobile livestock herding offers the most appropriate production system to manage the harsh and variable environmental conditions found in the county. In addition to this, the mountain ranges support critical economic activities such as honey production, dry season grazing, wood production, and charcoal production. Over the past 40 years, the ability of Turkana people to secure their livelihood from nomadic pastoralism has come under pressure due to inter-related issues including population growth, the impacts of climate change, increased drought and continued environmental degradation. Subsequently, natural resources are limited and often prompt conflict among neighbouring countries and counties. Addressing food security, provision of safe and adequate water, poverty, malnutrition, education, gender inequities and ecosystem degradation are critical for Turkana County in terms of its development ambitions and economic, social, environmental and political potential.

2 Community Adaptation Action Plan (CAAP) Development Process

The Community Adaptation Action Plan (CAAP) process is grounded on understanding the vulnerability and existing adaptive capacity of different groups within the community. Participatory analysis is the starting point in building community ownership of the CAAP process, and is intended to be a valuable process for communities, as the dialogue generates new knowledge and understanding and helps in developing their analytical skills. For this to occur, the analysis must be designed with the dual purpose of gathering and sharing information that gives the community members and the CAAP team new insights and strengthening the capacity of local stakeholders. This provides the basis for identification of actions that reduce risks, enable climate-resilient livelihoods and strengthen adaptive capacity for the longer term .

This section provides the chronological order of the steps and processes undertaken to develop the CAAP. Limitations for the field mission and mitigation measures that were applied are also presented.

2.1 STEPS IN THE DEVELOPMENT OF COMMUNITY ADAPTATION ACTION PLAN

A total of nine (9) steps was adopted for the development of the community adaptation action plan for Simailele. The 9 steps were conducted over a 3-day community participatory process and was generally structured under an inception workshop followed by key informant interviews and completed by community consultations. The detailed activities carried out through the 9 steps is presented below. Findings of the 9 steps have been provided in detail in chapter 3.

Step1: Inception workshop

The 3-day process kicked off with an inception workshop at the County headquarters. The inception workshop was held at the KEFRI Centre in Lodwar on 5th July 2021. The inception workshop had multiple purposes including; introducing stakeholders to activities of the RLACC project under Component 2, providing an update of other on-going activities under the project and collecting information from stakeholders to inform the development of the CAAP. The inception workshop targeted policy makers i.e. County government (departments of agriculture, water, community development, livestock etc.), other government line ministries, civil society organisations, development partners, non-governmental organisations amongst others, who are actively engaged in climate change and agriculture activities in the project areas. A detailed list of workshop participants is provided in Appendix 3.

Step 2: Key informant interviews

After the inception workshop, a series of key informant interviews (KIIs) was conducted. The objective of the KIIs was to gather additional information on various initiatives being implemented by other players in the project areas. Specifically, information on successful climate change adaptation interventions in the project areas was sought. Additionally, any challenges faced e.g. approaches or technologies that haven't worked well in the

project areas were also recorded. A detailed list of persons and institutions interviewed is provided in Appendix 2. The KIIs were conducted both through in-person interviews and telephonic interviews.

After the KIIs, the team proceeded to the project sites to undertake community consultations. Various community participatory approaches tailored to community climate change adaptation planning were adopted. Day 1 was spent working on community historical timelines, season calendar, and hazard mapping. Day 2 was spent on exploring the climate change impacts and generating a prioritized list of impacts of both floods and droughts, which emerged as the two main climate change related hazards in addition to mapping potential partners and stakeholders through "Venn Diagramming". Day 3 was spent developing a vision of the community, identifying climate change adaptation strategies and sub-strategies to realise the community vision, prioritizing the strategies and developing and adopting the CAAP.

Step 3: Developing historical timelines, seasonal calendar and hazard mapping

The consultant provided guidelines on how to develop the historical timelines in Kiswahili, which was broadly accepted by the community members. Translation of these guidelines was provided by community members in their local dialect for older community members to ensure that everyone was brought up to speed on the process that was being undertaken. With facilitation from the consultant, the community provided details of key climate related events i.e. drought and floods. The events were then arranged in chronological order starting from the earliest recorded events as illustrated in **Error! Reference source not found.**. Thereafter, the historical timeline for Simailele catchment was developed.

Similar to the historical timelines, the consultant provided guidance to the community on how to develop the seasonal calendar. The focus of this activity was to document bio-physical changes and livelihood activities, and community coping mechanisms during different seasons of the year. With facilitation from the consultant, the community recorded and validated the different seasonal changes in a year. Thereafter, the community listed the various bio-physical changes (changes in temperature, rainfall patterns and intensity, wind speed and direction etc.) witnessed during the respective seasons and also listed the coping mechanisms adopted by the community for the respective seasons.

The community hazard mapping exercise was preceded by the community drawing a map of their community on paper and highlighting key features such as rivers, hills, roads, schools, churches, community centres, markets etc. With facilitation from the consultant, the community thereafter identified key climate related hazards that affect the community during drought and flood events.

