

Community Adaptation Action Plan – Barwessa Catchment



Integration of Climate Change Issues into Community Action Development Plans

20 September 2021



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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 “hardware” measures, such as investing in agricultural infrastructure, the RLACC project was designed to focus on “software” measures of 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 is implemented in the two Counties of Baringo and Turkana out 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 by pastoral and agro-pastoral 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 Community Adaptation and Action Plans (CAAPs) and the processes used in developing them; as well as to present findings, conclusions and recommendations of the field mission

1.3 PROJECT AREA

Barwessa catchment is located in Baringo County, Baringo North Sub-County, and Barwessa Ward. Baringo County is situated in the Rift Valley Region in Kenya and shares borders with 8 counties namely; West Pokot to the North West, Turkana to the North, Samburu to the North East, Laikipia to the East, Nakuru to the South, Kericho and Uasin-Gishu Counties to the South West, and Elgeyo-Marakwet to the West. It is located between longitudes 35 30' and 36 30' East and between latitudes 0 10' South and 1 40' North.

The County is classified as arid and semi-arid including Tiaty, Baringo Central, Baringo South, Baringo North, and Mogotio sub-counties. The altitude varies between 3000 meters above mean sea level at its highest points and nearly 700 m above mean sea level at its low points. The rainfall varies from 1,000mm to 1,500mm in the highlands to 600mm per annum in the lowlands. Due to their varied altitudes, the sub-counties receive different levels of rainfall.

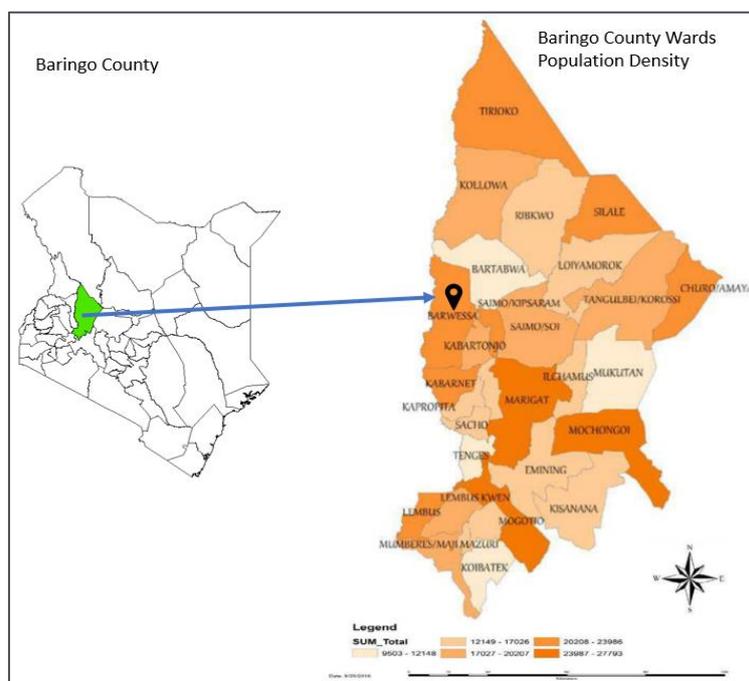


Figure 1: Location of project site (Barwessa) in Baringo County

According to the 2019 population and housing census, the population of Baringo North Sub-County where the catchment is situated was estimated at 104,871. The male to female ratio is 1:1. The average household size is 4.5 while the population density is low at 64 persons/km².

The largest portion of land in Baringo County is community land, held in trust by the County Government, land ownership is still predominantly communal. In some instances, there have been episodes of conflict and community clashes over use of land. Clashes over land use are most likely going to increase in future as competition for the resource increases. Agriculture is the mainstay and primary source of livelihoods in Baringo County, with livestock and crop farming being the major economic activities and providing income and employment for 80% of the population. Mixed farming and pastoralism dominate the highlands and lowlands respectively, while other activities include beekeeping, aquaculture and fishing from Lake Baringo. For Barwessa Catchment, the dominant livelihood source is pastoralism. Agriculture and pastoralism is often open to the vagaries of climate change with floods and extended droughts wreaking havoc on the livelihoods of many households. It is thus important that any livelihoods projects like RLACC focus on building the resilience of households and communities to the effects of climate change.

2 Community Adaptation Action Plan (CAAP)

Development Process

The process of developing Community Adaptation Action Plans (CAAP) 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 of the report provides the chronological order of the steps and processes undertaken to develop the CAAP for Barwessa Ward. Limitations for the field mission and mitigation measures that were applied are also presented.

2.1 STEPS IN THE DEVELOPMENT OF THE CAAP

The CAAPs development is a nine (9) step process. For Barwessa, the process was conducted over 3 days that included an inception workshop with government and other officers, community participatory processes, key informant interviews and presentation of the plans to the community.

Step 1: Inception workshop

The inception workshop was held at the Baringo County headquarters in Kabarnet on Monday 12th 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 in government line ministries, County government officials (departments of agriculture, water, community development, livestock etc.), civil society organisations, development partners, non-governmental organisations amongst others, who are actively engaged in climate change and agriculture activities in the County. 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 and telephone interviews.

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

After the KIs, the team proceeded to the project sites to undertake community consultations. Various community participatory approaches tailored to establishing community climate change challenges and resources were adopted. Day 1 was spent working on community historical timelines, seasonal calendars, and hazard mapping. Day 2 was spent 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 all 3 communities, 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.

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 Figure 2.

