COUNTY GOVERNMENT OF NANDI

Participatory Climate Risk Assessment Report-Nandi County

DEPARTMENT OF LANDS, PHYSICAL PLANNING, HOUSING,WATER, ENVIROMENT, NATURAL RESOURCES AND CLIMATE CHANGE

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FOREWORD

Nandi County being one of the 47 Counties in Kenya faces a number of climatic hazards such as unpredictable rainfall pattern, floods, frost, hailstorms, landslides, and prolonged dry spell. These hazards may lead to reduced agricultural productivity due to crop failure and post-harvest losses, increased frequency of pests and diseases. They also increase the population of disease vectors such as mosquitoes, which presents high risk on human health through diseases such as malaria. Climate change impacts in the County are caused by human activities such as unsustainable and uncontrolled exploitation of natural resources, deforestation, and degradation of water catchment areas and encroachment of wetlands.

For the County to efficiently address the impacts of climate change, a coordinated approach anchored within a legal framework has to be embraced. In line with Kenya's Climate Change Act, 2016 and the national Climate Change Action Plan, 2018-2022, the County government of Nandi formulated the Nandi County Climate Change Policy and the Nandi County Climate Change Fund Act, 2021.The County Government dedicates not less than 2% of its development budget into the fund for climate change response.

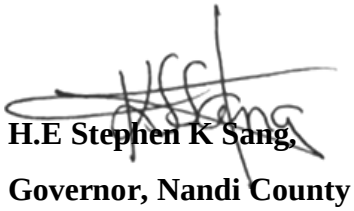
To promote participatory locally-led climate action, governance structures have been established at ward and County level. These include the Nandi County Climate Change steering committee, which provides strategic leadership to County's climate response, and Ward Climate Change Planning Committees in all the 30 wards to facilitate community- centered climate action planning and implementation. All these structures are coordinated by the County Climate Change Unit, which oversees implementation of the County's climate change programs.

This Participatory Climate Change Risk Assessment (PCRA) is an approach that enables communities to identify the climate change hazards, their impacts and propose practical solutions for evidence-based County Climate Change Action Planning and implementation. The approach provides information regarding historical, current and future climatic scenarios and evaluates their implication to livelihood systems while examining the existing drivers of vulnerability. The PCRA aims to inform the most effective sector-specific strategies to strengthen the community's resilience against the identified climate hazards. The PCRA process is supported by the National

Treasury and the Financing Locally Led Climate Action (FLLoCA) Program and is one of the requirements for accessing County Climate Resilience Investment (CCRI) Grants under FLLoCA.

Based on the findings of the PCRA process, the County Government of Nandi shall prioritize strengthening climate change governance framework, mainstreaming of climate change across all sectors and strengthening capacity to monitor and report climate action across the sectors at the County level and at ward level. In addition, enhancing climate information services and early warning systems shall be prioritized to reduce the impacts of climate change shocks among the communities.

We acknowledge the tremendous support from the National Treasury and the Financing Locally Led Climate Action (FLLoCA) program towards the preparation of this PCRA report. We also prioritize to upscale implementation of climate resilience projects with emphasis on restoration of degraded ecosystems, strengthening livelihoods through climate smart agriculture, soil and water resources conservation, water storage and distribution. A Climate Change Action plan shall be developed, guided by this PCRA report to give specific guidance on the response to the identified climate impacts. Through collaborative and coordinated climate action, Nandi County seeks to achieve Sustainable Development Goals, contribute towards attainment of Kenya's Vision 2030 and foster socio-economic development for improved livelihoods of the residents of Nandi.



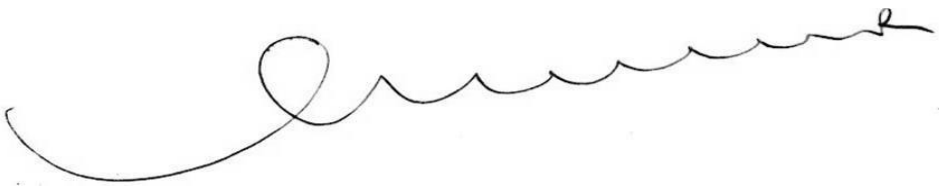
H.E Stephen K Sang,
Governor, Nandi County

ACKNOWLEDGEMENT

The Participatory Climate Risk Assessment process was initiated in Nandi County with the financial support from the World Bank and the National Treasury under Financing Locally Led Climate Action (FLLoCA) program.

I wish to acknowledge the tremendous support and guidance from H.E the Governor Stephen K Sang, the National Treasury FFLoCA Program Implementation Unit (PIU) for providing technical and financial support to the PCRA process, the Department of Lands, Physical planning, Housing, Water, Environment, Natural resources and Climate change, and the Nandi County Climate Change Unit for successful co-ordination that enabled the completion of the PCRA process. More appreciation goes to The PCRA technical working group comprising of representatives from the County Departments of Lands, Environment, Water, Agriculture, Public health, Economic planning, Directorate of public participation and open governance. Other agencies involved include National Environment Management Authority (NEMA), Kenya Forest Service (KFS), Kenya Meteorological Department (KMD) and Water Resource Authority (WRA).

In conclusion, I acknowledge the residents of Nandi for their contributions and active participation in identification and prioritization of climate change issues and hazards within their wards and proposing strategic actions towards mitigation, which led to the success of this process.



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DEFINITION OF TERMS

Climate Change	Change in the climate system that is caused by significant changes in the concentration of greenhouse gases due to human activities, and which is in addition to the natural climate change that has been observed during a considerable period.
Adaptation	Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
Adaptive capacity	Ability of systems, institutions, humans, and other organisms to adjust to potential damage, take advantage of opportunities, or respond to consequences.
Global warming	Observed or projected gradual increase in global surface temperature. It is one of the consequences of Climate Change.
Greenhouse gases	Gases that absorb and emit radiant energy within the thermal infrared range. The main GHGs measured in a GHG inventory are, carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), per-fluorocarbons (PFCs), hydro-fluorocarbons (HFCs), sculpture hexafluoride (SF6) and nitrogen tri-fluoride (NF3).
Mitigation	Human interventions to prevent or slow down atmospheric GHG concentrations by limiting current or future emissions, and/or enhancing potential sinks for greenhouse gases.
Resilience	Capacity of social, economic and environmental systems to cope with a hazardous event, trend, or disturbance.
Vulnerability	Propensity or predisposition to be adversely affected. It encompasses sensitivity or susceptibility to harm, and lack of capacity to cope and adapt.

LIST OF ACRONYMS AND ABBREVIATIONS

ADSW	Anglican Development Services Western
CCAP	Climate Change Action Plan
CCF	County Climate Change Fund
CFA	Community Forest Association
CIDP	County Integrated Development Plan
CSO	Civil Society Organizations
ECDE	Early Childhood Development Education
GIS	Geographical Information Systems
GHGs	Green House Gases
KCB	Kenya Commercial Bank
KFS	Kenya Forest Service
KIHBS	Kenya Integrated Household Budget Survey 2015-2016
DNMP	Division of National Malaria Programme
KMD	Kenya Meteorological Department
KWS	Kenya Wildlife Services
MD	Managing Director
NEMA	National Environment Management Authority
PCRA	Participatory Climate Risk Assessment
PWD	Persons with Disability
TVET	Technical and Vocational Training Colleges
TWG	Technical Working Group
WRA	Water Resources Authority
WRUAs	Water Resource Users Association

PARTICIPATORY CLIMATE RISK ASSESSMENT TASK TEAM

THE SECRETARIAT

1. Jonah Biwot	Chief Officer Climate Change – Team Leader
2. James Meli	Director, Climate Change
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CHAPTER ONE: BACKGROUND AND CONTEXT

1.1. International and Regional Context

The Intergovernmental Panel on Climate Change (IPCC) has noted that Africa is highly vulnerable to climate change. Impacts of particular concern to Africa are related to water resources, food production, human health, desertification and coastal zones, especially in relation to extreme weather events. Some of these impacts are already manifest in Kenya with shifts in rainfall patterns expected to have far-reaching consequences.

Cognizant of this, Kenya through the United Nations Framework Convention on Climate Change (UNFCCC) process committed to protect the climate system for the benefit of the present and future generations. Kenya ratified the UNFCCC in 1994 and the Kyoto Protocol in 2005. The country is a key player in the global climate change governance system, and annual participates in the Conference of the Parties to the UNFCCC, articulating the national interests and position during international negotiations.

Kenya has also actively participated in regional initiatives to respond to climate change, including the development of the East African Community (EAC) Climate Change Policy, Master plan and Strategy, which also informs the National and County Climate Change Framework Policy. The EAC regional Climate Change Master Plan (2011-2031), indeed, serves as the blue print to guide regional climate change response measures, in the long-term.

Through this extensive global and regional engagement, Kenya recognizes the imperative of a trans-boundary approach to climate change response in addition to initiatives at the national, county and local levels.

1.2. Rationale for Participatory Climate Risk Assessment (PCRA) Framework

Formulation of this PCRA was initiated within the framework of the National Climate Change Action Plan (NCCAP, 2013-2017) whose objective is to implement the National Climate Change Response Strategy (NCCRS).

A wide range of strategies and Programmes has been pursued by various governmental and non-governmental entities to address the effects of climate change in the County. However, these initiatives have taken place without a coherent policy framework and therefore

appeared reactive and uncoordinated. Accordingly, this Policy reflects the County Government's commitment to formulating a proactive, coherent and integrated climate change response that focuses on reducing vulnerability and building the resilience of the residents of the County, property, environment and economy. This will position the County to achieve the economic, social and environmental benefits of the transition to a low carbon climate resilient economy.

This PCRA report will facilitate a coordinated, coherent and effective response to the local, national and global challenges and opportunities that climate change presents. This can be achieved through the adoption of a mainstreaming approach that ensures integration of climate change considerations into the development planning, budgeting, and implementation processes.

This PCRA report is therefore designed to provide a framework to guide the development, and implementation of specific, detailed and costed climate change interventions through regular and periodic Climate Change Action Plans. This PCRA report therefore embodies the County's vision of achieving resilience to climate change variability, and promoting low carbon development. By putting in place, the framework the County aims to safeguard the wellbeing of its citizens, their property, and the County's prosperity in the face of a changing climate.

1.3 Background of Nandi County

1.3.1 Position and Size

Nandi County is located in the North Rift region of Kenya and covers an area of 2884.4 square kilometers (KNBS 2019). It borders the following Counties; Kakamega to the West, Uasin Gishu to the North East, Kericho to the South East, Kisumu to the South and Vihiga to the South West. The County lies between latitude 0056N to the North and 0011S to the south and longitude34045E to the West while the Eastern boundary reaches longitude 35025E. The County has 6 sub-counties; Emgwen, Mosop, Nandi Hills, Tinderet, Aldai and Chesumei.

Figure 1: Map of Nandi County

1.3.2 Socio-Economic Characteristics

The main economic activities in Nandi County are Crop and livestock production activities. Key agricultural value chain commodities in the county include maize, beans, bananas, kales, onions, sweet potatoes, cattle, sheep, goats, poultry, and bee keeping (apiculture).

1.3.3 Energy, Transport, Infrastructure and ICT

The total length of classified roads is 286 Km with bitumen surface covering over 280 Km, gravel surface 1214 Km and earth surface 3234Km. Furthermore, the County government of Nandi has completed 4.1km of urban tarmac roads in Kapsabet and Nandi hills towns, a bus –park in Lessos urban centre and 12No. Reinforced concrete bridges, 4No. Steel footbridges as well as 38 vented drift culvert crossings across the county. The county has also installed a total of 40 street and public area lighting in major urban centres. However, there is need to improve road connectivity and access by opening up of new roads and improving the earth roads to murram and bitumen standards as a long term solution to the poor state of roads especially during the rainy seasons. Information, communication technology plays a critical role in improving economic development. There is already an established sub-county information and documentation Centre (SCIDC) in the County at Emgwen sub-county. The County has access to many radio station signals, three of which broadcast in the local dialect. In addition, major national newspapers are circulated in the County.

The use of public postal services in Nandi County has dwindled over the years. Thiswas occasioned by an increase in the number of privately owned courier services and

internet/mobile connectivity. The main courier service providers in the County are G4S, Easy Coach, Akamba Road Services and Classic Shuttles.

The entire County is sufficiently covered by mobile network; and landline services are fairly distributed although mostly are restricted to offices. The reason for this is attributed to the wide coverage and convenience brought about by adoption of mobile telephony. Presence of optic fibre cable in the County has improved internet connectivity within the County. Internet connectivity has been improved through cyber cafes as well as personal connections via modems and routers.

The main sources of household cooking energy in the County are firewood, charcoal and paraffin. This has however contributed to vegetation degradation and increase in related health complications amongst the population

1.3.4 Education and Literacy

The County has 2,462 ECD centres with 79 percent of them being publicly owned, a total of 832 primary schools with 651 being publicly owned, 15 registered polytechnics/Vocational Training Centres offering Vocational Education and Training (VET)

1.3.5 Agriculture

The main food crops produced in the region are maize, beans, Finger millet, Sorghum, Sweet potatoes and cassava which cover a total of 105, 087 Ha. The main cash crops aretea, coffee and sugar cane.

1.3.6 Health Services

The health and sanitation department is mandated to provide essential and comprehensive quality health services. This is achieved through provision of promotive, preventive, curative and rehabilitative services to the residents of the County. The County is still facing challenges of low number of health workers, inadequate health infrastructure, high burden of communicable diseases and low immunization coverage. In its efforts to address these, the County government will implement various programs including curative, preventive and

promotive programmes and administrative services in a systems approach to promote good healthstatus to the County residents.

1.3.7 Water, Environment and Natural Resources

The largest forest cover in Nandi County is the South Nandi forest, which is a tropical rain forest. It covers an area of 20,150 Ha. The North Nandi forest, which is also a tropical rain forest, covers 16,004 Ha and extends from Nandi Central to Nandi North. High population growth has exerted pressure on land and eventually led to encroachment into the forest, riparian reserve and fragile ecosystems. Farmers, in search of fertile land, have encroached into wetlands and practiced farming in riparian reserves. This has resulted in serious environmental degradation.

Deforestation, overgrazing and charcoal burning have led to soil erosion, landslides, mudslides and rock falls. Wood fuel forms the main source of energy with over 90 per cent of the population (urban and rural) depending on it. Demand for agricultural land and wood products are high due to the ever-increasing urban and rural population. This has led to exposure of land to agents of soil erosion and pollution of water bodies. This calls for appropriate interventions to meet the demands of the community, increase tree cover within the private farms and forest cover in the gazetted land.