Step 4: Identification and prioritization of climate change impacts

On day 2 of the community consultations, the objective was to reflect on and document climate change impacts witnessed by the community and thereafter generating a prioritized list of impacts of both floods and droughts on the livelihoods of the local farmers. With facilitation from the consultant, the community recorded climate change impacts for drought and flood episodes. Thereafter, the community identified priority of the impacts based on severity i.e. "between floods and droughts, which is more severe compared to the other?". An example of the recorded climate change impacts for drought and flood episodes is provided in Figure 2.

Figure 2: Sample climate change impacts recording for Simailele catchment

Step 5: Stakeholder mapping

Stakeholder mapping at the community level was done by through "Venn Diagramming". With facilitation from the consultant, the community recorded the respective institutions who are implementing various projects and programmes within the community. Depending on the scale of the projects/programmes being implemented, the community allocated different sizes of circles to the respective organisations to illustrate scale of interventions and degree of closeness to the community. As illustrated in **Error! Reference source not found.**, the community recorded the respective stakeholders in their catchment, gave indication on focus areas of the stakeholders e.g. agricultural development, climate change, education, health, security, local administration, infrastructure (roads, dams, schools) etc.

Step 6: Community visioning

Conversations about climate change can be discouraging for communities, as they learn that increased risks and uncertainty will continue to challenge their livelihood security into the future. To orientate the planning towards locally specific and positive development, the visioning process helped to encourage the participants to discuss their aspirations, views of the future and their hopes for their communities. This enabled them to think beyond immediate needs and concerns. Reflecting on the identified climate change impacts and challenges during drought and flood episodes, the community members were asked to dream of a time in the future when their community will be rid of the challenges listed above; a vision of a better tomorrow. Thereafter, the community provided feedback on the community members' dreams and aspirations for their community. An example of the recorded community feedback is provided as follows.

“I SEE……

- Increased peace and security
- Increased Household income
- Better support for people with disabilities
- Training, capacity building and exposure tours to places that have managed similar situations successfully
- Greater community awareness about climate change and development in general
- Improved health facilities
- Value addition in our produce
- Polytechnics for youths and reduced drunkenness
- Bee keeping (new value chains)
- Climate Change policies and strategies to address challenges
- Plenty of water
- A lot of trees
- Better livestock breeds and quality fetching higher prices in the markets
- Increased pasture and storage of feeds
- Reduced soil erosion
- Better Sanitation (WASH)
- Fenced Farms
- Improved access and feeder-roads
- Increased investment in horticulture – mangoes, oranges, avocado, lemons, bananas, vegetables
- Food and livelihoods security and sustainability
- Sustainable groups
- Regulated prices and marketing
- Alternative livelihoods

Community members’ vision/dream statements were then used as a basis for discussing potential climate change adaptation interventions, how climate change impacts could affect their assets, and what can be done to minimise the negative effects. This framed the adaptation discussion in a positive and empowering way, rather than focusing only on problems and how to solve them.

Based on the received feedback, the consultant identified key words “buzz words” from the collective feedback and developed a draft vision statement for the community. The draft vision statement was presented to the community members for approval and improvement. After some discussion, the final community vision statement was agreed on and adopted by the community.

Step 7: Identification and prioritization of climate change adaptation strategies

Following the community visioning exercise, the community identified climate change adaptation strategies required to achieve the community vision. The identified strategies were recorded randomly until all options were exhausted. After that, the community prioritised the strategies starting with the most urgently needed strategies. The order of importance was identified and agreed on between the community members with the consultant only recording the consensus reached amongst the community members. An example of recorded climate change adaptation strategies which were later prioritised is presented in Figure 3.