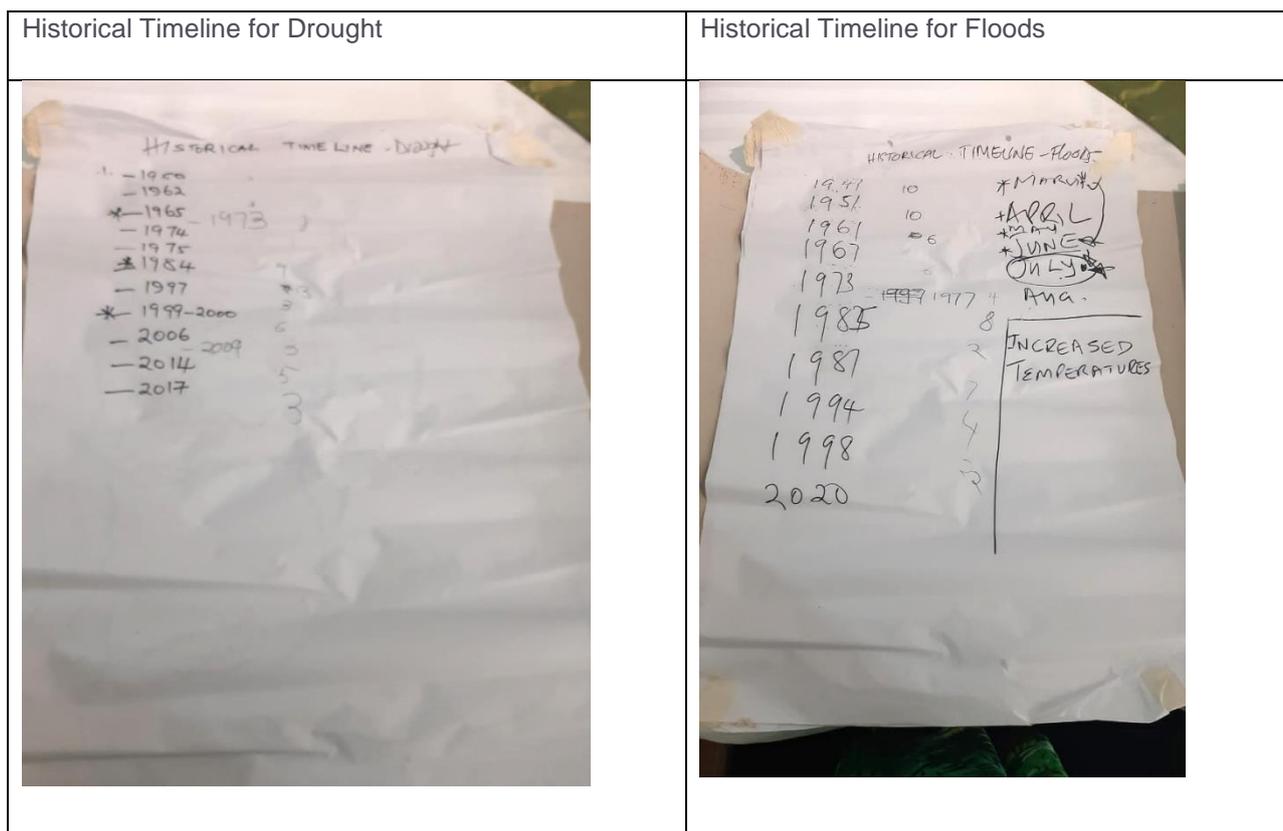


Figure 2: Sample historical timelines developed by the community in Barwessa Catchment

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. An example of a seasonal calendar is provided in Figure 3.

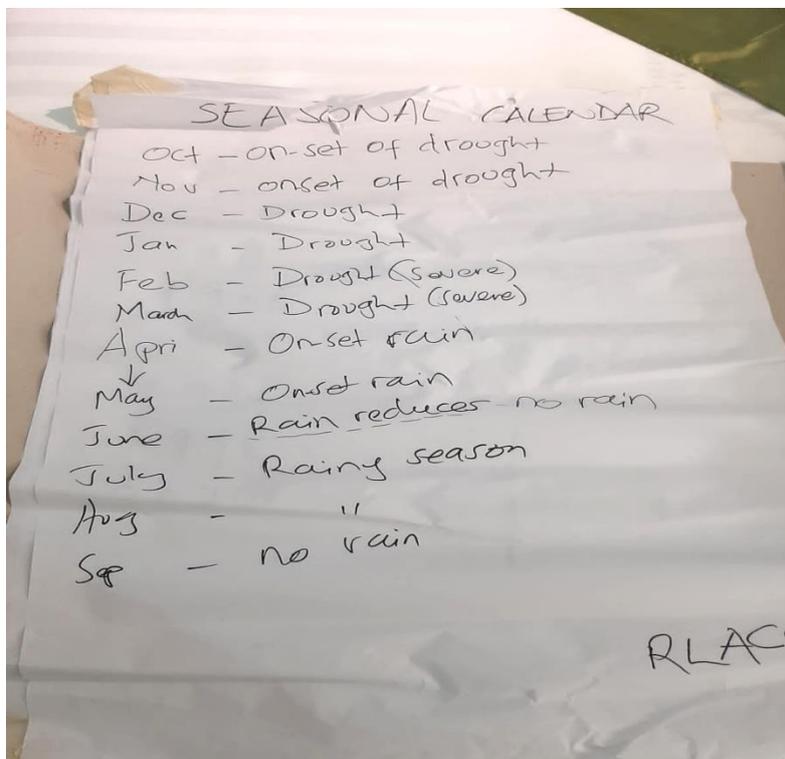


Figure 3: Sample seasonal calendar recording for Barwessa catchment

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. An example of the recorded community hazard mapping is provided in Figure 4.