Nandi County is endowed with various water resources. There are six permanent rivers in the County namely Kipkaren, Kingwal, Kundos, Mokong, Yala and Ainabng'etuny. The County also has numerous permanent springs scattered across all the sub-counties.

1.3.8 Youth, Gender, Sports and Culture

Nandi County is rich in cultural heritage that needs to be developed, promoted and, preserved for social and economic gains. Infrastructure such as museums, art and cultural centers, multimedia media and recording studio need to be developed to aid the county in harnessing its cultural heritage. There is one major museum within the County that is Koitalel Samoei, which is managed, by the National museums of Kenya. The County is currently constructing one modern training camp based in Kapsabet town. There are 12 training camps, which are privately owned with residential, and facilities for local and international athletes. Nandi County prides itself as a source of champions due to its prowess in producing world record beaters. Because of its hilly topography and high altitude, which is conducive for training, the County attracts a huge number of national and international athletes. The County has three stadia, which are currently under Construction namely; Kipchoge Keino, Nandi Hills and Kaptumo.

1.3.9 Trade, Industry, Mining and Tourism

The main National Reserve in Nandi County is the Bonjoge National Reserve in Nandi South Sub-County. There are plans to upgrade its status into a National Park to attract more funds for conservation and reclamation. The other attraction sites in Aldai Sub County are the Nandi Rock and the South Nandi Forest. The South Nandi forest requires huge investment in conservation and maintenance to turn it into a tourist attraction with huge benefits to the county. This could be done by encouraging eco- tourism, which earns revenue and ensures that the forest resource is conserved.

In Chesumei and Mosop Sub Counties, there is the Chepkiit Water Falls on the Kipkaren River and in Emgwen and Chesumei Sub Counties, we have the Kingwal Swamp near Chepterit area, which is host to the famous Sitatunga, a rare gazelle species and is a breeding ground for the endangered Crested Cranes. There is also the Tindinyo falls along River Yala. In Nandi Hills Sub County, there is the famous Koitalel Samoei Museum and the Keben caves.

Nandi County currently has about 66 identified tourist sites scattered across the County, but

largely have not been fully developed to be able to attract visitors. Some of the tourist products and attraction sites in the County include; Nature Based tourism, Agro tourism, Sports tourism, Eco tourism and Cultural tourism. There are 223 trading centres under the jurisdiction of County of Nandi, 34 under the Municipality of Kapsabet and 12 under the Urban Council of Nandi Hills.

1.4 Purpose of the PCRA Report

The Participatory Climate Risk Assessment report identifies major climate risks, sources of vulnerability and priority adaptation actions to address the identified risks. Through the PCRA process, communities identified climate change hazards in their wards, impacts of the hazards and prioritized response actions for incorporation into the County Climate Change Action Plan (CCAP) and the County Integrated Development Plan (CIDP). PCRA is also one of the conditions for accessing the Climate Resilience Investment Grants from the National Treasury's Financing Locally Led Climate Action, (FLLoCA) program.

This report and the County Climate Change Action Plan shall guide climate change programs and projects by various actors including government agencies, Civil Society Organizations (CSOs) and Private sector in the County.

1.5 The Nandi County PCRA Process

As described in the PCRA guide, the PCRA was implemented through eight main steps. These are: Formation of the technical working group; training of the technical working group; mapping of stakeholders; preparation for community engagements; conducting participatory risk assessment at ward level; preparation of ward level risk assessment reports; data analysis and preparation for county level multi-stakeholder workshop; multi-stakeholder climate change risk assessment workshop and final report writing as detailed in the section below:

Step 1: Creation of the Technical Working Group

The Chief Officer in Charge of Climate Change constituted the technical working group in April 2023 through appointment. Considerations for appointment to the technical working group were representation of climate change relevant sectors such as environment, water, agriculture and

gender; commitment to create time for the exercise, knowledge, skills and experience relevant to the task among others. Those appointed to the committee were county directors and technical officers in charge of Climate Change, Public Participation and Open Governance, Technical and Vocational Education, Gender and Social Services, Crops Development, Livestock Production, Public Health, Water and Sanitation. The county director of meteorology and a Civil Society Organization (CSO) representative were also incorporated into the task team. In total, the technical working group had 18 members.

This technical working group was supported by a wider consultative group, which provided advice through the whole process. The wider group had a broader membership, which included the Ward Climate Change Planning Committees, County Disaster Management Unit, Economic Planning, County Climate Change Steering Committee, National Government agencies such as NEMA, KMD, Kenya Forests Services, Members of the Civil Society organization, Academia and members from the Communication Department and Finance. Table 1 below summarizes the PCRA Process.

Table 1: Overview of the PCRA Process

Step	**Activity**	**Dates**	**Duration in Days**
Step 1:	Constitution of the Technical Working Group	28/3/2023	
Step 2:	Training of the Technical WG	11-13/04/2023	3
Step 3:	Stakeholder Mapping	14/4/2023	1
Step 4:	Preparation for Community Engagements	17-19/4/2023	3

Step 5:	Ward Based engagements on PCRA	20/4/2023-13/5/2023	15
Step 6:	Data Analysis and Preparation for County Level Workshop on PCRA	15-18/5/2023	4
Step 7:	County Level Workshop on PCRA	22-23/5/2023	2
Step 8:	PCRA Report	24/5/2023-8/6/2023	10
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Step 2: Training of the Technical Working Group

The Technical Working Group was trained for three days on the PCRA process. The training involved understanding of the process, its relevance in development planning and implementation and how each step of the PCRA process should be conducted as described in the PCRA guidance templates. The Director Climate Change coordinated the training with the guidance by the facilitators from Vihiga County Department of Climate Change.

Step 3: Stakeholder Identification and Analysis

The Technical Working Group identified the stakeholders during the training session broadly categorized to represent Individuals/organizations formally responsible for climate action and building resilience; involved in climate action and responses to climate impacts; those with knowledge and expertise relevant to climate adaptation and building resilience and community representatives and those impacted by climate change. Table 2 below summarizes the analyzed list of stakeholders.

Table 7: Stakeholder mapping and analysis summary

High Influence, Low Interest	**High Influence High Interest,**
• Commercial Banks (KCB, Equity Bank) • Chief Officers - (Water & Sanitation; Gender, Youth, Culture and Sports; Physical Planning, Lands and Urban Development; TVET, Transport and Infrastructure) • County Directors: TVET, Social Services, Finance, Disaster Management, Transport and Infrastructure)	• CECM –Environment, Water, Energy and Natural Resources • Chief Officer (C.O) –Environment, Energy and Natural Resources • Agriculture & Livestock. • Administration and Public Service – Sub-county Administration, Disaster Management Unit, Public Participation. • County Directors: Water, Climate Change; Environment, Energy and Natural Resources; Meteorological Services; Public Health; Crops Development, Economic Planning; GIS; Water and Sanitation; ; and Social Services • Nandi County Climate Change Steering Committee • Civil Society Organizations (ADA Consortium, ADS Western, Nature Kenya,) • Kenya Forests Service and Kenya Wildlife Service • National Environment Management Authority(NEMA)

	• Nandi Municipal Board. • One-Acre Fund. • Green Belt Movement • Finance Department • Media
Low influence, Low Interest • Communication Officers • Secretarial staff	**Low Influence, High Interest** • County Environment Committee(CEC) members • Environment officers • Sub County Water Officer • Ward Climate Change Planning Committee • Members Academic and Research Institutions (e.g. Koitalel Samoei University College, University of Eldoret, Kaimosi Friends University, Kibabii University, Masinde Muliro University)

Providers of scientific and statistical data such as the GIS team, the Meteorological department, Social and County Planning Departments were also considered. The stakeholder analysis was conducted to categorize the stakeholders in terms of their interest and influence.

Step 4: Preparation for ward level engagements

The Climate Change Unit sensitized the citizens on radio of the upcoming climate change risk assessment exercise and mobilized participants with the support of Ward Administrators. Given the small geographic area of the County, the TWG adopted a process where the wards were engaged in clusters of 4-7 wards per venue for 2 days considering proximity to each other as well as common climate change challenges. The identified community participants were mobilized through the office of the respective ward administrators and the respective ward climate change planning committees. Programs, engagement tools and other materials relevant to the community engagements were prepared in advance. These materials include: the program, community guiding questions, flip charts, marker pens, masking tapes, writing materials and the note takers

feedback forms. The technical working group took 2 days to prepare for ward level engagements.

Step 5: Engagement of Communities at Ward Level on PCRA

A range of 10-13 participants were mobilized from the wards in line with the mobilization criteria stated above. For effective deliberations, 13 participants or slightly less were found to be a more ideal number while 25 were too many to accord a majority an opportunity to participate. The participants mobilized consisted of different livelihoods groups such as farmers, traders, marginalized groups, women, youth, Faith Based Organizations (FBO), Civil Societies Organizations (CSO) and PWDs in addition to the members of the Ward Climate Change Planning Committees. Other participants included Sub County Agriculture Officers, Ward Agricultural Officers, Sub County Administrators, Ward administrators, Ministry of Interior and Coordination, Foresters, NEMA and other technical Officers with ward level mandate.

In the first session of the community meetings, all the 4-7 wards clustered were jointly taken through an introduction session. The introduction session covered the significance of the PCRA process, overview of climate change trends followed by explanation of the process and its application in the county planning and development cycle. The participants were then segregated into their respective wards where member of the technical team and note taker was assigned. The process took 2 days per cluster and it took the Technical WG 12 working days to cover all the 30 wards.

The community engagement meetings started by sketching a climate hazard and community assets map. Thereafter, the climate change risk assessment tools were administered to determine the main hazards, prioritize them, identify vulnerabilities, local response actions and propose adaptation strategies. The output of this process was the community has identified key climate change risks, hazards, and priority response measures.

Step 6: Data Analysis and Preparations for County Level Participatory Climate Change Risk Assessment

The data from the wards was summarized into reports and risk maps digitized by the GIS unit capturing the main hazards and prioritized response actions per ward and at the sub county level.

This was followed by two-days meeting of technical committee to develop the workshop program and share responsibilities among team members as well as agree on the workshop execution strategy. The County Director Meteorology prepared an overview presentation on historical, current and projected climate scenarios for the County while the Director Economic Planning prepared presentation on the socio-economic status of the County. The Directors GIS and Climate Change prepared to present the prevalent climate hazards and their geographic distribution in the County. A concept for the workshop was developed which detailed the background of the exercise, objectives, program and list of invitees.

Step 7: County Level Workshop on Participatory Climate Change Risk Assessment

The 2-days workshop was held from 18th to 19th May, 2023 with objective to validate the findings from the wards and have the multi-stakeholders incorporate their views into the Nandi County PCRA process. The workshop had 48 participants who included the PCRA Task Team, Government Officers from line Departments such as Water, Agriculture, Environment, Meteorology, World Food Organizations (FAO), Green Belt Movement (GBM), Youth Bunge, Climate Change and Public Health; representatives of Civil Society Organisations implementing climate change related projects; academia; community representatives among others.

During the workshop, the participants were introduced to the general overview of the County followed by the current and projected climate change scenarios. This presentation was followed by identification of climate change hazards, which was compared to the hazards that had been prioritized by the wards and followed by updating the hazard maps from the wards. The participants prioritized the hazards, response measures as well as drivers of climate change vulnerability. The wards were clustered into sub-counties due to similarity of livelihoods pursued as well as for cross-fertilisation of ideas.

Step 8: Participatory Climate Risk Assessment Report

The team then developed a participatory climate risk assessment report through consolidating the data gathered throughout the risk assessment process. It took about 1 month cumulatively to develop the report, which was consolidated by the director in charge of climate change. The technical expert contracted by the national treasury provided the necessary backstopping and

review of the report until final draft was developed.

CHAPTER TWO: NANDI COUNTY CLIMATE HAZARD PROFILE

2.1 County climate hazard profile

2.1.1 Current and Historical Climate Hazards and Trends

Nandi County receives an average rainfall ranging from 1200mm to 2000mm per annum. The Northern parts of the County receive rainfall ranging from 1,300mm to 1,600mm per annum. The Southern half, which is affected by the Lake Basin atmospheric conditions, receives rainfall as high as 2,000mm per annum. The lowest rainfall is experienced in the Eastern and North eastern parts of the County. Higher amount of rainfall is experienced in Kaptumo in Nandi South, Nandi Hills, Kapsabet and Kobujoi. Two major rainy seasons are experienced in the County, the Long and Short rain seasons. The dry spell is usually experienced from end of December to mid-March. Temperatures have historically ranged from 15-28°C

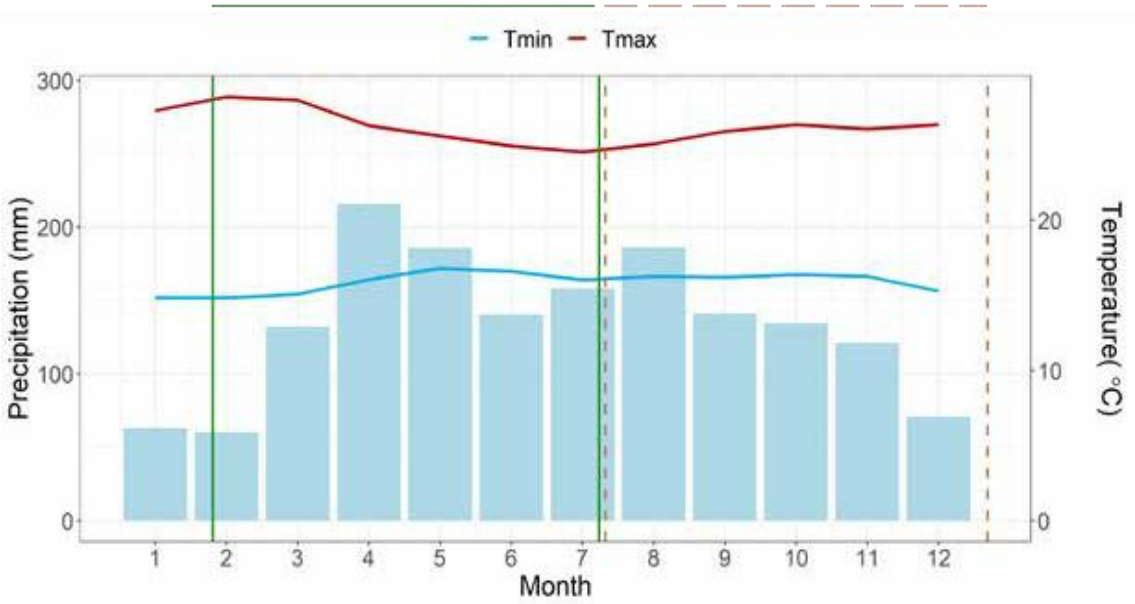


Figure 2: Historical mean monthly temperature and precipitation (average 1985-2015) in NANDI County. Bars represent mean monthly precipitation, whereas red and blue lines represent maximum and minimum mean monthly temperatures, respectively. (Source: Nandi Meteorological Office)