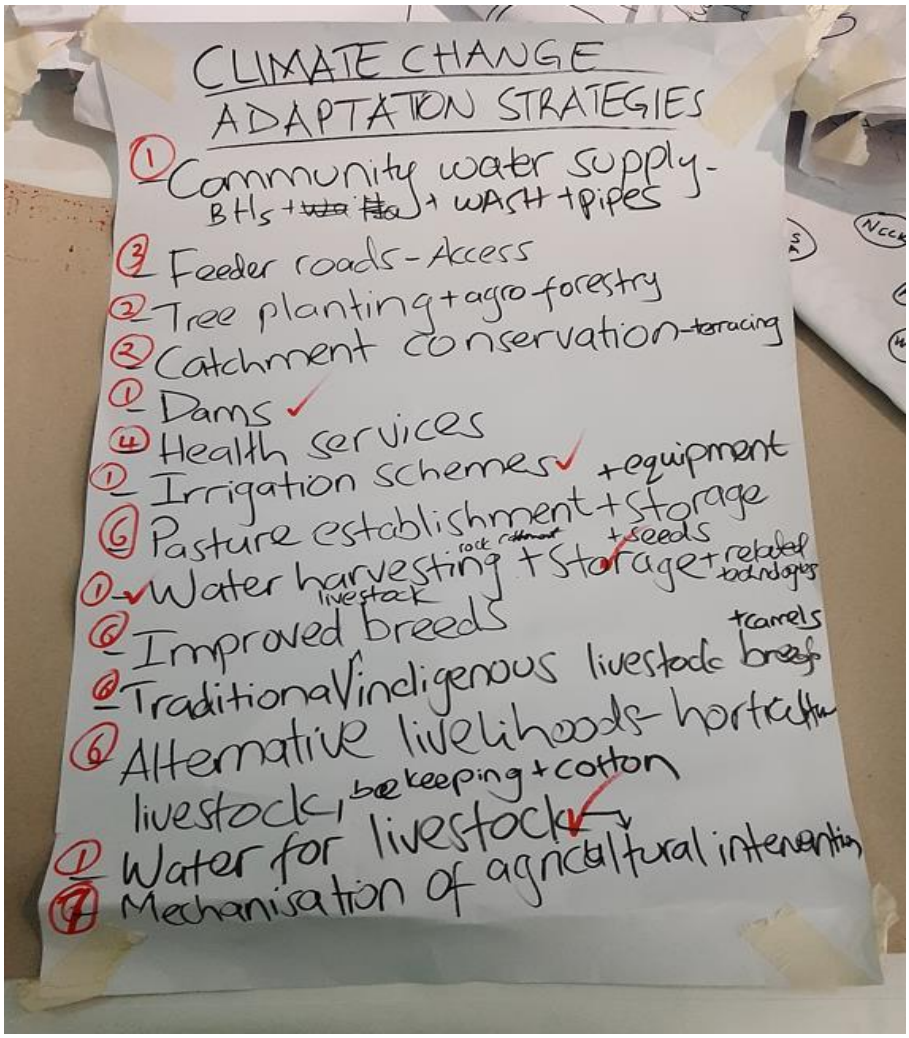


Figure 3: Sample recorded and prioritised climate change adaptation strategies list

Step 8: Development of the community adaptation action plans

After identification and prioritization of climate change adaptation strategies by community members, the consultant provided an outline of the community adaptation action plan which was based on the Care International Practitioner's guide for community adaptation planning[1], specifically for the development of Community Adaptation Action Plans (CAAPs). Based on the prioritised climate change adaptation strategies, the consultant recorded the community adaptation action plan.

[1] Adaptation Planning with Communities: Practitioner Brief 1, Care International

Step 9: Adoption of the community adaptation action plan by community members

After completion of the CAAP, the community members validated the recorded plan and made final iterations as needed. The community members, through the their local leaders present e.g. the Chief, Sub-Chief, or community leaders confirmed that the details captured in the CAAP was accurate, realistic and acceptable. The adoption of the CAAP was done through a community baraza where the community presented the approved plans to their local leaders.

2.2 LIMITATIONS FOR ENGAGEMENT AND MITIGATION MEASURES

The following are the limitations for stakeholder engagement with respective mitigation measures that were applied.

Table 1: Limitations for stakeholder engagement and respective mitigation measures

No.	Limitations	Applied Mitigation Measures
1.	Unavailability of some key informants during the field mission.	The consultant arranged follow up virtual meetings based in availability of the key informants. This was conducted during the week after the field mission.
2.	Access to the different corners of the communities was restricted by duration of the field mission i.e. 3 days per project area. Some of the respondents were not available during the filed mission due to prior arrangements or their work obligations.	The consultant's team engaged alternative methods of communication e.g. telephone conversations and virtual meetings such as zoom with the respondents in the hard-to-reach areas of the communities. This was relevant for the KIIs.
3.	Quality of virtual calls during virtual stakeholder engagements (due to internet connectivity issues, was interrupted.	The Consultant provided all information prior to the virtual meeting for preparation of the meeting. The consultant made a follow up on reports and feedback by email.
4.	Changing availability of community members	The consultant had to be flexible and adapt to the availability of community members based on prevailing circumstances. For example, the community consultations for one catchment had to be shifted to early morning for a market day to aloe the community to undertake their activities first before proceeding with the planned activities for that day.
5.	Language barrier	The consultant conducted all community consultations in Kiswahili language. Where needed, community members who had a good grasp of the discussion topic provided translation into the local dialect for elderly community members who preferred to engage in the local dialect.
6	Managing communities' high expectation that the project was going to provide resources to implement all activities in the CAAP	The Consultant and RLACC PCU accompanying the consultants clarified that the CAAP was not going to be fully implemented by the RLACC project.
7	COVI-19 restrictions	All consultations were conducted with adequate social distancing as recommended by the MoH. Community engagements were conducted in open spaces e.g. hay store, under a tree

3 Study Findings

This section provides details of the study findings which is informed by all activities carried out during the field mission i.e. inception workshop, key informant interviews, historical timelines, seasonal calendar, hazard mapping, venn diagramming, identification and prioritisation of climate change adaptation strategies and development of the CAAP.

3.1 SIMAILELE CATCHMENT

Historical Timeline & Seasonal Calendar

Based on feedback received from the community, significant drought was recorded for the years: 1990s, 1963, 1964, and 1972. Flooding events occurred in 1973, 1977, 1998, 2008, 2019, 2020 . The seasonal calendar for Simailele catchment is provided in Table 2. Dessert locust invasion was recorded in 1975, 1963/1964, and 2020.