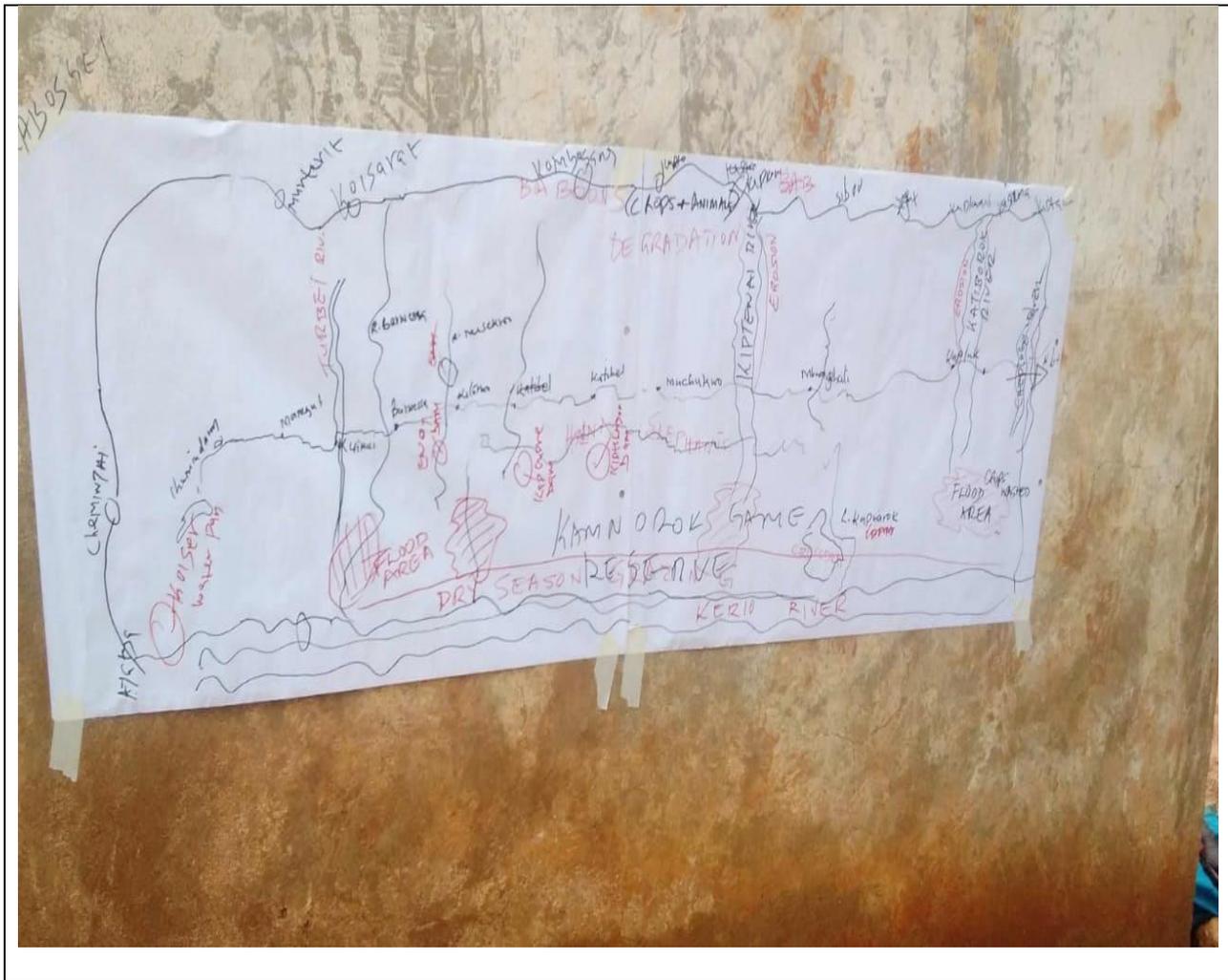


Figure 4: Sample hazard mapping recording for Barwessa catchment

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 generate 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?”.

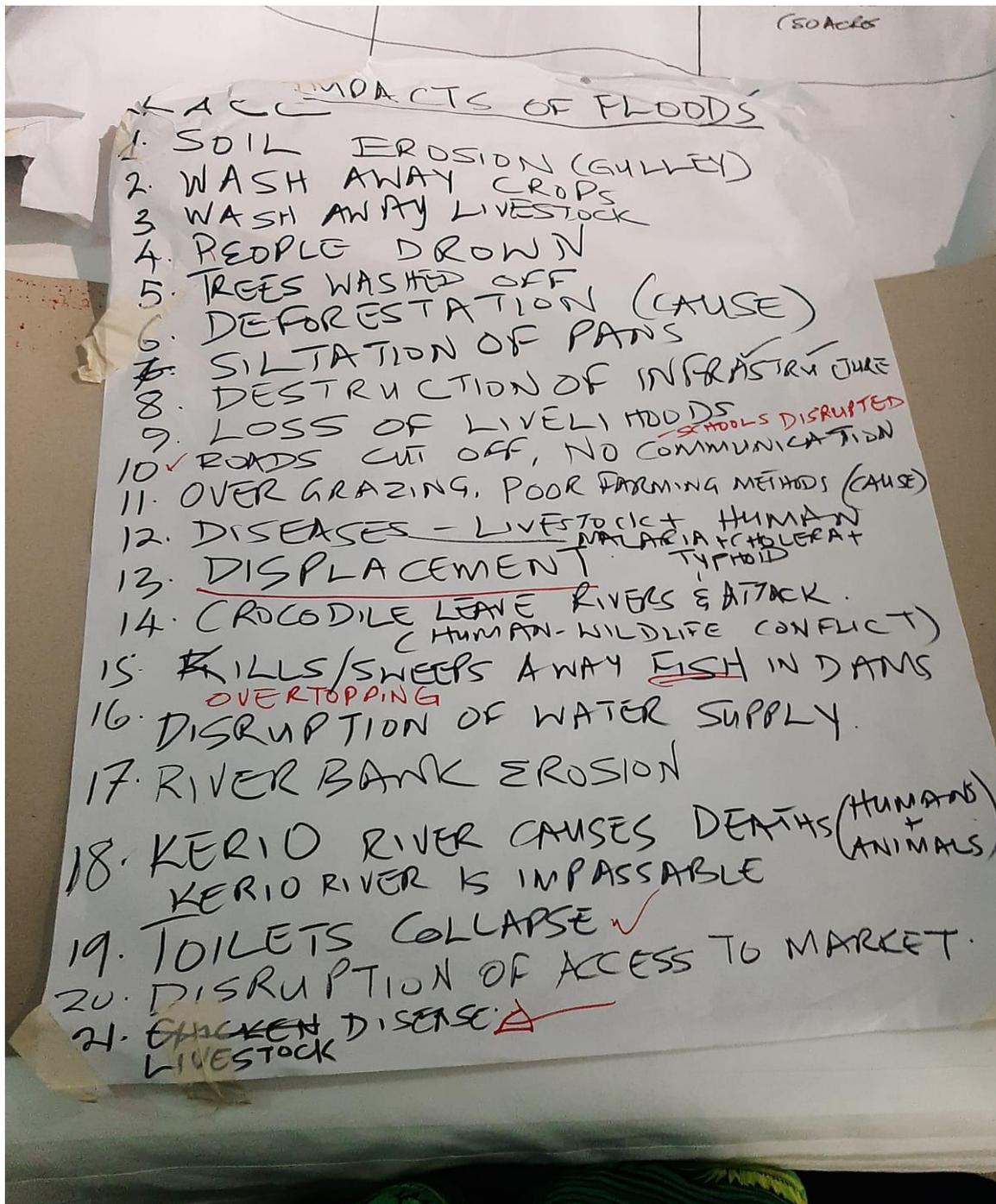


Figure 5: A sample list of impacts of flood hazard in the community

Step 5: Stakeholder mapping

Stakeholder mapping at the community level was done 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. 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.