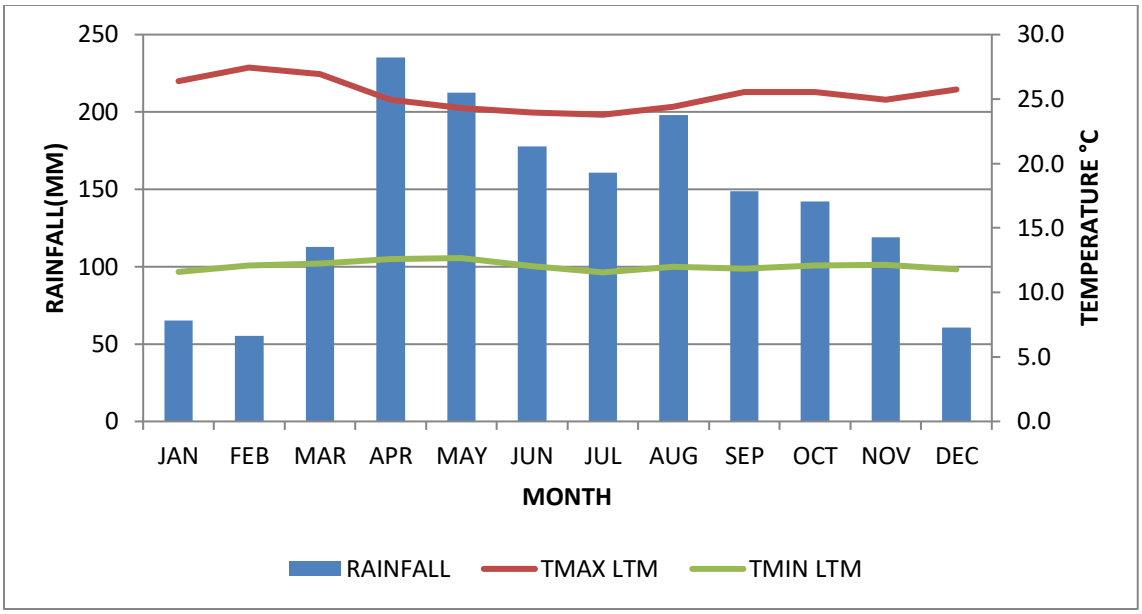


Figure 3: Historical mean monthly precipitation, mean monthly maximum temperature and mean monthly minimum temperature (average 1991-2020) for Kapsabet in NANDI County. Mean Annual Rainfall 1700mm (Source: Nandi Meteorological office).

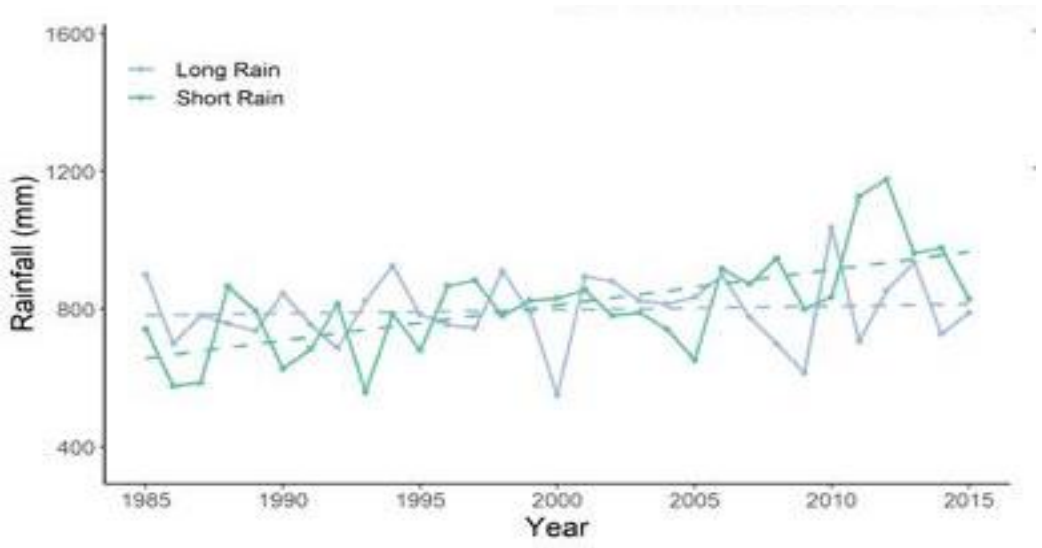


Figure 4: Annual total rainfall trends for the long rainy and short rainy seasons in Nandi County in the past (1985-2015)

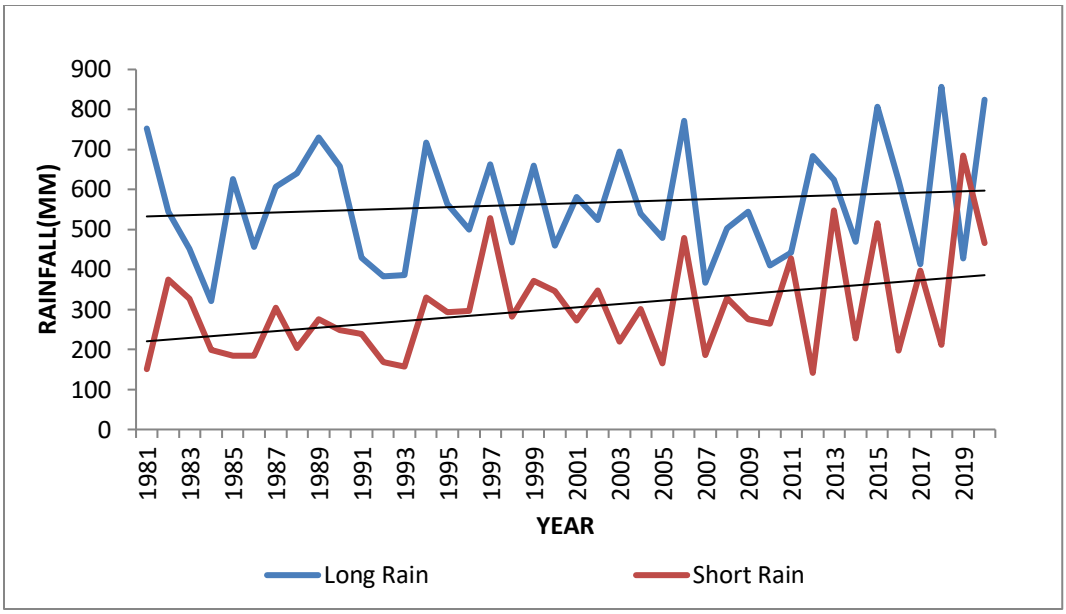


Figure 5: Annual total rainfall trends for the long rainy and short rainy seasons for Kapsabet in the past (1981-2020). (Source: Nandi Meteorological Office)

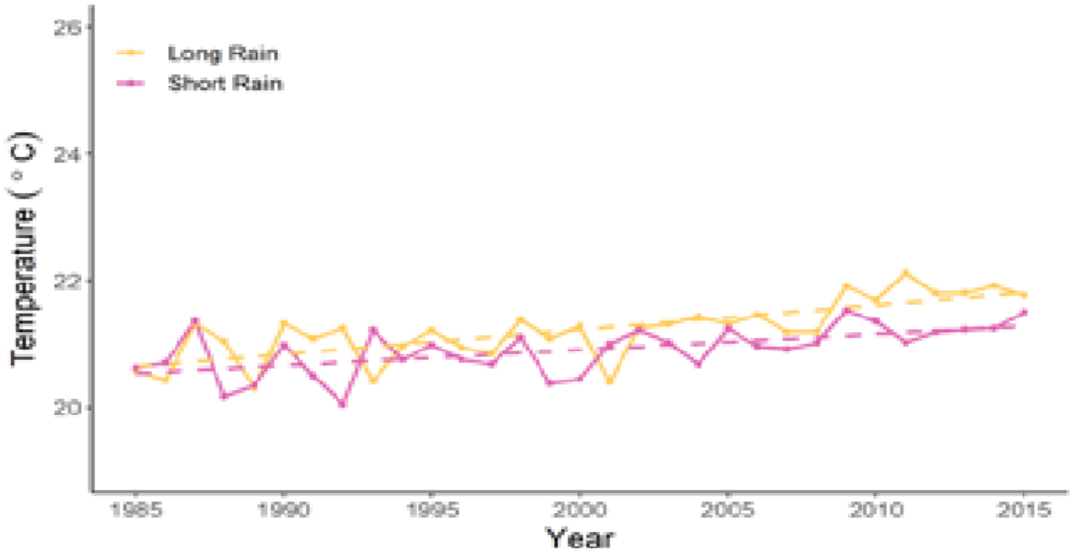


Figure 6: Mean annual temperature trends for the long rainy and short rainy seasons for the past 30 years (1985-2015)

Observed Rainfall Trends/patterns in the County

- The start dates and end dates of the rainy seasons is changing, rainfall starting late and ending early. Shortening rain season.

- rainfall seasons are Shifting
- More dry spells occurring within a rainy season (Number of dry spells occurring within a rainy season increasing)
- Number of rainy days per season decreasing

2.1.2 Current and Historical climate hazards

The County has experienced and is experiencing a number of climate hazards. This include Lightning, Drought, Soil erosion, Frost, Strong winds, Hailstones, Landslides, floods, prolonged dry spell, Changes to growing season, excessive rains, Low temperatures, Diseases and Pests and High temperatures. Their frequencies and severities have since greatly increased in the last decade, which can be attributed to Climate Change, & Variability resulting from the global warming.

2.1.3 Precipitation and temperature trends in Nandi County

In generating this profile, we assessed past trends and future projections of precipitation and temperature, and predicted related hazards from these two variables. These hazards included extreme hydrological events like flash floods, droughts, moisture stress, heat stress, and changes in the start and length of the growing seasons. From the meteorological data and interactions with communities, trends relating to rainfall and temperature were:

- The start and end dates of the rainy season have been changing and becoming less regular across the County leading to shifts in the start of the growing season. For each season, heavy precipitation events of extreme rainfall for at least five consecutive days were recorded which is indicative of risk of floods and flash floods.

- The total annual rainfall trends showed a decrease of the precipitation in the past which will continue in the future (2020-2040) for the long rainy season. During the short rainy season, the rainfall will increase. In both cases, projections show an increase of rainfall for the period 2041-2060. The annual mean temperature trends show an increase of temperature for both seasons in the past and in the future. The short rainy season will remain slightly cooler (KMD 2020)

- The number of consecutively dry days occurring within a season are about one week and are likely to increase which is an indicator of low precipitation.

The annual mean temperature has been generally rising from 24^0C historically to 26^0C and this increase is for both seasons resulting from the global warming.

2.2 Exposure and vulnerability profiles of the County

The main climatic hazards in Nandi County are erratic rainfall patterns, prolonged dry spells, increased pests and diseases. Temperatures have generally increased while hailstorms have increased in frequency and intensity. The effect of these hazards include: floods and flash floods, soil erosion, reduced soil fertility, environmental degradation, increased pests and disease, landslides, increased number of continuous dry days within rainy seasons.

Vulnerability is determined by the people's livelihoods and the resources available to enable them cope with the hazards or their impacts. Several factors compound the impacts of climate change and variability, and at the same time curtail communities' abilities to cope with these impacts: reductions in agricultural land area, declining soil fertility, eroded soils, and environmental degradation caused by cultivating on steep slopes, high input costs, and poor marketing systems. The PCRA process established the most vulnerable groups to climate hazards as:

2.2.1 Households that depend on Rain fed Agriculture for livelihoods

About 80% of the residents of Nandi primarily depend on low-input rain fed agriculture, and with the frequent changes in rain patterns most households that depend on the agriculture are exposed to the impacts of climate change. Furthermore, women are the highest portion of laborers in the agricultural sector (60% household and 40% hired) (ASDSP,2014) which further makes them more vulnerable to the effects of climate change. Unsustainable agricultural practices such as cultivation of sloppy areas, overstocking and overgrazing particularly expose the communities depended on agriculture to climatic shocks. The vulnerable groups do not have equal access and control over important resources such as land due to cultural beliefs that bars women and children from owning family assets.

Crop farmers are particularly more vulnerable to climate change due to the sensitivity of crops to delays in the onset of rains, post-harvest losses, increased pests and diseases. There is generally low investment in irrigation within the county, which compounds the vulnerability of household's dependent of crop farming. Livestock farmers on the other hand suffer reduced productivity due to seasonal reduction in fodder and water for livestock during dry seasons.

2.2.2 Small scale traders

The main business activities in Nandi are small-scale traders dealing in household merchandise, cereals, vegetables and fruits. Seasonal variability in supplies of agricultural produce affects traders; in addition, infrastructure destruction during heavy rains affects transportation of goods especially using motorcycles.

2.2.3 Households with low levels of income

Poverty is the first proxy indicator of vulnerability and about 35.9% of the population in Nandi County live below the poverty line (less than USD 1.90/day), ranked 36th nationally in terms of poverty (Nandi CIDP, 2018-2022). Firewood is the main type of cooking fuel in Nandi County, utilized by 97% of households as compared to 55% nationally. For lighting, 60% of households in Nandi County primarily use electricity, as compared to the national average of 50%, while 28% of households in Nandi use paraffin lamps. These high poverty levels make most residents of the County vulnerable to impacts of climate hazards.

2.2.4 Households and farmland in sloppy areas

Impacts of climate hazards such as eroded soils, landslides, falling rocks and gulleys are more common in sloppy areas. Wards across all the six Sub Counties such as Tindiret, Songhor/Soba, Chemase, Kapchorua, Kapsimatwo, Terik, Kabwareng, Kemeloi/Maraba, Kapkangani, Kiptuiya, Kosirai/Ngechek, Ollesos, Kilibwoni, Sangalo/Kebulonik, Ndalat, Kurgung, Surungai, Kipkaren and Chepterwai Wards are particularly more vulnerable to landslides while community members bordering wetlands were more exposed to erosion due to the steep slopes and human activities that clears vegetation cover. Those residing on hillslopes and other steep slope areas such as Ngatipkong, Tindiret, Chelemek, Cherondo, Chepsangor and Kabiyet Hills are exposed to topsoil erosion, rock falls etc. Homes and Farmlands near water sources were also vulnerable to

floods and flash floods resulting from episodes of intense rainfall.