Table 2: Seasonal calendar for Simailele catchment

Season	Months
Dry Season/Drought	Two dry seasons - Jan, February, early March - Late September, early October
 Wet Season/Floods	Three Rainy seasons - March, April, May (MAM) (short rains) - June, July, August (JJA) short rains - October, November, December (OND) (long rains)

Climate Change Impacts

The impacts of climate change for Simailele catchment are presented in Table 3. The impacts are presented in two categories corresponding to the two main climate change hazards – flooding and drought - in the area.

Table 3: Climate change impacts for Simailele catchment during drought and flood episodes

DURING FLOODS	DURING DROUGHT
1. Reduced pasture for livestock (goats, sheep, camels)	1. Sweeping away of homesteads, animals, human beings
2. Animals die from diseases (lootome, lookoi, bloody diarrhoea)	2. Bloody diarrhoea and running mucus in camels
3. Dead animals are eaten and may transmit diseases to human beings	3. Camels are expensive to treat as the need specialised veterinary officer from Lodwar to treat the animals

DURING FLOODS	DURING DROUGHT
4. Lack of water for household and farming needs	4. Poisonous grass intertwines with normal grass and causes poisoning to animals
5. Increase in human diseases e.g. kwashiakor, marasmus	5. Theft of livestock from community members and neighbouring communities
6. Death of human beings due to hunger, and disease	6. Impassable roads for humans and animals
7. Drying up of shrubs and trees that provide fodder for animals	7. Youth are jobless
8. Some areas turn into small deserts e.g. in Kangerea area	8. No climate information from meteorological department in Lodwar to help community members to plan their activities. Community elders use alternative ways to predict weather changes e.g. community elders observe the veins of small intestines of animals to determine weather changes. Also, if bone marrow has is red, this implies no rain, and if bone marrow is fatty, there will be no rain. If bone marrow is red, there will be rain.
9. Theft of livestock from community members and neighbouring communities	9. Pumping water from the river to the villages is needed
10. Conflict episodes and community clashes with Pokots	10. Dessert locust invasion
11. Inadequate revenue generation for family needs e.g. school fees, medical care needs	
12. Herders have to walk longer distances in search of pasture	
13. Herders can stay away from their families for 6 – 12 months depending on how far they have to move in search of pasture	
14. Community opts for charcoal making as an alternative source of income especially if some livestock have died from disease or have been stolen	
15. No climate information from meteorological department in Lodwar to help community members to plan their activities	
16. Elderly women and men stay in the homestead	
17. School fees is high, for families that cannot raise the school fees, children are forced to drop out of school	
18. Youth are jobless	

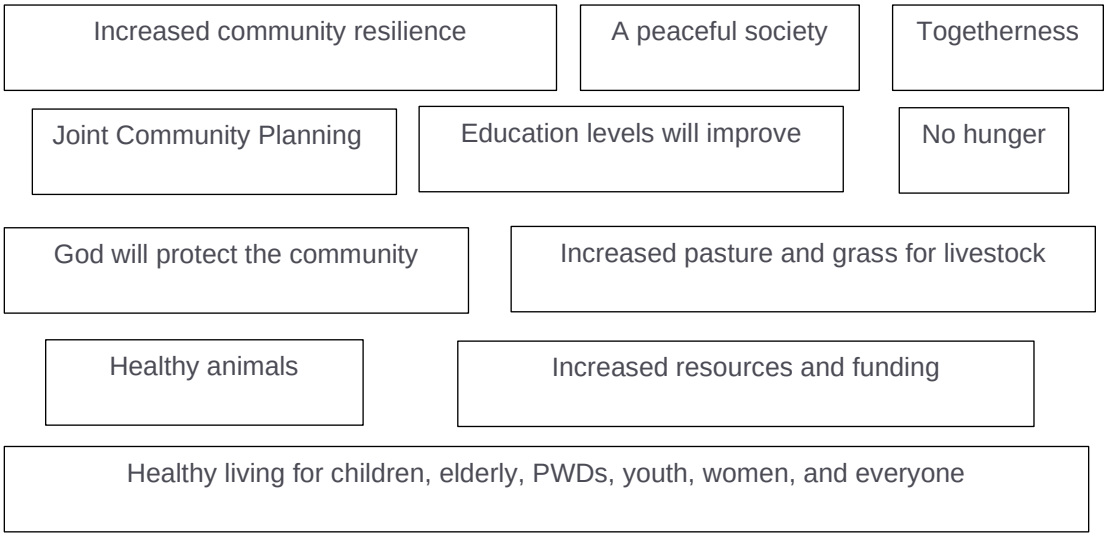
Community Coping Mechanisms

The community has adopted various mechanisms to cope with extreme climate conditions i.e. floods and droughts. Some of these coping mechanisms include.