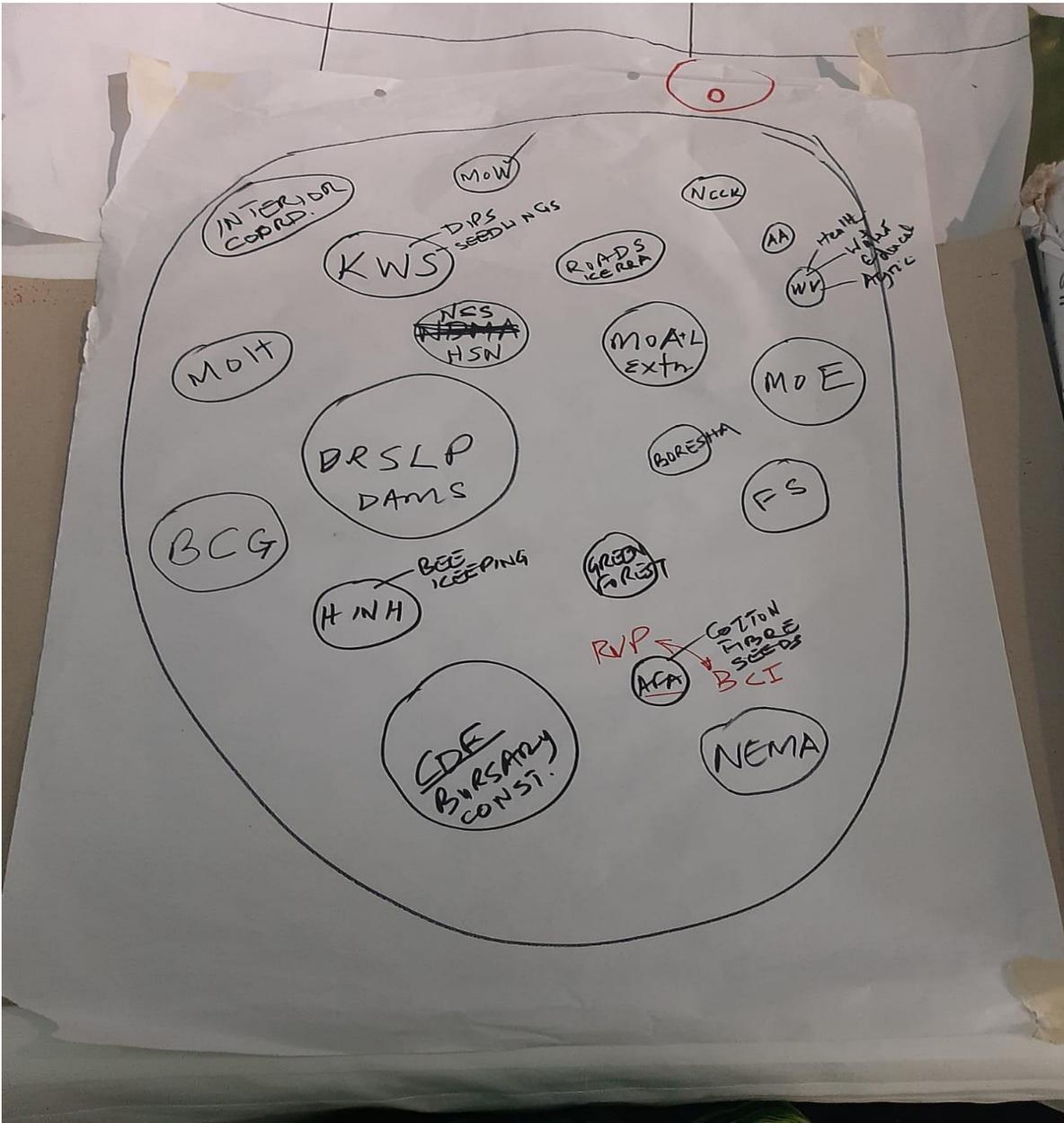


Figure 6: Venn Diagrams showing various development actors

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. The community vision is presented in Figure 7.

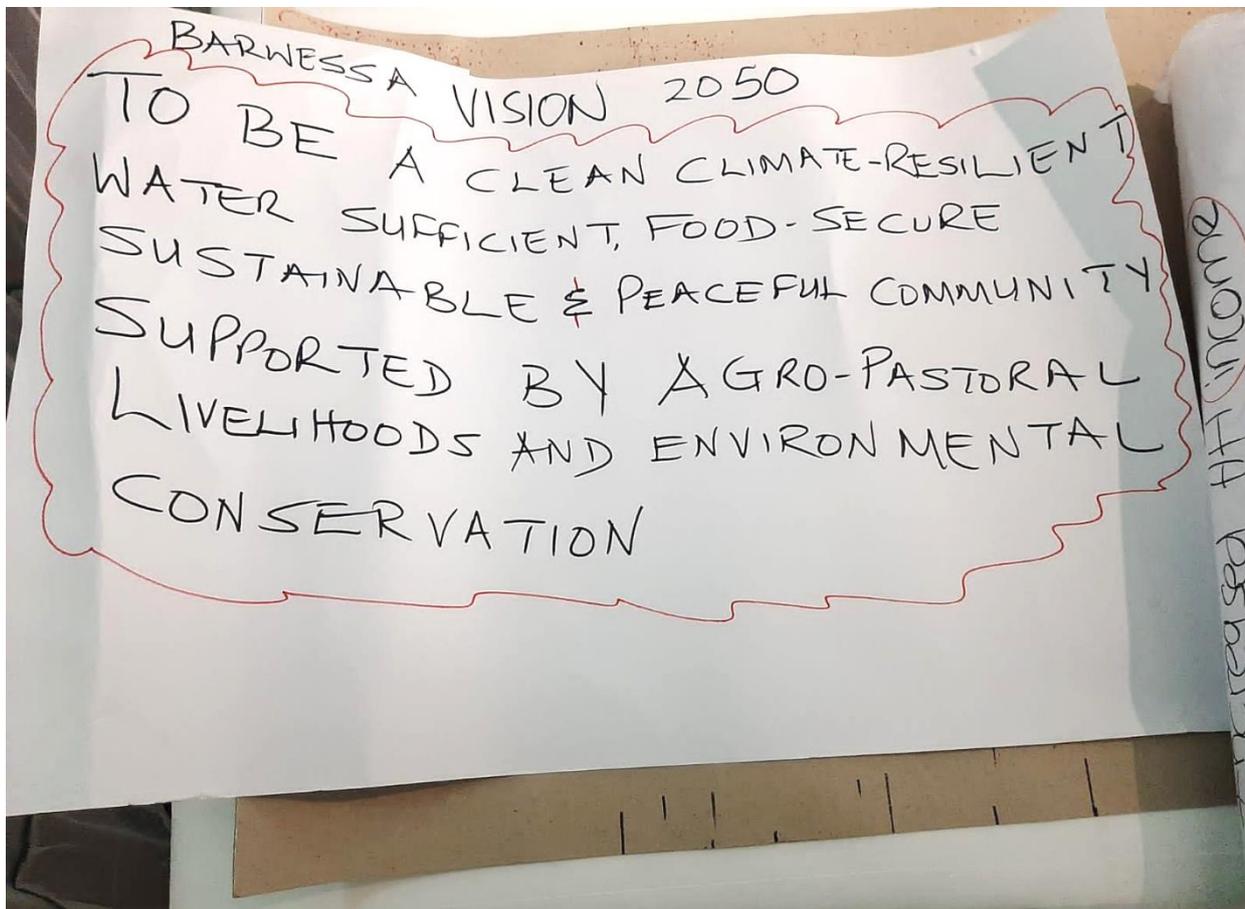


Figure 7: Sample recorded community vision for Barwessa catchment

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 8.