2.2.5 Rural households depended on springs and streams

More than 85% rural households in Nandi depend on springs and wells for water whose output has large seasonal variability. During prolonged dry periods, the overall yields of water in these sources drastically reduces leading to time wastage and conflicts. During periods of excess rainfall, it was noted that the overall quality of water in these sources drastically declines due to sedimentation, with springs being more affected. The rural households depend more on agricultural activities for livelihoods as compared to urban households hence making them more vulnerable to the impacts of climate change.

2.3 Differentiated impacts of climate hazards and risks

Projected climatic trends indicate that Nandi County shall receive enhanced rainfall for the short rain season and reduced rainfall for the long rains season. Consecutively dry days within and between rainy seasons are expected to increase by an average of 5 days suggesting a marginal increase in incidences of prolonged dry periods with likelihood of crop failure and reduced quantities of water from natural sources. The maximum number of running rainy days will average 5 days, which indicates risks of floods, flash floods, infrastructure destruction and crops. Increase in disease vectors such as mosquitoes affect children, the expectant mothers, the elderly and the terminally ill due to lower levels of immunity hence predisposed to contract malaria more than the rest of the population. Reduced quality of water also affects the mentioned categories due to water-borne diseases.

The elderly and Persons with Disabilities (PWD) were found to be more vulnerable to reduced water in springs as physical limitation barred them from competing for the resource in the periods of reduced yields. It was also noted that destruction of infrastructure during periods of excess rainfalls paused more challenges for the PWDs. Reduced quantities of water in springs affects women more because culturally, women bear the responsibility of fetching water for their families and carrying out cleaning chores. As water in the springs and wells declines during periods of prolonged dry periods, women take more time on queues at water points. For cultural reasons, most women have no rights towards ownership of the land resources, which limits the

extent to which they can make decisions about investment on land.

2.4 Spatial Distribution of Risks

Nandi County has six sub counties namely Mosop, Chesumei, Emgwen, Tindiret, Nandi Hills, Aldai and Tindiret; with a total of 30 wards. The spatial distribution of climate hazards across the sub counties is determined by the prevailing landscape formation and the human activities. Due to the small geographical size, the climate hazards across the County are almost similar. This section outlines the climate hazards and their impacts per ward across the six sub counties of the County.

2.4.1 Mosop Sub County

Mosop Sub County comprises of Seven wards namely Chepterwai, Ndalat, Kabiyet, Kurgung/Surungai, Sang`alo/Kebulonik, Kabisaga and Kipkaren. The main climatic hazards prevailing in Mosop are: Floods, heavy rainfall, prolonged dry seasons and lightening. As a result of the climatic hazards, shortage of pasture, crop failure, low yields in the farms, reduced quantities of water in streams, boreholes and springs are frequently experienced.

Pests such as locusts and armyworms have become more common, the prevalence of malaria is on the rise with 70% of population being at risk (Division of National Malaria Programme - DNMP 2021), and water borne diseases are on the rise. Soil erosion in the sub county is rampant which leads to reduced agricultural productivity, destruction of infrastructure such as roads and buildings, increase cost of farming and siltation of rivers. Heavy rains lead to flooding in low lying riverine area and growing of eucalyptus trees in water catchment areas have compounded the challenge of water shortage. Figure 6 below shows the spatial distribution of climatic hazards in Mosop Sub county.

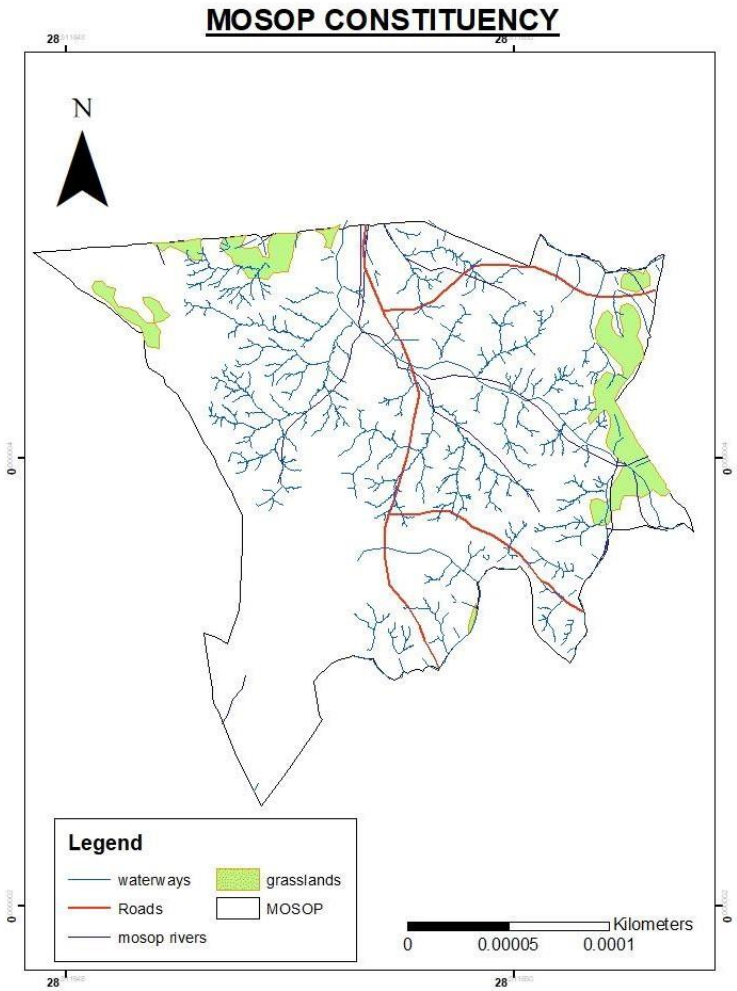


Figure 2: Mosop Sub County Climate Risk Map (Nandi County GIS Unit, Nandi County, 2022)

2.4.2 Chesumei Sub-county

Chesumei Sub County has six wards namely: Lelmokwo/Ngechek, Kaptel/Kamoiywo, Kiptuiya, Chemundu/Kapngetung, and Kosirai. The main climate change hazards in the sub county include Prolonged Dry seasons, Floods, and Frost, which adversely affects agricultural productivity, and cause post-harvest losses. Incidences of excess rainfalls lead to floods in the lower sides of the ward as witnessed in Kingwal wetland. Dry seasons have also become prolonged which leads to stresses on water sources.

Crop pests and diseases, which mainly include fall armyworms and African fall armyworms' invasion that occurs almost annually from 2013. The pests are usually tackled with traditional approaches such as concoctions of ashes with pepper while some farmers apply commercial

pesticides. Inadequate early warning systems and low levels of understanding of appropriate response mechanisms hinder response against the pests. Human disease causing vectors such as mosquitoes responsible for increased prevalence of malaria have also increased. Diseases associated with extreme temperatures such as pneumonia during cold seasons and respiratory diseases caused by dust during dry seasons; and crop failure such as tea have been recorded.

Landslides are also common in the area as a result interaction with human activities such as quarrying activities, artisanal mining, and cultivation on slopes, which are more pronounced. Figure 7 below shows the distribution of climatic risks and their impacts in Chesumei

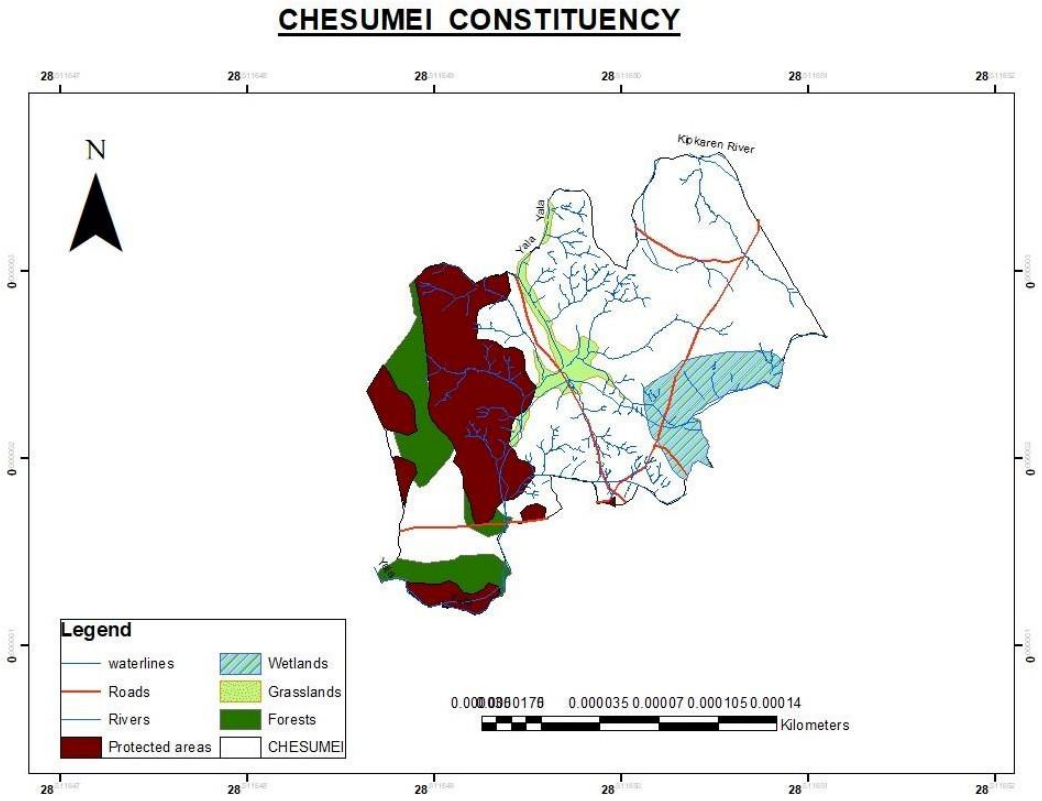


Figure 7: Climatic risks and their impacts in Chesumei

Figure 8: Pictures of floods in Kingwal wetland

2.4.3 Emgwen Sub-County

Emgwen Sub County has four wards namely: Kilibwoni, Kapsabet, Kakangani and Chepkumia The main climatic risks in Emgwen Sub County are: Prolonged dry seasons, floods and lightning. Water sources have reduced in quantity and quality of water sources due to interaction between climate risks such as prolonged dry and human activities such as growing of eucalyptus in water sources and unsustainable sand harvesting.

Destruction of vegetation cover along river banks have led to increased riverbank erosion, flooding and siltation in the rivers. Delay in onset of long rains and prolonged dry season leads to delay in planting, reduced quantities of water in springs, rivers and streams, crop failure and insufficient pastures. Lightning is also common in the sub county especially in Kapsabet and Kilibwoni wards. These climates related challenges are compounded by poor agricultural practices.

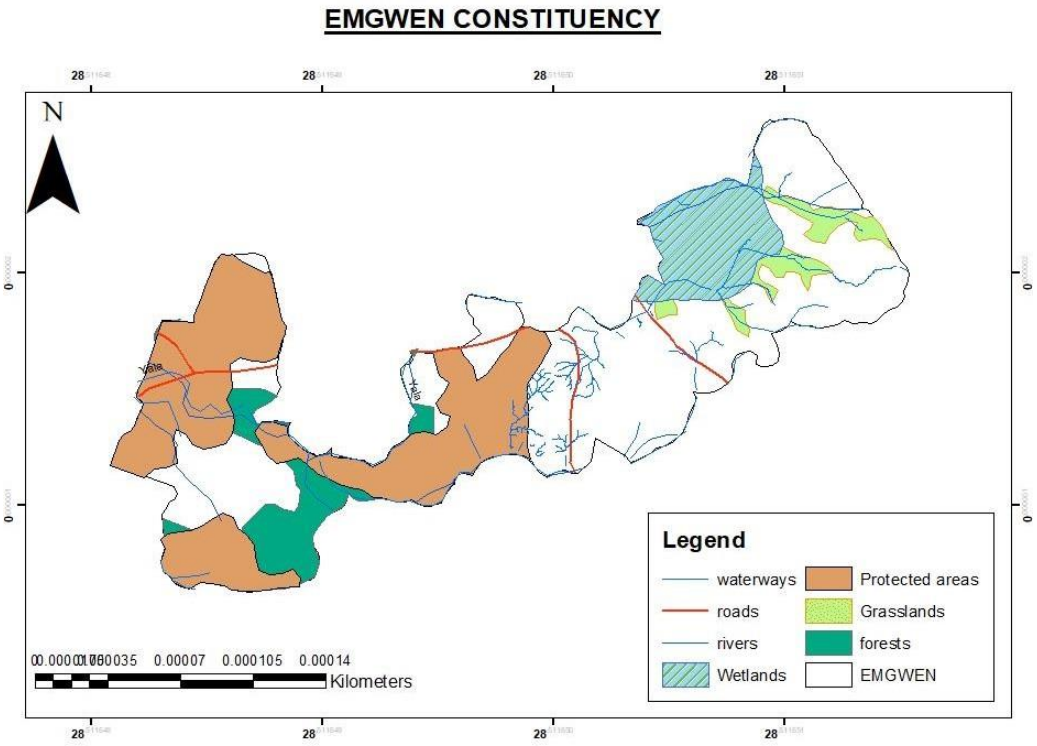
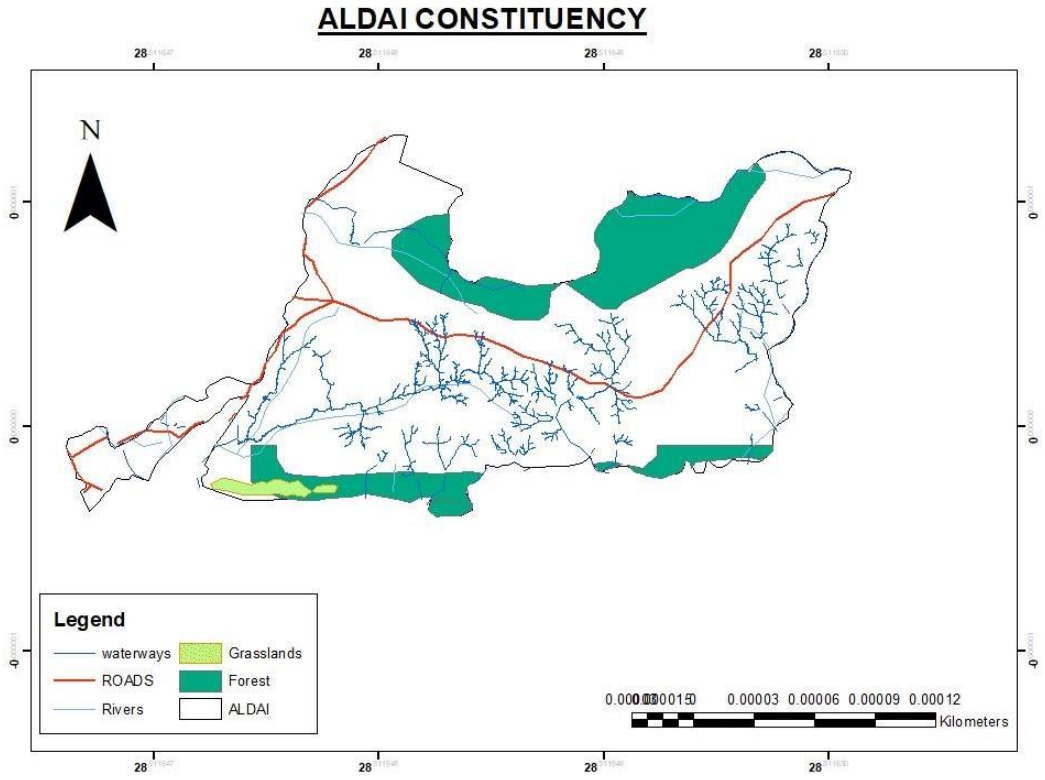


Figure 9: Emgwen Constituency

2.4.4 Aldai Sub-County

Aldai Sub County consists of six wards namely: Kaptumo/Kaboi, Koyo/Ndurio, Kobujoi, Kemeloi/Maraba, Terik and Kabwareng. The climate risks dominant in Aldai Sub County are prolonged dry seasons, Heavy rains, wildfires, Landslides and Hailstorm. Delays in long rains affects agricultural calendar leading to crop failure, subsequent food shortage, water scarcity and reduction in crop yield.