- Out-migration of herders to other locations in search of pasture and water for livestock. For instance, men and youth can stay away from their families for 6 – 12 months depending on how far they have to move in search of pasture
- Elderly women and men remain in the homestead and are taken care of by other family members
- Community opts for charcoal making as an alternative source of income especially if some livestock have died from disease or have been stolen
- De-stocking to reduce livestock herds and to reduce impact in case affected by floods or drought
- Mixing livestock breeds i.e. investing in indigenous and improved livestock breeds for cows, goats and chicken
- Consumption of certain tree fruits that are available during extreme dry seasons, for both animal and human consumption e.g. *Edung*, *Erut*, *Engom*, *Edapal*, *Elamach*, *Esekon*, *Edome*, and *Ngikong*.
- Engaging in alternative livelihood activities such as charcoal burning, horticulture (e.g. sorghum)
- Use of indigenous technical knowledge (ITK) for forecasting of climate change and community conflicts. The ITK is done through various methods such as reading the small intestines of animals, observing presence or absence of blood in the bone marrow of slaughtered animals, observing the moon and stars, migration pattern of certain birds, presence of certain insects (red in colour), blooming of certain flowers in trees etc.
- Engaging through community leaders for conflict resolution e.g. when livestock herds are stolen by neighbouring communities
- Community/family social contributions i.e. if a family/community member has lost livestock due to cattle rustling, the family/community contributes livestock to the person as starting stock.

Community Visioning

The community members were engaged in the community visioning exercise. The facilitators explained the aim of the visioning exercise i.e. to imagine the community in future, a community that is free of current challenges brought about by climatic changes e.g. drought, floods, increased wind speed and rising temperatures. The members were given time to close their eyes and envision their community and every one shared their feedback as illustrated below.



A joint community vision statement for Simailele catchment was developed to capture the above as follows;

A climate-resilient, food-secure community with clean drinking water, productive farms and growing agro-businesses where citizens live longer quality lives, youth are employed and children have access to quality education.

Identified Climate Change Adaptation Strategies

The community identified the following as the required climate change adaptation strategies for Simailele catchment

- Community water supply and sanitation
- Skills training and exposure tours, capacity building
- Tree planting, soil conservation,
- improved pasture cover, rangeland conservation
- Introduce drought resistant seeds
- Adopt bee keeping, fish farming and traditional chicken and goats
- Improve agro-veterinary services, supply of drugs
- Buy tractor
- De-stocking
- Promoting socio-cultural change

Prioritised Climate Change Adaptation Strategies

Through joint discussions and informed by the climate change adaptation strategies identified as listed above, the community prioritised eight climate change adaptation strategies which are listed in order of priority as follows;

1. Establish Community water supply, sanitation and hygiene
2. Skills training, exposure tour, capacity building, and community awareness
3. Tree planting, soil conservation, improved pasture and range rehabilitation
4. Promote drought tolerant seeds and indigenous livestock, and other farm inputs
5. Promote alternative livelihoods
6. Farm mechanisation (tractor)
7. Socio-cultural change and new farming approaches
8. ICT + Indigenous Technical Knowledge (ITK) climate information knowledge

Potential Climate Change Adaptation Interventions from On-going Projects/Programmes

The key informant interviews were useful in gathering feedback from other key players in the project area. The interviews sought to identify, from other stakeholders, on-going or past climate change adaptation interventions that are suitable for the project area. Potential climate change adaptation interventions which are informed by interventions that have been tried and tested by other stakeholders in Simailele catchment and the larger Turkana county include;

- Dissemination of climate information to the community through existing institutional structures i.e. County, Sub-County and Ward level offices. Dissemination of climate information is done through bulletins, radio and community barazas. However, some of the challenges faced include limited radio signal coverage in remote areas, some families don't have radio appliances, and low literacy levels to understand and use the bulletins. Transmission of climate information through bulk SMS has been piloted and the programme was a success. However, such an approach would require provision and supply of mobile phones to the beneficiaries.
- Cash-transfer programmes have been efficient in certain safety-net programmes such as those targeting food insecurity and nutrition
- Alternative livelihood activities such as bee keeping, fisheries, insurance schemes for livestock, mango and pawpaw farming, sorghum etc.
- Investment in agro-pastoral value chains and provision of accompanying services e.g. training and capacity building, exposure tours, branding and marketing, intellectual property rights etc.
- Community water supply through drilling boreholes. Some boreholes go as deep as 100 for increased probability of striking stable aquifers
- Mainstreaming ITK with scientific approaches and results
- Mainstreaming conflict resolution for all programmes and projects. This includes involving community leaders, religious leaders, and local administration in conflict resolution.

Stakeholder Mapping

The following stakeholders were identified through the venn diagramming exercise for Simailele catchment.

Table 4: Identified stakeholders in Simailele catchment with respective focus areas

Organisation	Focus area
1. Turkana County Government	Relief food, settlement - services
2. DRLSP	Infrastructure (roads, boreholes), alternative livelihoods, irrigation farming
3. NDMA	Drought response, community resilience, school fees, school uniform
4. Turkana County Development Fund (CDF)	School fees
5. FBOs (Catholic, SDA)	Relief food, clothes
6. CSOs (Merlin)	Nutrition, child protection, education, WASH

3.2 CLIMATE CHANGE ADAPTATION POLICY AND INSTITUTIONAL FRAMEWORK

Turkana County Government has developed the Turkana County Climate Change Policy 2020 which provides a framework for addressing climate change issues in the County. It recognizes that climate change is directly affecting the social, economic and human development of countries. The Policy focuses on the interlinkages between sustainable development and climate change for critical sectors that are important to the County's economy and society namely: Environment, Water and Forestry; Agriculture, Livestock and Fisheries; Trade; Extractive Industries; Energy; Physical Infrastructure; Tourism; and Health. This Policy, therefore, elaborates intervention measures that can help to achieve the goal of low carbon climate-resilient development. The Policy focuses on the three key climate change outcomes: Adaptation, mitigation and financial mechanism for implementation of the climate change actions (County Government of Turkana, 2020).