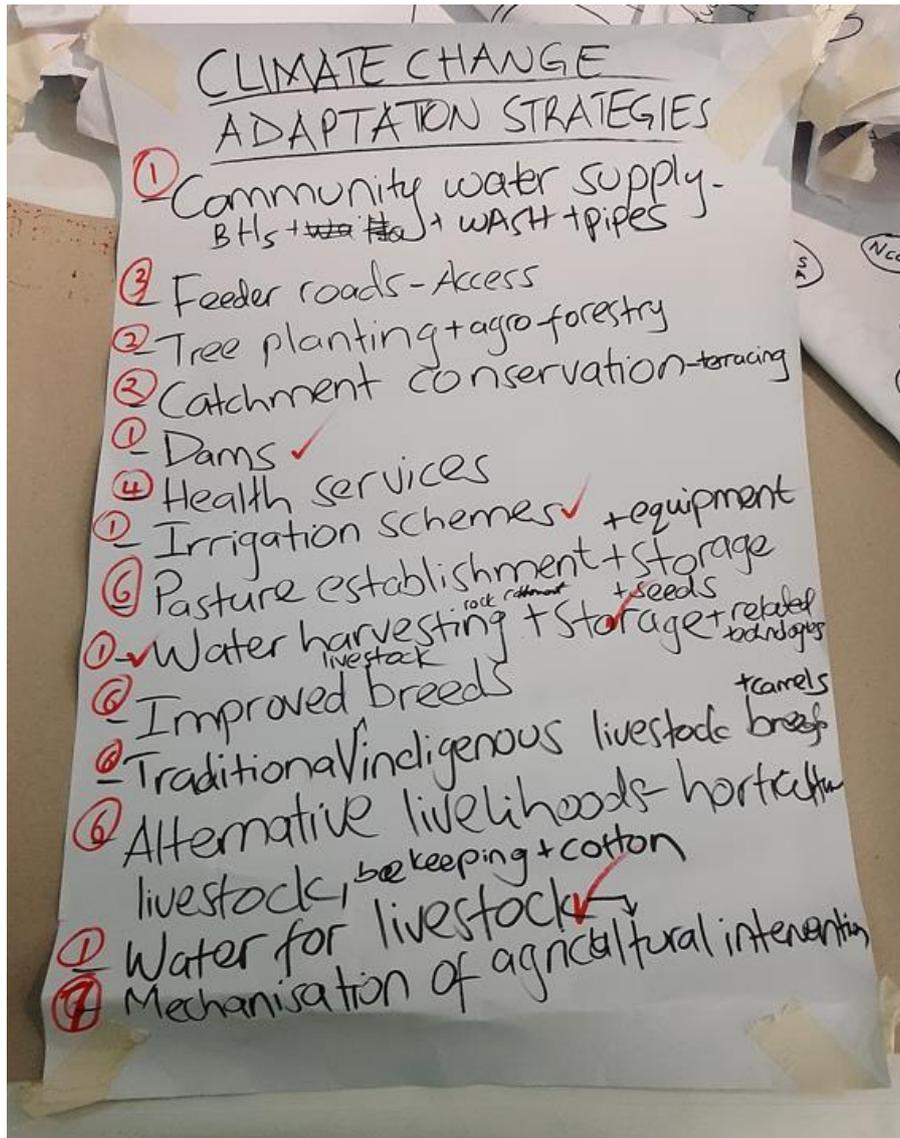


Figure 8: Sample recorded and prioritised climate change adaptation strategies list

Step 8: Development of the CAAP

After identification and prioritization of climate change adaptation strategies by community members, the consultant provided an outline of the CAAP which was based on the Care International Practitioner's guide for community adaptation planning¹, specifically for the development of Community Adaptation Action Plans (CAAPs).

Step 9: Adoption of the CAAP 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 their local leaders present e.g. the Chief, Sub-Chief, or community leaders confirmed that the details captured in the CAAP were accurate, realistic and acceptable.

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

The adoption of the plan 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 Klls.
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
8	Vastness of Barwessa Ward	Community members from far off places were requested to come to a central location.

3 Findings and Outputs

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 BARWESSA CATCHMENT

Historical timeline & Seasonal calendar

Based on feedback received from the community, significant drought was recorded for the years: 1950, 1962, 1965, 1973, 1974, 1975, 1984, 1997, 1999/2000, 2006, 2009, 2014, and 2017. Of the recorded drought years, the most severe ones were those of 1965, 1984 and 1999/2000. During the drought events, community members noted that there was increased temperatures compared to the normal dry season. Flooding events occurred in 1947, 1951, 1961, 1967, 1973, 1985, 1987, 1994, 1998, and 2020. The seasonal calendar for Barwessa catchment is provided in Table 2.

Table 2: Seasonal calendar for Barwesssa Catchment

Season	Months
 Dry Season/Drought	Three dry seasons <ul style="list-style-type: none"> - October, November (on-set of drought) - December, January (dry season) - February, March (extreme dry season)
 Wet Season/Floods	Two Rainy seasons <ul style="list-style-type: none"> - April, May (on-set of rain/short rains) - June – no rain - July, August (long rains) - September – no rain

Impacts of Climate Change

The impacts of climate change for Barwessa 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 Barwessa catchment during drought and flood episodes

DURING FLOODS	DURING DROUGHT
1. Extensive Soil (Gulley) Erosion	1. No Water
2. Floods wash away crops and livestock	2. No Pasture
3. Floods drown people	3. Hunger, food insecurity and livestock deaths

DURING FLOODS	DURING DROUGHT
4. Uproot and wash away trees	4. Malnutrition among children and adults
5. Deforestation	5. Disease (marasmus among adults)
6. Siltation of Water Pans	6. Waterborne diseases – diarrhea, typhoid, amoeba,
7. Destruction of infrastructure (roads, bridges)	7. Cattle rustling and conflict
8. Loss of Livelihoods	8. Out-migration – men and youth move out in search of pasture leaving the families vulnerable
9. Disrupted communication and schools	9. Increased school drop out
10. Overgrazing, poor farming methods (cause)	10. Early pregnancies
11. Increased Human and Livestock diseases	11. Human-Wildlife Conflict (elephants attack to eat maize, baboons, warthogs, snakes, crocodiles)
12. Displacement	12. Increased drunkenness and suicide
13. Human-wildlife conflict (crocodiles leave the rivers and attack people and livestock)	13. Increased theft
14. Floods displace fish in the dams as well interfering with livelihoods	14. Joblessness,
15. Clean water supply is disrupted	15. Stroke for elderly women due to dehydration
16. River bank erosion	16. Clearing of forests and charcoal making as a coping mechanism
17. Kerio River causes deaths in the flooding season	17. Fire outbreaks
18. Latrines collapse leading to poor sanitation and polluting water supplies	18. Destocking
19. Markets cut off	19. Family break ups due to stress
20. Livestock Disease	20. Trekking long distances for domestic water
	21. Quarrying as coping mechanism leading to environmental degradation
	22. Hay selling, water selling – coping mechanism