The rainfall received during long rain season has drastically reduced as compared to the short season whose rainfall quantities has increased which leads to destruction of infrastructure and flooding in farmlands. Wetlands have greatly reduced due to climatic stresses and human interference such as encroachment and growing of eucalyptus around catchment areas. Soil erosion is rampant around the quarries, sloppy areas, farms and mining sites, which has led to siltation and pollution of water in rivers and springs. Emerging insect pests and diseases have increased leading to low crop productivity and increase in vector borne diseases such as malaria. Furthermore, landslides and rock falls have contributed to land degradation, property destruction as well as loss of lives in Chebukundi and Kimaren.



Chebukundi

Figure 10: Aldai Sub County Climate Change Risks Map, (GIS Unit, Aldai County, 2022.

2.4.5 Nandi Hills Sub-County

The Sub County is comprised of four wards namely: Nandi Hills, Kapchorua, Ollesos and Chepkunyuk. Nandi Hills's sub county's main climate risks and hazards are Heavy rainfall, Prolonged dry seasons, Floods, Lightings and Landslides. The irregular rainfall patterns and increased rainfall intensity especially during the short rains coupled with human activities such as sand harvesting and deforestation has increased soil erosion and consequently soil infertility hence reduced crop productivity as well as formation of gulleys. This increase in intensity of rainfall has also contributed to increased incidences of flooding and vector borne diseases such as malaria. Climate hazards are compounded by human activities such as deforestation and cultivation in fragile areas as is the case with Kapchorwa, Kapkoros, Ngatipkong', Cherondo, Setek, Kabikwen, Kapsimatwo and Lengon which enhances landslides and rock falls. Heavy rainfall has also lead to increased surface run offs causing water pollution in the downstream thus increasing waterborne diseases, eutrophication and death of aquatic life.

Prolonged dry spell has resulted to water shortage, crop failure leading to food and pasture shortage. There is observed increase in temperature above normal resulting to increase in crop pests leading to low crop productivity. On incidences where temperatures fall too low, there is increase in human, animal and crop diseases.

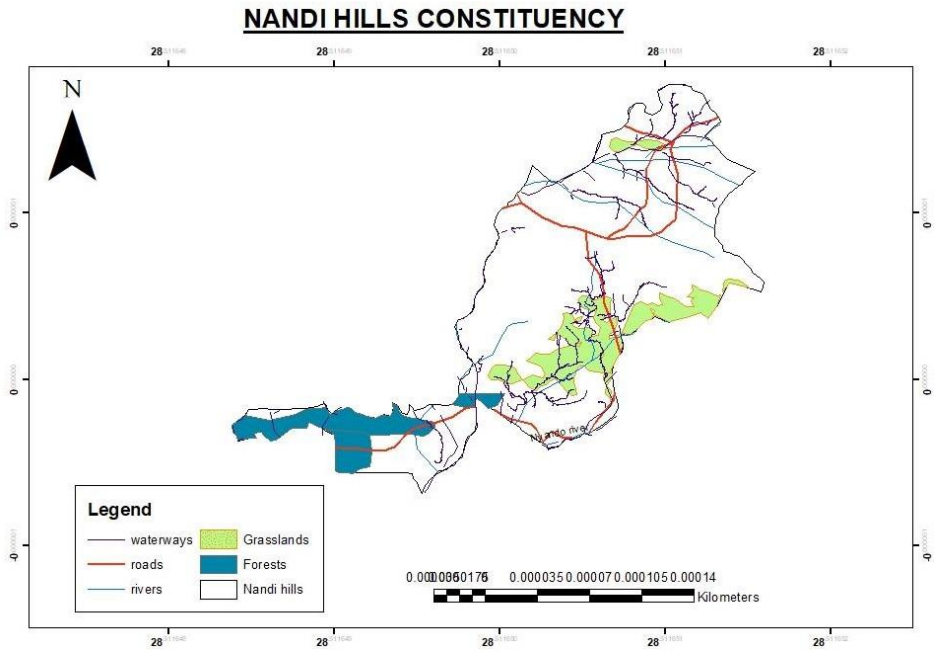


Figure 11: Nandi Hills Constituency

2.4.6 Tindiret Sub-County

The Sub County is comprised of four wards namely: Tindiret, Songhor Soba, Chemeli/Chemase and Kapsimatwo. Sub county's main climate risks and hazards are Heavy rainfall, prolonged dry seasons, Floods, Lightings, storms, and Landslides/ rock falls. The irregular rainfall patterns and increased rainfall intensity especially during the short rains coupled with human activities such as sand harvesting and deforestation has increased soil erosion and consequently soil infertility hence reduced crop productivity as well as formation of gulleys. This increase in intensity of rainfall has also contributed to increased incidences of flooding resulting to loss of lives, increased in pest and diseases, loss of property, destruction of infrastructure and economic resources. Prolonged dry spell has led to; water scarcity, food insecurity, loss of forage, accidental fires, loss of vegetation and extinction of flora and fauna. Climate hazards are compounded by human activities such as deforestation and cultivation in fragile areas as is the case with Tindiret, Kapkitany, Cheptonon, Uson, Tebeson, Mbogo Valley, Chebirir, Tuiyobei, Kabolebo, Kabirer, Tulwapmoi, Setek, Ainapngetuny, Meteitei, Olemotit, Chepchabai and Kamelil.

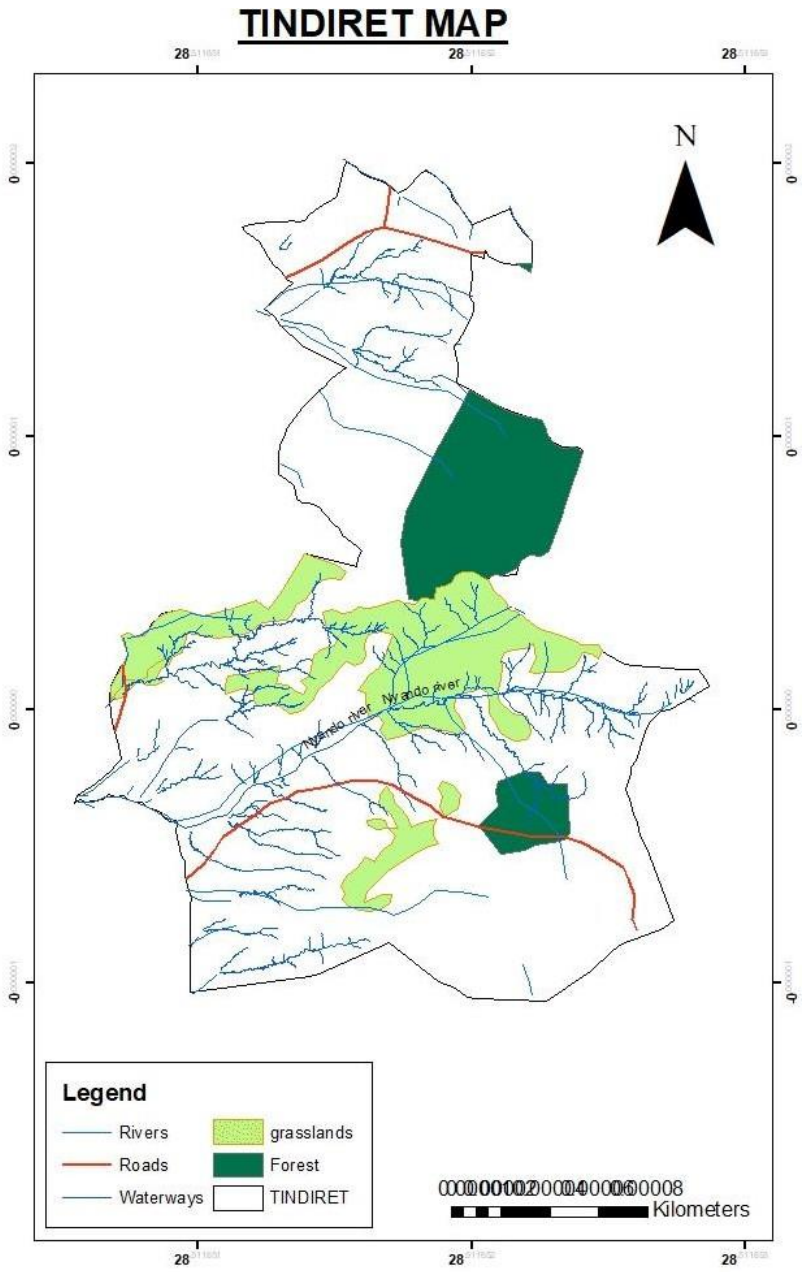


Figure 12: Map of Tinderet Sub-County

Figure 13: Erosion in Tinderet

CHAPTER THREE: FUTURE CLIMATE SCENARIOS FOR THE COUNTY

3.1 Future Climate Scenarios for the County

3.1.1 National and downscaled climate change projections

The National climate projections indicate that there will be a 1.7°C increase in average temperatures by 2050 and 3.5°C by the end of the 21st century (World Bank Kenya climate risk county profile). The number of hot days and hot nights will increase by 2050 and consequently reducing the number of cold days and nights.

The rainfall is expected to increase slightly by 2050, especially for the 'short rains' which occur between October and December. Precipitation will remain highly variable and uncertain with extreme rainfall events likely to increase in frequency, duration and intensity. The period between heavy rainfall events is likely to increase as well as the proportion of rainfall that occurs in extreme rainfall events.

3.2 County future climate scenarios

There is the likelihood of warming with average temperatures expected to continue rising. The annual mean temperature trends show an increase of temperature for both seasons in the past and in the future (Figure 7 below). The average rainfall is expected to increase slightly by 2050 especially for the 'Short Rains'. The total annual rainfall trends showed a decrease of the precipitation in the past which will continue in the future (2020-2040) for the long rainy season. During the short rainy season, the rainfall will increase. In both cases, projections show an increase of rainfall for the period 2041-2060 (Figure 14 below). The precipitation will remain highly variable with extreme rainfall events likely to increase in frequency, intensity and duration.

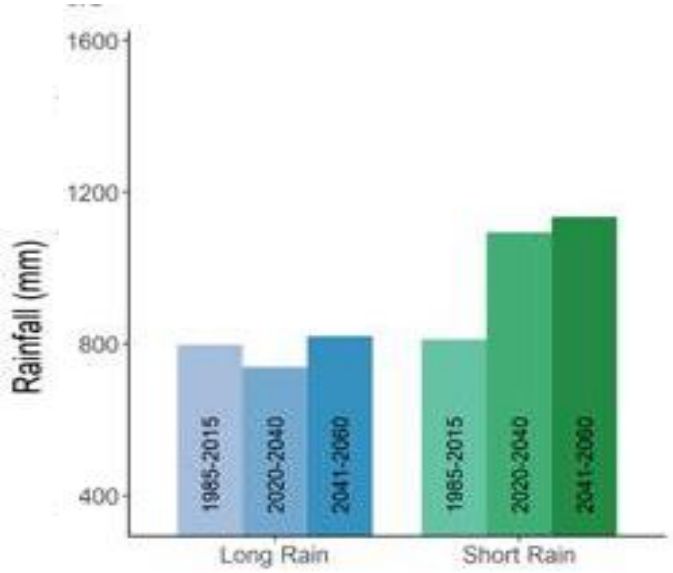


Figure 14: Annual total rainfall trends for the long rain and short rain seasons in the future (2020-2040 and 2041-2060) (Source: Kenya County Climate Risk Profile: Nandi County)

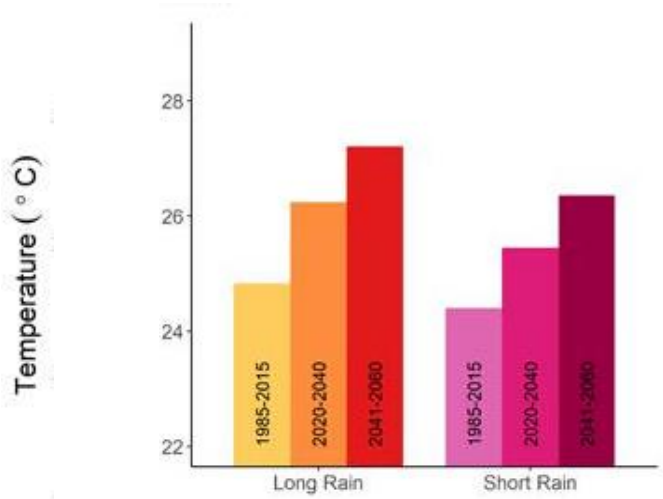


Figure 15: Annual mean temperature trends for the long rain and short rain seasons in the future (2020-2040 and 2041-2060) (Source: Kenya County Climate Risk Profile: Nandi County)

From the projections, there is likely of climate hazards increasing in intensity, frequency and duration. This may have implications on the livelihoods and environment such as reduced crop yields, reduced reproduction and milk production in livestock, increased soil erosion and land degradation (e.g. gullying) and increase in the likelihood of mudslides and landslides. The interaction between human activities and climate change will alter the occurrence of hazards.