The Policy has been developed to facilitate a coordinated, coherent and effective response to the local, national and global challenges and opportunities presented by climate change in Turkana County. An overarching mainstreaming approach has been adopted to ensure the integration of climate change considerations into development planning, budgeting and implementation in all sectors and at all levels of the county government.

4 Community Adaptation Action Plan

This section presents the CAAP for Simailele catchment. All information contained in the CAAP was obtained from the steps and activities provided in detail in chapters 2 and 3.

4.1 SIMAILELE COMMUNITY ADAPTATION ACTION PLAN

Simailele Community Vision	**A climate-resilient, food-secure community with clean drinking water, productive farms and growing agro-businesses where citizens live longer quality lives, youth are employed and children have access to quality education**

STRATEGIES	ACTIVITIES	TIMEFRAME	LEAD IMPLEMENTER	COLLABORATORS	REQUIRED RESOURCES	ESTIMATED BUDGET (KES)
1. Establish Community water supply, sanitation and hygiene	- Install Water supply for Namakwa - Install Water supply for Loitant - Install Water storage tank for Simailele - Solar powered boreholes - Water supply pipes - Water kiosk - O&M including fencing - Build toilets	1 year	• Ministry of Water • County Government • Community	• DRLSP/RLACC, UNICEF, • Catholic Diocese of Lodwar, • ACK Church	Land, construction materials, capital, labour	• 2 BHs plus kitting and supplies • BHs = 8 million • Three toilets each with 4 cubicles tin Namakat, Loitant, Simailele - 2.0 million
2. Skills training, exposure tour, capacity building, and community awareness	- Farmers training - Set up demo farms within the scheme - Take farmers on Exposure tours - Mobilise communities to build capacities - Undertake skill training and capacity	6 months continuous	• MoALF&C • MoAPE&F • Community	• DRLSP/RLACC, Africare, • WFP, • Kenya Red Cross, • FAO	Technical staff, transport, conference facility, capital	3 million every 6 months

STRATEGIES	ACTIVITIES	TIMEFRAME	LEAD IMPLEMENTER	COLLABORATORS	REQUIRED RESOURCES	ESTIMATED BUDGET (KES)
	building for Scheme management Leadership					
3. Tree planting, soil conservation, improved pasture and range rehabilitation	- Set up tree nurseries - Pasture reseeding and management - Capacity building for farmers in the project - Establishing orchards	1 year continuous	• Community • MoALF&C • MoAPE&F	Ministry of Environment and Forestry	Land, seedlings, labour, capital, technical staff, seeds	7 million per year
4. Promote drought tolerant seeds and indigenous livestock, and other farm inputs	- Procurement of seeds and production farm assets - Establish Agrovet business services within the community - Establish farm input supply	1 year	• Community • MoALF&C • MoAPE&F	• Research institutions, • private plant breeders, • FAO, • WFP, • VSF, • Seed distribution companies	Land, capital, labour, technical staff	• 10 million a year
5. Promote alternative livelihoods	- Construct fish ponds - Purchase and install beehives and stock - Construct honey aggregation centre - Procure chicks	6 months continuous	• Community • MoALF&C • MoAPE&F	VSF, WFP, FAO	Land, water, animal feeds and drugs, technical staff, labour	• 9 fish ponds • 5 million • Beekeeping 2.5 M • Poultry 2.0 M
6. Farm mechanisation (tractor)	- Procurement of a tractor and recruitment of operator	6 months	• Community • MoALF&C • MoAPE&F	• WFP, • NARIGP,	• Capital, • Operator	5 million
7. Socio-cultural change and new farming approaches	- Establish De-stocking/re-stocking system - Awareness creation on modern livestock system - Farmer training and exposure	6 months continuous	• Community • Ministry of youth, Gender and Social Development • DRLSP	• Catholic Diocese of Lodwar, • Childfund, • WFP	• Capital, • technical support, • conference facilities, • training, • links to credit organizations	2 million

STRATEGIES	ACTIVITIES	TIMEFRAME	LEAD IMPLEMENTER	COLLABORATORS	REQUIRED RESOURCES	ESTIMATED BUDGET (KES)
	- Marketing and market access					
8. ICT + Indigenous Technical Knowledge (ITK) climate information knowledge	- Publicity and broadcasting, - Advocacy, - Identification and documentation of IDK experts - Networking and collaboration with entertainers	6 months continuous	• Community • Local administration • NDMA • KMD	Local radio stations, local artists	Capital, Indigenous Technical Knowledge experts, technical support, communication equipment (smart phones, etc.)	• Publicity = 1.5 million • Advocacy = 2.0 million • Networking = 2.0 million
					TOTAL	**KSHS. 58 Million**

5 Implementing the CAAP

This section provides conclusions and recommendations for consideration on activities that need to be undertaken after adoption of the CAAP by community members during the community baraza.