In addition to the above listed climate change impacts, there is significant environmental degradation in Barwessa catchment as a result of various factors such as over-grazing which result in bare land that leads to significant soil erosion during the rainy season. Other contributing factors include cutting of trees in the highlands for charcoal burning as an alternative source of income.



Figure 9: Significant environmental degradation in Barwessa catchment

Community coping mechanisms

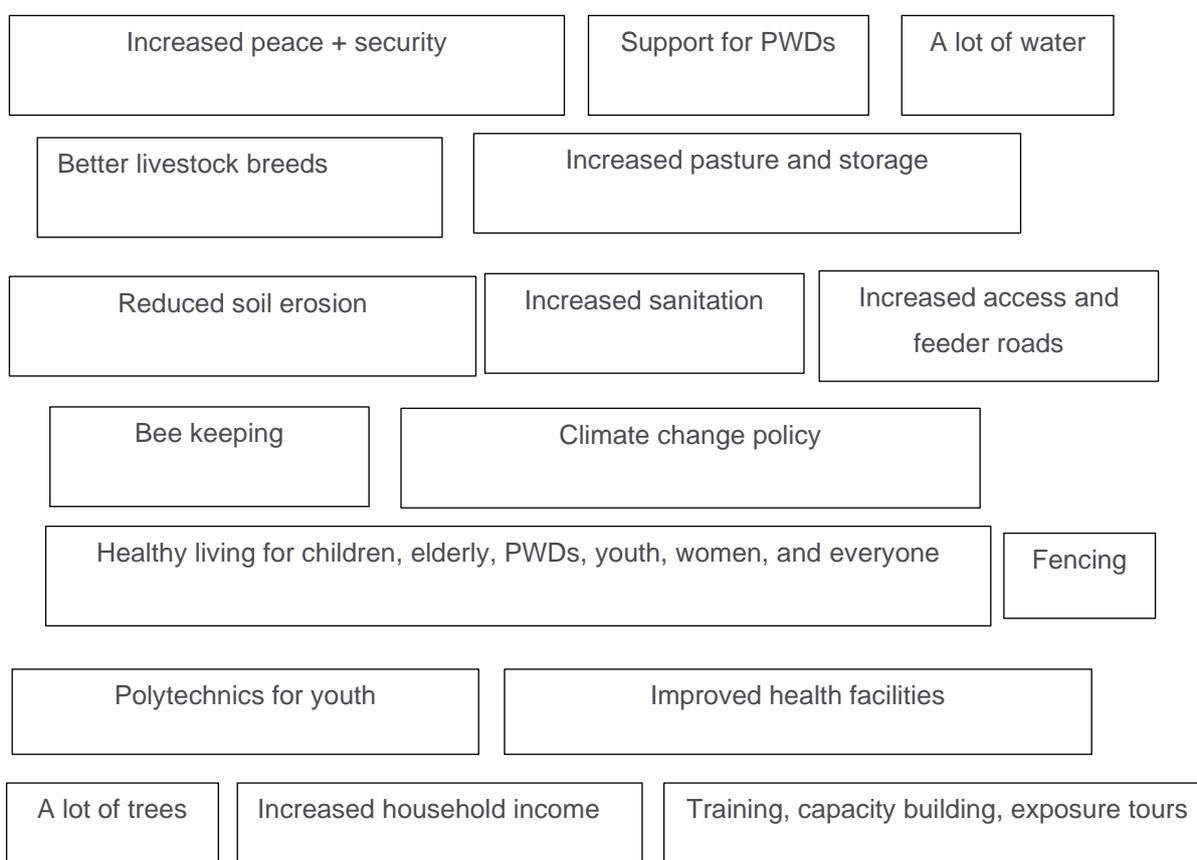
The community has adopted various mechanisms to cope with extreme climate conditions i.e. floods and droughts. Some of these coping mechanisms include.

- Out-migration of herders to other locations in search of pasture and water for livestock
- 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
- Engaging in alternative livelihood activities such as charcoal burning, horticulture (e.g. pawpaw, mango farming)
- 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, 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. What do you see? When they opened their eyes, community members shared their feedback as follows: I SEE!



A joint community vision statement for Barwessa catchment was summarised as ;

BARWESSA VISION 2050

To be a clean, climate-resilient, water-sufficient, food-secure, sustainable and peaceful community supported by agro-pastoral livelihoods and environmental conservation by 2050.

Identified Climate Change Adaptation Strategies

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

- Community water supply and sanitation, water supply pipes
- Feeder roads and access roads
- Tree planting and agro-forestry
- Promote catchment conservation, terracing
- Build dams
- Health services
- Irrigation schemes and respective equipment
- Pasture establishment and storage
- Water harvesting and storage
- Improved livestock breeds, indigenous livestock and chicken breeds
- Skills training and exposure tours, capacity building
- Alternative livelihoods, horticulture (cotton, pawpaw, mango, cotton), bee keeping
- Water for livestock
- Mechanisation of agricultural interventions
- Value addition
- Farming extension services
- Fencing
- Governance and community by-laws
- Water efficient technologies
- Operation and maintenance of infrastructure for sustainability
- Form farmer cooperatives
- Targeted partnerships
- Community awareness on harmful cultural practices
- Sustainable farming systems
- Inter-community peace building interventions
- Polytechnics for youth

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. Water Supply
2. Catchment Conservation
3. Feeder Roads
4. Improved Health
5. Training and Capacity Building
6. Alternative Livelihoods
7. Mechanization and O&M for climate proofed infrastructure
8. Community governance and Management systems

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 Barwessa catchment and the larger Baringo County include;

- Environmental conservation interventions to reduce and manage gully erosion
- Pasture development and production i.e. providing seedlings, storage facilities for hay and increasing market access
- Promoting agro-forestry
- Fencing land parcels to reduce loss of grass seedlings
- Livestock breed improvement e.g. Sahiwal bulls, gala goats
- Vaccination programmes for river diseases
- Dairy production
- 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.
- Alternative livelihood activities such as bee keeping, fisheries, insurance schemes for livestock, mango and pawpaw farming, sorghum, cowpeas etc.
- Community water supply through dams and boreholes.
- 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.
- Community based community diseases reporters