3.2.1 Likely future Impacts

The increase in extreme weather events may lead to more floods, increase in pests and diseases, increased soil erosion, destruction of crops and property, loss of lives, increase in farming costs, high cost of living, destruction of infrastructure, high incidences of food insecurity, increased incidences of malnutrition cases and displacement of people among others. The exposure and vulnerability of the key groups to these climate scenarios is as below:

Women: Women are likely to be affected more due to the socio-cultural role placed upon them. They may face difficulties looking for water and other alternative sources of livelihoods. Because of culture, which denies them the tenure rights in managing the land resources, they may not be able to exploit on the available resources hence high cost of living. Similarly, because of the projected weather extremes, pregnant women may highly be exposed to human diseases, as their immune system is weak.

Elderly: Aging and some medications can change the body's ability to respond to heat. Climate warming may put older adults more at risk for heat illnesses and death. Similarly, there may be high incidences of human diseases especially malaria and water borne diseases due to their reduced immune system.

School going children: School-going children may be affected from the likely incidences of floods. Going to school may be a challenge. Additionally, destruction of infrastructure especially social amenities may affect their performance. Because of food insecurity issues that may result from incidences of climate hazards, there may be increased cases of school dropouts. This in turn might increase insecurity in the homesteads and business premises.

Crop Farmers: Small-scale farmers who rely on subsistence farming are likely to be more vulnerable with the projected climate scenarios. If precipitation remains highly variable, uncertain, and extreme rainfall events increases in frequency, duration and intensity, it will likely negatively affect crops in the farms and timely planning for planting. Farmers in steep slopes may face high cost of production due to increased soil infertility because of soil erosion, which

will be exacerbated by heavy rains coupled with land use changes caused by anthropogenic activities. For the tea farmers, increased temperatures may cause soils to dry and this may affect yields. A more serious problem however may be increased incidence of new pests and diseases that attack tea bushes. As temperatures may become too high for tea cultivation farmers may have to find alternative to tea farming.

Livestock keepers: Climate warming likely to cause heat stress in livestock that may lead to reduced reproduction, growth rate and milk production. Increased incidences of disease may occur.

Business communities: Small-scale traders who rely on farm produce will have little or none to sell because of low agricultural produce in the farms. Similarly, because of extreme rainfall events that are likely to increase in frequency, duration and intensity, there will be high incidences of flooding which will destroy business infrastructure together with roads and bridges making it difficult for goods to reach the market.

Human Health: With the changing climate, some of existing health threats may intensify and new health threats may emerge. There may be increased risk of vector and water borne diseases such malaria and cholera.

CHAPTER 4: EXISTING ADAPTATION STRATEGIES

4.1 Introduction

This section presents the strategies that various stakeholders are currently implementing within the county to address the climate related risks and hazards. Various actors including government, Civil Society organizations (CSOs) and communities have been implementing various actions to deal with the impacts of climate change. Examples of such strategies include establishment and strengthening of climate change governance structures at county and community levels, capacity building and awareness raising, putting in place a legislative framework and implementation of climate change resilience investments in various wards. The strategies are aimed at supporting livelihood strategies pursued by majority of the population such as crop farming, livestock keeping, and access to clean and safe water, improvement of transport network, climate smart agriculture, trade and artisanal mining.

4.2 Overview of existing adaptation strategies and their effectiveness

The prevailing climatic hazards mainly includes erratic rainfall patterns leading to shifts in agricultural calendar, increased number of consecutively dry days which leads to drying of crops and shortage of fodder for livestock, increased episodes of intense rainfall resulting into floods, crop failure and landslides, disease outbreak, environmental degradation leading to soil erosion and water pollution and their associated impacts.

Prolonged dry spells and erratic rainfall patterns are currently addressed by rainwater harvesting, digging of shallow wells, and fetching water from springs, drilling of boreholes, dams/water pans, water storage tanks, streams and rivers. Crop rotation, smallholder irrigations, cover cropping, diversification of livelihoods, contour farming, greenhouse, kitchen gardening, and intercropping are strategies used in agricultural sector. Planting of early maturing crop varieties and drought tolerant crops such as cassavas, sweet potatoes are also practiced to evade impacts of dry spells. Indigenous knowledge and traditional weather forecasting are applied to address challenges associated with unreliable erratic rainfall especially among the Talai community in Chesumei, Emgwen and Tindiret Sub county.

Adaptation strategies for environmental degradation include: reforestation and afforestation of

degraded lands, community forest conservation, planting of indigenous trees, Wetland conservation and managements, conservation of fragile ecosystem, livelihood diversification and contour ploughing. Awareness creation, capacity building, afforestation and reforestation campaigns are used to control soil erosion and degradation of lands. Protection and conservation of water catchment areas leads to water resilience.

Cultural practices on pest control such as handpicking, ash and powder soap application is being used while some farmers apply commercial pesticides. Livestock pests such as ticks, fleas, mites are controlled through application of Acaracides while mosquitos are addressed by use of mosquito nets and environmental sanitation. Flooding and flash floods are addressed by digging of trenches and improvement of urban drainage systems.

Strategies vary in their effectiveness for example; shamba system was found to be less effective in management and conservation of forests and wetlands. Inadequate training/ public awareness and capacity building in wetland- management and conservation further interfere with the effective strategies. Introduction of fruit tree, bee keeping, macadamia, giant bamboo, farming, zero grazing is very effective in managing and conserving wetland and forest.

4.3 Effectiveness of adaptation/Resilience strategies

As elaborated in section 4.1 above, a wide array of adaptation strategies is employed in addressing the identified climate risks and hazards. These strategies have a varying level of effectiveness as assessed during this process. The section below presents the climate related hazards with affected livelihood system, ranked adaptation strategies and the community segment applying the strategy as well as the gender consideration in the strategy per sub county. The ranking was done by popular ranking, which considered the cost of the strategy, current rate of use, and its technical/operation effectiveness. This was done from community consultation at the ward level; county multi-stakeholder climate risk assessment and further review and input by technical team at the county level. In order to make the adaptation strategies more effective, there is need for improved access and use of climate information; capacity building through strengthened extension services; better coordination between actors for optimal outcomes.

4.2.1 Mosop Sub County

Table 8: Adaptation Strategies in Mosop Sub County

Risk/Hazard	Livelihood / Economic System	Ranked Climate Resilience Strategies	Stakeholder Group Applying the Strategy	Gender and Social Inclusion information
Direct impacts of flooding Environmental degradation such as erosion, gulleys, landslides and destruction of water sources, destruction of roads and infrastructure, rock fall and mud slide	• Farming • Trade • Transport sector	1. Sustainable Land Management practices (terracing, construction of gabions), catchment conservation reforestation and afforestation of degraded lands; and support conservation of communal forest resources 2. Adoption of Climate Smart Agriculture (CSA) specifically early maturing and drought tolerant crops 3. Capacity building of the community members on soil erosion conservation mechanisms	• County Government of Nandi • Civil Society Organizations • Community Members	Programs targets both men, youth, women and PWDs
Erratic rainfall patterns	• Farming • Small scale traders	1. Livelihood diversification 2. Adoption of modern farming techniques 3. Use of appropriate certified seeds 4. Strengthen early warning systems and; access and use of Climate Information Services (CIS)	• Farmers/community members • Kenya Meteorological Department (KMD)	strategy is gender inclusive
Prolonged dry season	• Farming • Sand harvesting • conflict	1. Water harvesting and storage at household, community and institution level as well and on farms through trenches 2. Conservation of water catchment areas 3. Reforestation and	• Farmers • Community based Organizations • MEDIA • KWS • KFS	women stand to benefit more from conserved water sources

		afforestation of degraded lands 4.	• WRUA • NEMA • RESEA……	
Emerging pests, diseases and noxious weeds Lightning	• Farming • Humans •	1. Adoption of disease resistant crop and livestock varieties 2. Spraying with agro chemicals 3. Integrated pest management practices 4. Capacity building 5. Use on m…nets 6.	• Farmers • County government • Gok	strategy is all gender inclusive

4.2.2 Chesumei Sub-County

Table 9: Adaptation Strategies in Chesumei Sub County

Risk/Hazard	Livelihood/Economic System	Ranked Climate Resilience Strategies	Stakeholder Group Applying the Strategy	Gender and Social Inclusion information
Reduced quality and quantity of water in catchment areas; water catchment areas degradation and farmland and infrastructure destruction	• Farming • Trade • The transport sectors • Water supply	1. Implementation of Sustainable Land Management practices (terracing, construction of gabions) 2. Promote adoption of Climate Smart Agricultural practices (CSA) such early maturing and drought resistant	• Farmers • Women groups • Youths groups • County government • CSOs	• Both men and women will be able to increase agricultural yields and address food insecurity

		crops, 3. PROPER ASSESSMENENT 4.		
Erratic rainfall patterns	/Farming /Small scale traders	1. Strengthen climate information services and early warning systems 2. Increase investment in modern farming techniques 3. Capacity build the community members on Livelihood diversification	• Farmer • Community based Organizations • County government • KFS • NEMA National Government	Involvement of all community members will help to ensure that everyone is reached.
Prolonged dry season	Crop and livestock Farming household	1. Investment in water storage 2. conservation or catchment areas 3. Promotion of small scale irrigation 4. Investment in modern farming techniques such as greenhouses 5.	• Farmers • Community based Organizations • County government • KFS • NEMA • National Government	Irrigation will benefit all genders, women benefit more from rainwater harvesting
Floods	• Crop farming • Transport systems • Traders	1. Protection of water banks 2. Construction of water harvesting infrastructure such as pans	Farmers	This will benefit both men and women since it will reduce soil erosion and enhance food

				production

4.2.3 Emgwen Sub County

Table 10: Adaptation Strategies in Emgwen Sub County

Risk/Hazard	Livelihood/Economic System	Climate Resilience Strategies	Stakeholder Group Applying the Strategy	Gender and Social Inclusion information
Environmental degradation	• Crop and Livestock Farming • Traders • The transport sector	1. Adoption of Climate Smart Agriculture (CSA) such as green houses, promotion of early maturing and drought tolerant crops, 2. Investment in Sustainable Land Management practices (terracing, construction of gabions) 3. Promotion of Soil conservation strategies	• Farmers • Women groups • County Governmen t	• Both men and women will be able to increase agricultu ral yields and address food insecurit y.
Erratic rainfall patterns	• Farming • Small scale trading	1. Promotion of livelihood diversification practices such as bee keeping and other nature based enterprises 2. Capacity build farmers on modern farming techniques 3. Strengthen Climate information services and early warning	Farmers	All the genders to benefit from the strategies

Prolonged dry season	• Farming	1. Construction of water reservoirs and water storage infrastructure 2. Promotion of small holder irrigation 3. Promotion of modern farming techniques	• Farmers • Community based Organizations	This will ensure that women spend less time in search for water and invest more time in other productive activities
Floods	• Farming • Transport systems • Traders	1. Soil and water conservation structures such as terraces, trenches 2. Construction of water pans 3. Improved drainage system	• Farmers	Strategies cuts across all genders

4.2.4 Nandi Hills Sub County

Table 11: Adaptation Strategies in Nandi Hills Sub County

Risk/Hazard	Livelihood/Economic System	Climate Resilience Strategies	Stakeholder Group Applying the Strategy	Gender and Social Inclusion information
Environmental degradation-soil erosion, gulleys, water catchment destruction, Landslides	• Farming • Traders • The transport sector • Water sector	1. Adoption of Climate Smart Agriculture (CSA) such as green houses, promotion of early maturing and drought tolerant crops, 2. Soil and water conservation practices 3. Reforestation and afforestation of degraded lands	• Farmers • Women groups • County Government of Nandi • CSOs	• Both men and women will be able to increase agricultural yields
Erratic rainfall patterns	• Farming • Small scale traders	1. Investment in modern farming techniques 2. Strengthen climate information services and early warning 3. Livelihood diversification	• Farmers	Strategies cuts across all genders
Prolonged dry season.	• Farming	1. Conservation of water catchment areas 2. Construction of water storage 3. Promotion of climate smart agriculture	• Farmers • Community based Organizations	• This will ensure that women spent less time in search for water and invest more in time in more productive activities

Floods/flash floods	• Farming • Transport systems • Traders	• Soil erosion control • Construction of water pans • Rehabilitation and construction of drainage systems	• Farmers	• This will benefit both men and women since it will reduce soil erosion and enhance food productivity

4.2.5. Adai Sub-County

Table 12: Adaptation Strategies in Aldai Sub County

Risk/Hazard	Livelihood/ Economic System	Climate Resilience Strategies	Stakeholder Group Applying the Strategy	Gender and Social Inclusion information
Erratic rainfall patterns	• Farming • Small scale traders	1. Capacity build the community on modern farming techniques and gardens practices 2. Livelihood diversification (promotion of apiculture and aquaculture) 3. Improve climate information services and early warning system	• Farmers • Women groups • Youths groups • CBOs	• Involvement of all community members will help to ensure that all community members benefit
Prolonged dry season.	• Farming	1. Promotion of Irrigation 2. Climate smart agriculture. (promotion of apiculture and aquaculture) 3. Construction of water reservoirs 4. Enhance water harvesting and storage in institutions.	• Farmers • Community based Organizations	• This will ensure that women spend less time in search for water and invest more in time in more productive activities
Environmental degradation	• Farming • Traders • The transport sector	1. Adoption of Climate Smart Agriculture and promotion of early maturing and drought resistant crops, 2. Soil and water conservation 3. (terracing, construction of gabions) 4. Promotion of Soil erosion conservation	• Farmers • Women groups	• Both men and women will be able to increase agricultural yields and address food insecurity.
• Flash floods	• Farming • Transport systems • Traders	1. Investment in soil conservation 2. Promote construction of water pans and on farm water template 3. Setting up of disaster	• Farmers	• Women shall save time used to fetch water and engage in more

		response unit.		productive activities
• Increased prevalence of pests and diseases	• Farming • Trade	1. Investment in soil and Land Management practices 2. Integrated crop pests and disease management. 3. Increase investment in Pest and disease control measures	• Farmers • CFA members	• This will enhance food security thus enhancing the economic status of both gender.
• Hailstorms	• Farming	• Investment in crop insurance schemes	• Farmers	