5.1 NEXT STEPS

After successful development and adoption of the CAAP, there is need to formalise the action plans (this report) and circulate the report to Turkana County Government. The CAAP should be submitted through the appropriate county government channels and finally to the County Assembly for debate and for inclusion in the County Integrated Development Plans (CIDPs). Since the second generation of CIDPs (2018-2022) are currently being implemented, there is a window for inclusion of the CAAP in the third generation CIDPs (2023-2027) which are currently being formulated. This will need close consultation with the County governments to ensure that the plans are submitted well in advance before the planning process for the third generation CIDPs begins.

In addition to the above, the finalised CAAP should be distributed to the communities through local administration channels e.g. Chief, Sub-Chiefs, so that the communities have a refence point for their climate change adaptation strategies. This will enable the community to be organised in implementing climate change adaptation interventions. The community may share the plans with other potential partners for implementation of specific interventions based on available support and focus area.

Lastly, the budget estimates provided in the CAAP needs to be re-worked by professionals of the respective disciplines (e.g. road engineers, dam engineers etc.) to determine as near actual budget estimates as possible.

5.2 REQUIRED INSTITUTIONAL SET UP AND COORDINATION

As indicated in the project concept for the DRLSP project, the following is the institutional framework for implementation of the CAAP. For instances where the complete institutional framework has not been fully set up, modifications should be adopted, and in alignment with existing County government frameworks to implement the project.

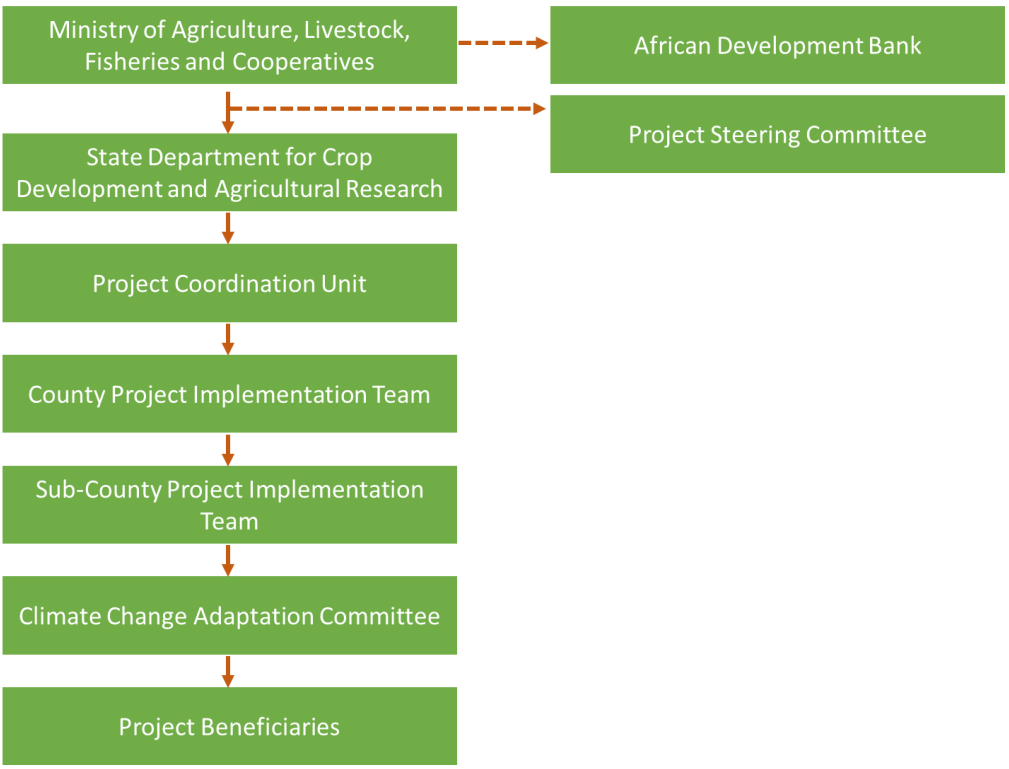


Figure 4: RLACC project institutional arrangement

In addition to the above institutional framework, there is opportunity to bring other stakeholders on board for specific activities for targeted partnerships and collaborations as will be needed for each project site.

There is a vibrant community of stakeholders from CSOs, NGOs, FBOs, private sector amongst others for which partnerships should be sought and formalised for purposes of effectively implementing the CAAP. Section 3.3 provides detailed information on specific stakeholders that are active in Simailele catchment with indication on their focus areas e.g. WASH, health, education, conflict resolution, food security etc. There is an opportunity to leverage this network of stakeholders for implementation of the CAAP.