Stakeholder Mapping

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

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

Organisation	Focus area
1. DRLSP	Infrastructure (roads, boreholes), alternative livelihoods, irrigation farming
2. Baringo County Government	Relief food, settlement - services
3. Kenya Wildlife Service	Human-wildlife conflict resolution, alternative livelihoods, seedlings
4. Kenya Forest Service	Seedlings
5. Baringo County Development Fund (CDF)	School fees
6. Ministry of water	Water supply, sanitation
7. Ministry of health	Disease prevention, child immunisation, malaria control
8. Ministry of Education	Schools, books, bursaries
9. Ministry of Interior Coordination	Security, conflict resolution
10. Kenya Rural Roads Authority	Access road, feeder roads
11. FBOs (Catholic, SDA)	Relief food
12. CSOs (World Vision, Hand in Hand)	Nutrition, child protection, education, WASH, bee keeping
13. Farming system Kenya/SHA	Cotton development

3.2 CLIMATE CHANGE ADAPTATION POLICY AND INSTITUTIONAL FRAMEWORK

Baringo County has developed the Baringo County Climate Change Act, 2021 whose objective is to establish a mechanism to finance climate change activities, programs and projects in the County. The Act provides the institutions framework for planning and implementation of climate change interventions in the County. It establishes a County Climate Change Steering Committee, a Planning Committee, and Ward Planning Committees. In addition to this, the Act also establishes a fund to be known as the Baringo County Climate Change Fund, provides sources of funding for the fund and provides regulations on how the fund shall be administered.

4 Community Adaptation Action Plan

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

4.1 BARWESSA COMMUNITY ADAPTATION ACTION PLAN

Barwessa Community Vision	To be a clean, climate-resilient, water-sufficient, food-secure, sustainable and peaceful community supported by agro-pastoral livelihoods and environmental conservation by 2050.
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STRATEGY	ACTIVITIES	TIME	LEAD IMPLEMENTER	COLLABORATORS	REQUIRED RESOURCES	ESTIMATED BUDGET (KES)
1. Water Supply	<ol style="list-style-type: none"> 1. 2 Dams 2. 3 Boreholes 3. Harvesting & Storage (H&S) 4. Drinking Troughs 5. Water efficient technologies (WET) 6. Source Protection 7. Irrigation system 	6 months – 2 years	<ul style="list-style-type: none"> • Community • DRSLP • County Gov. of Baringo (CGB) 	<ul style="list-style-type: none"> • World Vision • Action Aid • UNICEF • KRCS • Min of Water 	<ul style="list-style-type: none"> • Land • Skilled Labour • Capital • Machinery 	BH = 21m Dam = 20m each H&S = 8m WET = 8m Resource Protection = 10m Irrigation = 150m Total = 215m
2. Catchment Conservation	<ol style="list-style-type: none"> 1. Terracing 2. Tree planting & agro-forestry 3. Waste Management 4. Fencing & farm Protection 	6 mo. – 2 years	<ul style="list-style-type: none"> • Community • MoA 	<ul style="list-style-type: none"> • KWS • World Vision • MoEnv • KCSAP • NEMA 	<ul style="list-style-type: none"> • Skilled Labour • Capital • Fencing material • Tree seedlings 	<ul style="list-style-type: none"> • Seedlings = 15m • Fencing = 20m • Labour = 10m Total = 45m
3. Feeder Roads	<ol style="list-style-type: none"> 1. Survey 2. Construction 3. Maintenance 	6 mo. – 2 years	<ul style="list-style-type: none"> • Community • DRSLP • CGB 	<ul style="list-style-type: none"> • KeRRA 	<ul style="list-style-type: none"> • Skilled labour • Machinery • Land • Equipment 	Total = 20m
4. Improved Health	<ol style="list-style-type: none"> 1. Map existing facilities 2. Establish capacity gaps 	6 mo. – 2yrs	<ul style="list-style-type: none"> • Community • MoH • CGB 	<ul style="list-style-type: none"> • UNICEF • World Vision 	<ul style="list-style-type: none"> • Skilled Labour • Equipment for health facilities 	

STRATEGY	ACTIVITIES	TIME	LEAD IMPLEMENTER	COLLABORATORS	REQUIRED RESOURCES	ESTIMATED BUDGET (KES)
	3. Develop Community Primary health care plan 4. Implement plan			<ul style="list-style-type: none"> Kenya Red Cross 		Total = 6m
5. Training and Capacity Building	1. Establish capacity gaps 2. Develop plans for capacity building 3. Establish MoUs with MoA 4. Exposure Visits 5. Enhance Extension services	6 m – 2 years	<ul style="list-style-type: none"> Community Min of Agric. CGB 	<ul style="list-style-type: none"> Farm Systems Boresha Hand-in-Hand ASDSP KCSAP World Vision TVETs 	<ul style="list-style-type: none"> Skilled Labour Trainers Training materials Transport 	Total = 8m
6. Alternative Livelihoods	1. Establish improved livestock breeds 2. Promote sustainable breeds 3. Introduce new value chains 4. Establish farming as business 5. Honey value chain 6. Horticulture 7. Legumes	6 mo – 2 yrs	<ul style="list-style-type: none"> Community DRSLP CGB (MoA) 	<ul style="list-style-type: none"> Farm Systems Boresha Hand-in-Hand ASDSP KCSAP World Vision AFA (Cotton) 	<ul style="list-style-type: none"> Targeted partnerships, MoUs Negotiation skills Bee Experts Planting materials Cotton experts Horticulture experts Farms 	Total = 10m
7. Mechanization and O&M for climate proofed infrastructure	1. Procure appropriate farming equipment 2. Develop an O&M Plan for infrastructure 3. Execute the Plan	6mo. – 2yrs	<ul style="list-style-type: none"> Community DRSLP CGB 	<ul style="list-style-type: none"> Min of Water Min of Agric. ASDSP 	<ul style="list-style-type: none"> Capital Skilled Labour 	Total = 16m
8. Community governance and Management systems	1. Develop by-laws for community 2. Recruit members 3. Elect leadership 4. Register Association 5. Train leaders and community members 6. Establish systems for managing the affairs of the Association	6mo – 2yrs	Community Min of Agric. CGB Min Interior Min Gender & Social Dev.	<ul style="list-style-type: none"> Farm Systems Boresha Hand-in-Hand ASDSP KCSAP World Vision 	<ul style="list-style-type: none"> Time Skills for Institutional Development 	Total = 15m

STRATEGY	ACTIVITIES	TIME	LEAD IMPLEMENTER	COLLABORATORS	REQUIRED RESOURCES	ESTIMATED BUDGET (KES)
	7. Establish Targeted partnerships 8. Plan and roll out intra-community peace-building initiatives 9. Establish production and marketing cooperatives					
TOTAL						335 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 plan (this report) and circulate the report to Baringo 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 to be captured in the third generation CIDPs (2023-2027) which are currently being formulated. This will need close consultation with the County government 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 reference 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 10: 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 Barwessa 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 CAAP

Key thematic areas for the prioritised climate change adaptation plans for the three communities include;

- 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 Baringo have 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 CAAP 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 estimates 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 Document - Rural Livelihoods' Adaptation to Climate Change in the Horn of Africa (RLACC) Project*, s.l.: GEF.