4.2.6 Tindiret Sub-County

Table 8: Adaptation Strategies in Tindiret Sub County

Risk/Hazard	Livelihood/ Economic System	Climate Resilience Strategies	Stakeholder Group Applying the Strategy	Gender and Social Inclusion information
Irregular rainfall patterns	• Farming • Small scale traders	4. Capacity build the community on modern farming techniques and gardens practices 5. Livelihood diversification (promotion of apiculture and aquaculture) 6. Improve climate information services and early warning system	• Farmers • Women groups • Youths groups • CBOs	• Involvement of all community members will help to ensure that all community members benefit
Prolonged dry season.	• Farming	5. Promotion of Irrigation 6. Climate smart agriculture. (promotion of apiculture and aquaculture) 7. Construction of water reservoirs 8. Enhance water harvesting and storage in institutions.	• Farmers • Community based Organizations	• This will ensure that women spend less time in search for water and invest more in time in more productive activities
Environmental degradation	• Farming • Traders • The transport sector	5. Adoption of Climate Smart Agriculture and promotion of early maturing and drought resistant crops, 6. Soil and water conservation 7. (terracing, construction of gabions) 8. Promotion of Soil erosion conservation	• Farmers • Women groups	• Both men and women will be able to increase agricultural yields and address food insecurity.
• Flash floods	• Farming • Transport systems • Traders	4. Investment in soil conservation 5. Promote construction of water pans and on farm water template 6. Setting up of disaster response unit.	• Farmers	• Women shall save time used to fetch water and engage in more productive activities

• Increased prevalence of pests and diseases	• Farming • Trade	4. Investment in soil and Land Management practices 5. Integrated crop pests and disease management. 6. Increase investment in Pest and disease control measures	• Farmers • CFA members	• This will enhance food security thus enhancing the economic status of both gender.
• Hailstorms	• Farming	• Investment in crop insurance schemes	• Farmers	

CHAPTER FIVE

SECTOR STRATEGIC PRIORITY AREAS

5.1 Introduction

As presented in chapter 4, the major climate risks and hazards identified by stakeholders across the six sub-counties in Nandi include unpredictable rainfall patterns, prolonged dry seasons,

landslides, gullies and floods, which is felt across the county. During community consultation forums and the County Level Multi-stakeholder workshop, the climate hazards in the county prioritized at ward level were presented in the view of the current and projected climate outlook. This was followed by sector-wise identification and prioritization of the response actions for the identified climate risks. This section presents the prioritized strategies for addressing climate risks and their impacts in four priority areas namely water, agriculture, environment and disaster management. The strategies are summarized in the table below.

5.2 Strategic Priority Areas Summary

Prolonged Dry Season

Water	Agriculture	Environment	Disaster management
• Enhance water harvesting and storage in public institutions, households and farms • Rehabilitation, protection and conservation of water catchment areas and water sources • Capacity development in water sector; application of solar energy in water supply and mobilizing resources	• Promotion of climate Smart-Agriculture achieved through Irrigation, modern technology and early maturing and drought tolerant varieties and breeds and certified seeds. • Livelihood diversification such as apiculture and aquaculture • Strengthen extension	• Conservation and protection of water catchment areas to be achieved through afforestation and reforestation • Establishment of fruit tree nurseries and agroforestry; Supporting private and community tree nurseries with fruit trees, bamboo and indigenous tree species • Capacity building and resource mobilization	• Strengthening of Early Warning Systems to be achieved through • Improving climate information systems. • Scaling up and improving existing local weather stations.

	services		

Floods

Water	Agriculture	Environment	Disaster management
• Storm and water harvesting and storage to be achieved through infrastructure development, capacity building on best water harvesting techniques and nature-based solutions • Protection of riparian zones and river banks • Afforestation and increase in vegetation cover	• Planting of cover crops • Terracing • Maintaining buffer zones between farms and water sources	• Improved drainage systems • Physical planning requirements • Conservation of riparian zones	• Strengthen disaster response institutional capacity • Community capacity building on Disaster Risk Reduction • Strengthening Early Warning System

Pests, Diseases and Noxious Weeds Outbreak

Water	Agriculture	Environment	Disaster management
• Promotion of water harvesting and storage • Conservation and restoration of water catchment	• Afforestation, agroforestry and reforestation • Soil erosion control through construction of gabions terracing, grass	• Conservation of water catchment areas to be achieved through afforestation and reforestation	• Development and equipping of disaster response unit • Promote research and strengthen early warning systems

areas • Climate proof water infrastructure and rehabilitation of existing infrastructure including promotion of clean energy in water supply	striping and cover cropping with focus on ecosystem-based solutions • Awareness, sensitization and capacity building	programs • Promotion of green energy e.g., biogas and solar • Capacity building and awareness creation on environmental conservation	

Hailstorms

Water	**Agriculture**	**Environment**	**Disaster management**
• No hailstorm risks were identified in water sector	• Promotion of crop insurances • Agricultural enterprise diversification • Use of agricultural nets	• Capacity building of residents on livelihood diversification on livelihood resources such as Apiculture, fish farming,	• Strengthen early warning system on hailstones • Promote crop insurance schemes

Irregular and Intense Precipitation

Water	**Agriculture**	**Environment**	**Disaster management**
• Rain water harvesting expand storage • promote on farm water storage and	• Cover Cropping, • Soil erosion control (Grass stripping, trenching,	• Increased tree planting • Establish soil and water conservation	• Improve climate information services

conservation	terracing, gabions among others) • On farm water storage	structures	

Lightning

Water	**Agriculture**	**Environment**	**Disaster management**
		• Installation of lightening arrestors in institutional buildings	• Map lightning prone areas, carry out sensitization and install lightning arrestors

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

As indicated in chapter 1, Nandi's economy is highly dependent on rain fed agriculture, small scale trade and services, artisanal mining of sand and gold as well as exploitation of natural resources such as forests and rivers. As a result, the economy is highly exposed to climatic hazards including prolonged dry spells, erratic rainfall patterns, floods in low lying areas and emerging pests and diseases. These hazards coupled with human activities such as deforestation, unsustainable sand harvesting, encroachment of riparian zones and destruction of catchment areas further compounds the impacts on people and the environment.

Various actors including national and County government, local communities and CSOs are already implementing a number of climate change response actions as elaborated in chapter four, even though the efforts are largely disjointed and currently not achieving much in terms of resilience building. Based on the consultation with diverse actors within the county ranging from the affected communities, county and government officials, research and higher learning, CSOs, private sector representatives (see chapter 2 for details) and learnings from these experiences, several adaptation strategies have been proposed in chapter 5 to address these challenges going forward.

These include protection of catchment areas, promotion of climate smart agriculture, capacity building, strengthening early warning systems and strengthening disaster management institutional framework. These have to be done in a more coordinated manner while paying

attention to the changing climate through use of climate information in prioritizing and designing the interventions.

From the foregoing, this Pilot PCRA report recommends that:

1) A climate change action plan be developed to provide an implementation framework for the proposed adaptation strategies over the next 5 years. The action plan should focus on addressing the most common climate risks as identified in chapter three. These include erratic rainfall patterns, prolonged dry spells, increased pests and diseases.

   Floods and flash floods, soil erosion, reduced soil fertility, environmental degradation, increased pests and disease, landslides, increased number of continuous dry days within rainy seasons. As guided in chapter 5, the proposed actions should address the most vulnerable thematic areas, which include water, environment, and agriculture and disaster risk management.

2) That all actors rally around the action plan and support the county government in implementing the priority actions identified in the plan, which should be updated on regular basis to keep the document alive. Climate action implementation should take cognizance of the fact that some actions are more effective in addressing the climate risks than others.

   Sustainable Land Management practices such as terracing and construction of gabions; catchment conservation; reforestation and afforestation; and conservation of communal forest were found to be highly effective. Other effective strategies for climate resilience include adoption of Climate Smart Agriculture (CSA) specifically early maturing and drought tolerant crops and capacity building of the community members on soil conservation.

   On the other hand, livelihood diversification, adoption of modern farming techniques, use of appropriate certified seeds and strengthening early warning systems and access and use of Climate Information Services (CIS) through enhanced working relationship with the Kenya Meteorological Department (KMD) should be

embraced to strengthen resilience against prolonged dry seasons.

3) Capacity building of key players in the implementation of climate action should be undertaken, these includes: strengthening county climate change unit be to effectively coordinate and monitor the implementation of prioritized climate change actions, enhance capacity of the County Climate Change Planning Committee and Steering for informed decision making Across all sectors, capacity should be strengthened in order to facilitate mainstreaming of climate action across the sectors. This should be accompanied by increase capacity to track and monitor climate finances across various sectors in the county. Capacity building of the Ward Climate Change Planning Committees provides enables effective community-centre climate change risk assessment and action planning.

4) The Participatory Climate Change Risk Assessment (PCRA) process should be almost promptly followed with the Participatory Climate Change Action Planning Process rather than be undertaken as separate exercises as currently proposed in the PCRA guide. This will save time and resources and provide opportunity for logical flow of the process, on the other hand, one day for sub county/ward level engagement is not sufficient due to the onerous nature of the process. For adequate deliberations at ward level, 2-3 days were found to be adequate and 12-17 members were optimal. In addition, the PCRA process should include training of the PCRA task team, which was omitted from the PCRA guidelines. Regional blocs should provide opportunities for merging action plans of counties with aim to address cross-county climate risks and hazards.

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10. The Nandi County Climate Change Fund Regulations, 2022
11. The Nandi County Climate Change Policy, 2022

ANNEX 1: NANDI COUNTY CLIMATE CHANGE STEERING COMMITTEE

	NAME	DEPARTMENT	DESIGNATION	CONTACT
1.	Jonah Biwott	Lands & Environm	Chief Officer –Environment,	0723275117

		ent	Water and Natural Resources	
2.	Priscah Muigei	Finance	Finance and Economic planni ng	0720034466
3.	Dr. Paul Sanga	Agriculture	Agriculture and Cooperative Development	0720243777
4.	Alfayo Lel	Lands & Env.	Director Environment and Na tural Resources and Fund Ad ministrator	0720605778
5.	James K. Meli	Lands & Env.	Director Climate	0729838380
6.	Sally Kiboss	NEMA	Director	0724923679
7.	Richard Ngeny	Administration	Municipal Manager	0725421592
8.	Godfrey Omusonga	KMD - Meterology	Director KMD	0722581142
9.	Lorenne Jerono	Administration	Disaster Officer	0726231698
10.	Keneth Muskiton	KFS	CFC	0725886117
11.	Caroline Lagat	Culture & Social	Chief Officer (PWDs)	0790859271
12.	Magdalene Rono	Culture & Social	Women Representative	0724040194
13.	David K. Busienei	CSO	Chair of PACJA North Rift	0722667207
14.	Sharon Jeruto	Youth	Youth Bunge	0717524871
15.	Eunice Koech	CSO		

ANNEX 2: **NANDI COUNTY CLIMATE CHANGE PCRA AND CLIMATE CHANGE ACTION PLAN TECHNICAL WORKING GROUP**

	NAME	**SECTOR**	**DESIGNATION**	**CONTACT**

1.	James K. Meli	Lands & Env.	Director Climate	0729838380
2.	Alfayo Lel	Lands & Env.	Dir. Environment and Natural Resources and Fund administrator	0720605778
3.	Samuel Kalabata	NEMA	Ast. Director	0724923679
4.	Ann Munyua	Legal	Legal Officer	0720579513
5.	Ruth Wairimu	KFS	Deputy CFC	0725886117
6.	Risper Tarus	CCCU	Ast Director Climate Change	0726268124
7.	Naomi Keter	Public Participation	Director Public & Civic Ed.	0727695994
8.	Sila Kimaru Too	Agriculture	Ast. Director	0745905303
9.	Cosmas Sum	CCCU	Economist (M&E)	0718417387
10.	Sammy Keror	Water	Ast. Director	0722455911
11.	Wesley Chumba	Environment	Environment Officer(EO) - Tinderet	0729950335
12.	James Kurgat	Environment	EO - Nandi Hills	0724226402
13.	John Songok	Environment	EO - Emgwen	0720126496
14.	Kelvin Kerich	Environment	EO - Aldai	0713197998
15.	Wesley Kimeli	Environment	EO - Chesumei	0725519819
16.	Alaska Jeruto	Environment	EO - Mosop	0704946702
17.	Dominic Tulo	Social Services	Social Safeguards Focal Person	0722832994
18.	David Cherwon	CCCU	EO - Tindiret	0723118771
19.	Jacob Sanga	CSO	Coordinator	0725035877
20.	Gladys Jepleting	PWD	EO - Emgwen	0716389260
21.	Gilbert Keter	Water	Water Officer	0725644337