Key thematic areas for the prioritised CAAP for the Simailele catchment are;

- Community water supply, sanitation and hygiene
- Skills training, exposure tour, capacity building, and community awareness
- Tree planting and soil conservation
- Promotion of alternative livelihood options
- Promotion of drought resistant varieties (crops and animals)
- Irrigated farming and provision of farm inputs
- ICT + Indigenous Technical Knowledge (ITK) climate information knowledge
- Improved governance and joint community planning

Therefore, the required institutional arrangements and partnerships could be based on organisations that have a focus on the above listed climate change adaptation intervention areas.

The County Government of Turkana has a big role to play in implementation of the CAAP and should be fully engaged especially now as they are in the process of developing third generation CIDPs (2023-2027) to ensure that the interventions are included in the CIDPs. Going forward, the County Government would take leadership

in implementing the plans with non-state actors providing support in implementation. Some of these non-state actors include UNICEF, FAO, WFP, Catholic Diocese of Lodwar, World Vision, Kenya Red Cross, ACK Church, Hand-in-Hand, ASDSP, AFA, Farm Systems, Action Aid, VSF, KRCS, Child Fund etc. In addition to this, other government ministries and agencies can also provide support in implementation based on their focus areas e.g. DRLSP/RLACC, NDMA, NEMA, KWS, WRA, KeRRA, MoWI, KCSAP etc. Bringing these stakeholders on board will require close liaison and planning with these entities to ensure that the climate change adaptation plans are incorporated in their respective planning and implementation plans.

5.3 CONCLUSIONS AND RECOMMENDATIONS

The development of the CAAP was a huge success and was developed through participatory community approaches that enriched the outcomes of the plans. Implementation of the plans should therefore be prioritised when resources become available.

The required budget estimates need to be re-worked, with the help of respective professional e.g. dam engineers, or road engineers etc. for each strategy to quantify the budget estimates using systematic approaches and tools. This is because the estimate s provided were based on the community's experience from other projects and their personal experiences.

6 References

AfDB, 2016. *Project Document - Rural Livelihoods' Adaptation to Climate Change in the Horn of Africa (RLACC) Project* , s.l.: African Development Bank.

GEF, 2016. *Project Framework Dcument - Rural Livelihoods' Adaptation to Climate Change in the Horn of Africa (RLACC) Project* , s.l.: GEF.

APPENDIX A Stakeholder Participants' Lists

Simailele Catchment Participants List

No.	Participants List Simailele Catchment	Designation
1	Daudi Eyanae	Block 4 Chairperson
2	Teresa Illari	Environment Chairperson
3	Pascalia Illukwel	Vice Secretary Scheme
4	Alex Lomulen	Block 5 Chairperson
5	Simon Koli	Secretary Hay
6	Benson Naelunga	General Secretary Scheme
7	Carlentin Eren'g	Scheme Chairman
8	Hellen Natiir	Vice Chairperson Scheme
9	Vincent Amoit	Block 2 Chairman
10	Akunoit Edung	Treasurer Hay
11	Lokakuyan Longole	Scheme Treasurer
12	John Lorot	Hay Chairman
13	Jackson Erupe	O & M member
14	Emil Ngolem	Vice Chairperson - Hay
15	Ekulan Edapal	O & M member
16	John Lopua	Block 1 Chairman
17	Josphat Ekiru	Block 3 Chairman
18	Henry Etabo	Area Chief
19	Patrick Manyola	Ward Agricultural Officer
20	Joseph Emanman	Conflict Chairperson

APPENDIX B Key Informant Guide Participants

Turkana County

Name	Position	Organization
1. Dennis Mosioma	Assistant Director, Drought Information	National Drought Management Agency (NDMA)
2. Abdul Kadir Jillo	Director	National Drought Management Agency (NDMA)
3. Francis Muinda	Officer	Kenya Meteorological Department
4. Asembo	County Director, Environment	National Environment Management Authority (NEMA)
5. Jesse Owino	Deputy Regional Director – Rift Valley	Kenya Forestry Research Institute (KEFRI)
6. Dr Daniel Irura	Senior Project Officer	United Nations Organistaion for Food and Agriculture (FAO)

APPENDIX C Inception Workshop Participants' List

Turkana County Inception Workshop Participants List

No.	Participants List Koono Catchment	Designation	Phone Number
1	Phillip Ebei Aemun	CECM – MoAEF TCG	0720647095
2	Evans Keter	TCG - Agriculture	0726220908
3	Hillary Saina	TCG - Irrigation	0724877214
4	Paul Lotum	TCG - Water	0798895763
5	Job Ronoh	TCG - Veterinary	072744214
6	Bobby Ereadon	TCG - Livestock	0712027298
7	Eng Kennedy Makudiuh	NPC - RLACC	0722827425
8	Paul Njuguna	ADA - TCG	0710911644
9	Akai J. Achor	TCG - Intern	0702785813
10	Dennis Mosioma	NDMA - ADDI	0726944229
11	Janet Oyuke	DRSLP/RLACC PCU	0726657238
12	Omeno Suji	RLACC Consultant	0722778572
13	Nelly Bosibori	RLACC Consultant	0720746293
14	Vitalis Juma	TCG – Agriculture/ ASDSP	0728861174
15	Benjamin Sagini	RLACC/DRSLP - PCU	0741075676
16	Eng. Kenneth Wabwire	TCG - Irrigation	0722685407