APPENDIX A Stakeholder Participants' Lists

Barwessa Catchment Participants List

No.	Participants List Barwessa Catchment	Designation	Phone Number
1	Samuel Chebon	Farmer	-
2	James Kandie	Farmer	0704434112
3	Mary Cherogong	Farmer	0727322358
4	Shadrack Kipkechem	Farmer	0707210429
5	Joan J. Sertoi	Farmer	0728504774
6	Arnold K. Choge	Farmer	0720491753
7	Joseph K. Yator	Farmer	0724395381
8	Wilson S. Komen	Farmer	0793664924
9	Richard C. Cherutich	Farmer	0711355639
10	Ben Yator	Farmer	0707404699
11	Joshua Mininguo	Farmer	0714012452
12	Mica Kikede	Farmer	-
13	Chebotipri Cherop	Farmer	0700643598
14	Thomas Chebon	Farmer	0717571555
15	Samson Kabeli	Farmer	0713611720
16	Joel Cheptumo	Farmer	0720109302
17	Daniel Cheptiony	Farmer	0713824412
18	Samuel Cherutieh	Farmer	-
19	John Rutto	Farmer	0729846701
20	Daniel Chemelaet	Farmer	0700905493
21	Dickson K. Chepkonga	Farmer	0726808294
22	Samuel K. Cheptoo	Farmer	0726541385
23	Micah Chebii	Farmer	0727336009
24	Rosemary Cherop	Farmer	0769021931
25	Rael Chepkelio	Farmer	0718346603
26	Monica Chepsoi	Farmer	0726808756
27	Linah K.Tuitoek	Farmer	0728375963
28	Aholipana C. Rutto	MOAL&F BCG	0724387021
29	Abraham Kandie	MOAL&F BCG	0721687011
30	Paul K. Cheptumo	NEPAO Chief	0726733043
31	Joseph R. Kandie	NGAO Assistant Chief	0720324434

No.	Participants List Barwessa Catchment	Designation	Phone Number
32	Hosea Chebii	Ministry of Interior	0722562332
33	Eng G. W. Kahuro	RLACC Officer	0722886584
34	Barket Kipkech	Farmer	-
35	Tekong K. Stanley	B.O.M Primary School	0705084253
36	Moses K. Chebii	F Keturuwo	0714837219
37	Linnet Cherutich	Farmer	0704744706
38	Haron Kiptui	Farmer	0719262438
39	Salina Chepcheriing	Farmer	0700974281
40	Dinah Cherop	Farmer	0707329105
41	Willy Chepsang	Farmer	0718333674
42	Julius Komen	Farmer	0716466716
43	Paul Chepsora	Keturwo Tree Nursery	07298477891
44	Janet Oyuke	DRSLP/RLACC PCU	0726657238
45	Omeno Suji	RLACC Consultant	0722778872
46	Kigen Triza	MoAL\$F BCG	0711459339
47	Isaiah Kimawa Yator	Keturwo farmer	0723779356
48	Gideon Chemoiwo	Keturwo farmer	0715824408
49	Kiprotich Susan Jepkoech	MoAL\$F BCG	0791709278
50	Benjamin K. Cherutoi	Keturwo farmer	0710198480
51	Lina Chesire	Project Committee	0705795282
52	Marther Chepchieng	Farmer	0793974844
53	Wilson Lekwon	Farmer	-

APPENDIX B Key Informant Guide Participants

Baringo County

Name	Position	Organization
1. Vincent Abuje	Director of Agriculture	Baringo County Government
2. Samson Bett	Project Coordinator	Kenya Climate Smart Agriculture Project
3. John Kiprop	Environment & NRM Officer	Kenya Climate Smart Agriculture Project
4. Reuben Kiptoo	Environmental Resilience and Social Inclusion Manager	Agriculture Sector Development Strategy (ASDS)
5. Jennifer Kipkazi	Director, Environment	Baringo County Government

APPENDIX C Inception Workshop Participants

No.	Participants List Baringo	Designation	Phone Number
1	Dr Kirwony Kamia	BCG	0724793000
2	William Kiplagat	BCG	0728587852
3	Jennifer Kipkazi	BCG	0722804253
4	David Maina	BCG	0724361368
5	Janet Oyuke	DRSLP/RLACC PCU	0726687238
6	Elphas Ruto	Desk Officer	0720588256
7	Dr B.K. Rotich	BCG	0714048660
8	Vincent Abuje	BCG	0728674588
9	Phillip Nandisa	BCG – Environment	0720845963
10	William Anaalo	BCG - Agriculture	0792434384
11	Kiprotich Susan Jepkoech	MOAL&F	0781729278
12	Aholiparma Rutto	BCG - Agriculture	0724387221
13	Paul Cheptumo	NGAO - OOP	0726733043
14	Rachael Solit	MoW&I	0720260652
15	Kigon Triza	MOAL&F	0711459359
16	Tanui Benjamin	MOAL&F - ASDSP	0724880517
17	Abraham Kandie	MOAL&F - Barwessa	0721687011
18	Julius Ngosos	MOAL&F - North	0721553025
19	Omeno Suji	RLACC Consultant	0722778876
20	Nelly Bosibori	RLACC Consultant	0720746293
21	Benjamin Sagini	DRSLP/RLACC PCU	0741075676
22	Eng. George Kahuro	DRSLP/RLACC PCU	0722886584
23	Dickson Kaitany	BCG – Water & Irrigation	0722108162
24	Samson Bett	KCSAP - CPC	0720215110
25	Nahaman Towett	MWI – BCG	0720215110
26	David Bitok	BCG – Livestock	0722108162
27	Richard Kesett	BCG	0712425530
28	Kiplagat Chepkibot	BCG	0724796423
29	Robert Ngany	MOAL&F	0724835904