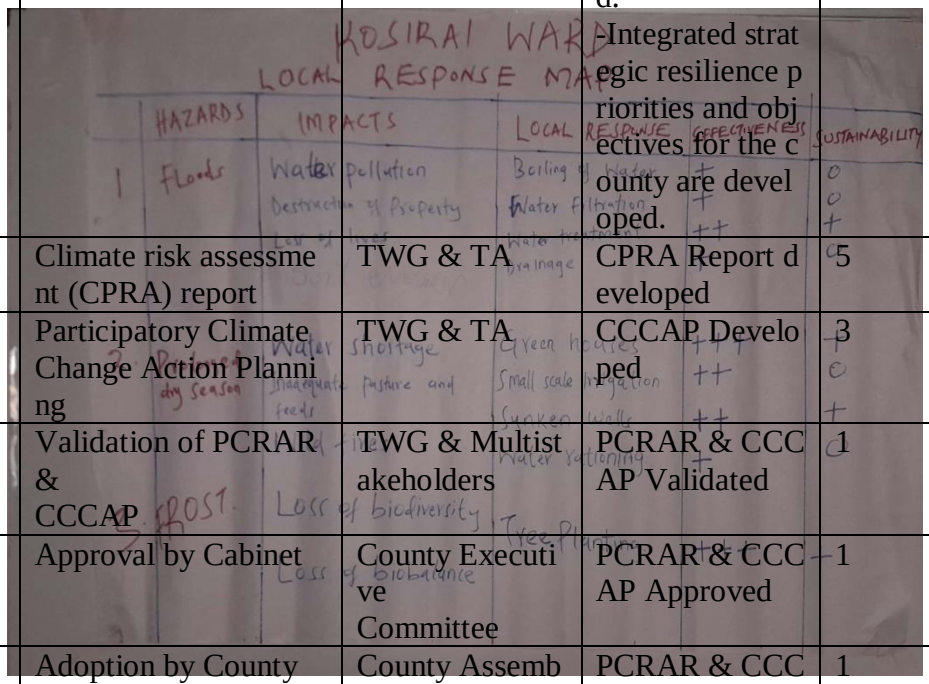
ANNEX 3

NANDI COUNTY – PARTICIPATORY CLIMATE RISK ASSESSMENT (PCRA) – ROAD MAP

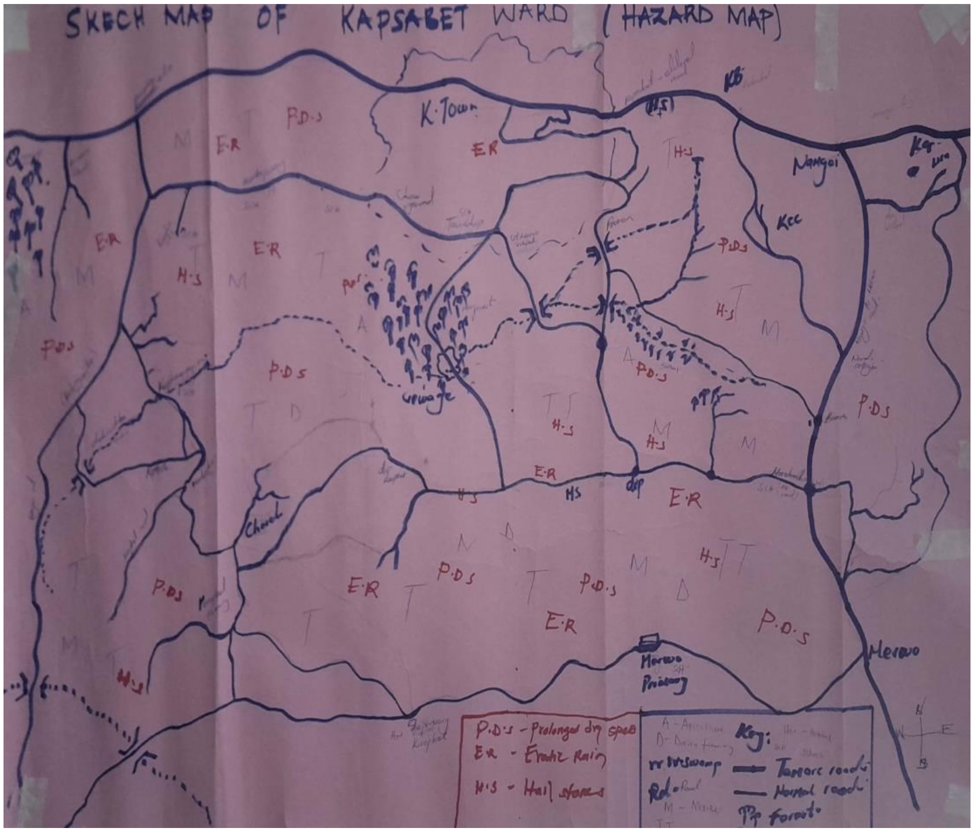
	ACTIVITY	STAKEHOLDERS	OUTPUT	DURATION (DAYS)	DATES

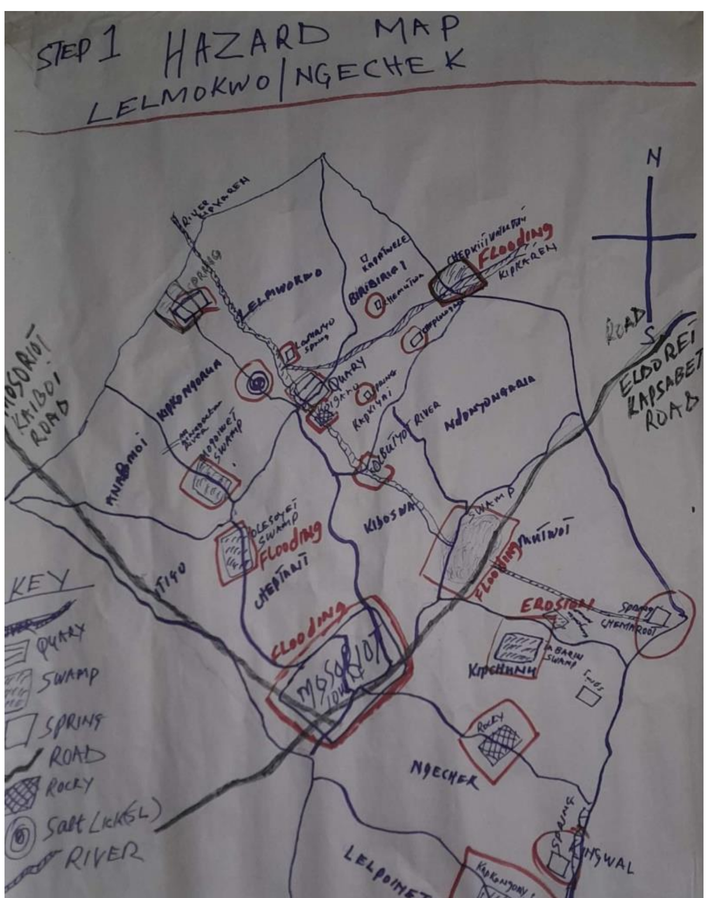
Step 1	Formation of cross-sectoral technical working group (TWG) or Task Team to lead participatory county climate risk assessment process	CCU, Directors of relevant sectors (Environment, Agriculture, Public Health, Water, Economic Planning, Administration, Finance), KMD, NEMA, CSOs, etc	-Established TWG -A timeline and associated budget for each step.	1	28/03/2023
	Training of the Task Team	TWG & Technical Assistance	Trained TWG	3	11-13/04/2023
Step 2	Stakeholder analysis and engagement process	TWG and other stakeholders	A prioritized list of key stakeholders to be engaged in the PCRA process.	2	04-05/05/2023
Step 3	Stakeholder engagement at all levels	TWG, Ward Committees and Community – Ward Level	-Key stakeholders at all levels are aware of and engaged in the climate risk assessment process. - A list of individual representatives to attend the workshop in Step 5 has been agreed.	6	08/05/2023 To 15/05/2023
Step 4	Data Collection and Workshop Preparation	TWG	-The technical WG and facilitation team have clear roles established for running and facilitating the participatory climate risk assessment workshop. -Key national and county policies and plans have been reviewed. -All materials a	2	16-17/05/23

			nd presentations for the worksho p have been dev eloped and are r eady for use.		
Step 5	Multi-stakeholder cli mate risk assessment workshop	TWG and select ed stakeholders	-A climate risk profile of the co unty is develope d. -Integrated strat egic resilience p riorities and obj ectives for the c ounty are devel oped.	2	18-19/05/23
Step 6	Climate risk assessme nt (CPRA) report	TWG & TA	CPRA Report d eveloped	5	22/05/23 To 26/05/23
Step 7	Participatory Climate Change Action Planni ng	TWG & TA	CCCAP Develo ped	3	27-28/05/23
Step 8	Validation of PCRAR & CCCAP	TWG & Multist akeholders	PCRAR & CCC AP Validated	1	29/05/2023
Step 9	Approval by Cabinet	County Executi ve Committee	PCRAR & CCC AP Approved	1	30/05/2023
Step 1 0	Adoption by County Assembly	County Assemb ly	PCRAR & CCC AP Adopted	1	31/05/2023
Step 1 1	Submission to the PIU	Director CCU	PCRAR & CCC AP Submitted	1	31/05/2023
Step 1 2	Official Launch of the CCCAP	TWG, Commun ity & Guests	CCCAP Launch ed	1	



ANNEX 4: SAMPLE PUBLIC PARTICIPATION PHOTOGRAPHS


SKECH MAP OF KAPSABET WARD (HAZARD MAP)
K.Town
Nangoi
Kcc
P.D.S
E.R
H.S
P.D.S - Prolonged dry spells
E.R - Erratic Rains
H.S - Hail stones
Key:
Tarmac roads
Normal roads
Forests


STEP 1 HAZARD MAP
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MOSORIOT KAIBOI ROAD
NGECHER
KEY
QUARY
SWAMP
SPRING
ROAD
ROCKY
Salt Lick(SL)
RIVER

Validation Workshop

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DEPARTMENT OF LANDS, PHYSICAL PLANNING, HOUSING, WATER, ENVIRONMENT, NATURAL RESOURCES AND CLIMATE CHANGE

ATTENDANCE LIST FOR MULTI-STAKEHOLDER WORKSHOP

29-05-2023

	NAME	CONTACT	SECTION	SIGN
1.				
2.				
3.	James K. Meli	0729838380	Environment & CC	
4.	Risper Chelagat Tanui	0726268124	CLIMATE CHANGE	
5.	Lorreine Jerono	0726231698	Adm G.P.S	
6.	Charles Too	0720706829	Administration SCA	
7.	JULIUS K. KORIR	0721929428	Adm - LPPHEWNRCC	
8.	MAGDALENE ROND	0724040194	CLIMATE CHANGE	
9.	Dr. Joel Sumukwo	0720322095	Climate change	
10.	MARY KEMEI	0727294954	ECONOMIC PLANNING	
11.	Maureen Chepngetich	0728175432.	Office of the County Attorney	
12.	Kefer Naumy	0727695974	Adm, PSP govt [PP & CE]	
13.	RICHARD LELEI	0725922630	DIRECTOR WATER & SANITATION	
14.	Alvine Mosong	0799538078	LRHWENRCC - Community	
15.	Mercy Chemutai	0712814092	Climate change	
16.	Jebet Jenipher	0710658390	Climate change	
17.	HON. SUSAN JEPTOO	0718068880	MCA ~~Climate~~	
18.	HON. LUCY JEPKEMEI	0723893932.	MCA	
19.	HON. Raymond Chelulei	0722386667	MCA	
20.	Elijah Sang	0720553722	N.C.A	
21.	David K. Busienei	0722667207	KPCG	
22.	Esther Omayio	0726911625	NLEIO - Livestock	
23.	Edwin Maiyo	0722686464	GIS	
24.	EZRA CHERUIYOT	0757810681	GIS	
25.	Mutai Joyce	0728056251	Norab - Environment/cc	
26.	CHEPCHIRCHIR SANDRA	0768031341	CGN	
27.	COSMAS SUM	0718417387	CGN - Environment	
28.	RUTH WAIRIMU KAMAU	0721505334	Kenya Forest Service	
29.	David Sum	0720792231	CGN - SCA	
30.	Affayo ael	0720605778	Environment & N Resources	

NANDI COUNTY PARTICIPATORY CLIMATE RISK ASSESSMENT COMMUNITY ENGAMENT TOOL

TINDERET WARD

Hazard/risk	Impact	Local response	effectiveness	sustainability	What would make them effective	Government support
Heavy Rains	-outbreak of diseases. -Destruction of Properties	- Evacuation. - Boil drinking water. - Proper drainage.	+++ ++ +	+ ++ 0	-Use of Mosquito nets -Treatment of water. - Creating awareness	- Technical Support. - Financial Support - Offering Trainings/ Workshops.
Prolonged Dry spell	- Scarcity of water. -Shortage of food. - Outbreak of diseases. - conflict	-Boreholes - Irrigation - Relief food. - Medical attention. - Pest resistant crops	++ + +++	+ + +++	It requires more water for irrigation. - Creating awareness and Sensitization - Diversification. - Doing away with cultural beliefs intams of food.	The goverment ets begin Irrigation Schemes. - The goverment to carry out extencion Services. - Building more dams - The goverment to protect develop water catchment. - Tree planting exercise.
Land slides/ Rock falling	-Destruction of Properties. - loss of lives - Soil erosion.	- Evacuation - Raising alarm - Cover crops. - Building gabions and Planting of trees.	+++ ++ +++	+ 0 +++	Resettlement to safer place. Provide Insurance Servic Creating awareness and Sensitization. - Crop rotation	- Provide financial support - Technical support. Create disaster policies. - Compensation policies/ laws. - Purchase of tree soedlings.

COUNTY GOVERNMENT OF NANDI

DEPARTMENT OF LAND, PHYSICAL PLANNING,HOUSING,WATER,ENVIRONMENT,NATURAL RESOURCES AND CLIMATE CHANGE

Ward stakeholder Engagement Forums

Attendant list

Date: 10/05/2023		Sub-county TINDERET				Ward: SONGHOR/SOBA	
Facilitator						Note taker:	
S/NO.	Name (participant	Gender		Age		Institution /organization	signature
		M	F	Below 35	Above 35		
1.	KEMBOI TONNY	M		✓		Youth Rep	
2.	GEOFREY K. MAIYO	M			✓	FARMER REP.	
3.	Cosmas Bunkel	M		✓		Ministry of Agriculture	
4.	PHILIPH KOSILEI	M			✓	PWDS rep.	
5.	EMILY JEPKEMBOI		✓	✓		Women Rep	
6.	KEVIN KIMUTAI	✓		✓		BUSINESS REP	
7.	NANCY CHEMUTAI		✓		✓	Farmers Rep	
8.	HILLARY KIPCHO	✓		✓		S. INTEREST GROUP	
9.	SOSTEN TILTAI	✓			✓	Religious Faith Rep	
10.	PATRICK TOSION	✓			✓	CSO Rep	
11.	STEPHEN IMANS	✓			✓	Ward Admin Songhor/Soba	
12.	Benjamin OSUNDWA	✓		✓		ACC TINDERET	Ben
13.	KIBET WESLEY	✓		✓		ENVIRONMENTAL OFFICER	
14.							
15.							
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17.							
18.							
19.							
20.							

Validation workshop.

COUNTY GOVERNMENT OF NANDI

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DEPARTMENT OF LANDS, PHYSICAL PLANNING, HOUSING, WATER, ENVIRONMENT, NATURAL RESOURCES AND CLIMATE CHANGE

ATTENDANCE LIST FOR MULTI-STAKEHOLDER WORKSHOP

29-05-2023

	NAME	CONTACT	SECTION	SIGN
1.	BARNABAS TALLAM	0722568076	CGN - SCA	
2.	James Kiyogal-	0724226402	CGN-Environment	
3.	Alaska Jeruto	0704946702	CGN- Environment	
4.	SHARON CHEPUTO	0717524871	NCYBA-Youth	
5.	SAMMY KEROR	0722455911	CGN - WATER	
6.	Brian Kipngetich	0727550032	CGN-Environment	
7.	Gilbert Keter	0725644837	CGN - Water	
8.	Julius Barno	0721930086	TNT- PLLOCATION	
9.	Albert Kipronо	0704832457	CGN -P-planning	
10.	PHILIP KIPLAGAT TALAM	0728641677	CGH - P. Planner	
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