COUNTY GOVERNMENT OF WAJIR

CLIMATE CHANGE MAINSTREAMING GUIDELINES

WATER AND SANITATION




Contents

FOREWORD

Green Africa Foundation was founded in Kenya in the year 2000 with a focus of implementing practical community driven projects towards greening Africa. The organization has actively been implementing a number of projects covering: Climate Change, Policy Advocacy, Environmental Conservation, Agriculture, Water and Energy. The organization has been very instrumental in policy advocacy that has seen through a number of policies coming to fruition both at the county and the national level and with agenda of mainstreaming climate change at the county level taking precedence.

The project that enabled the formulation of these guidelines was a DFID StARCK+ Extension Programme, funded through the Act Change Transform (Act! - NRM component) and implemented by Green Africa Foundation. The project's overall goal was to consolidate prior efforts towards completion of climate change legislation and cross sectoral coordination for enhanced climate change mainstreaming. The objective was to support selected counties, namely Garissa, Marsabit and Wajir to move forward with completion of their climate change legislations and also develop the sectoral climate change mainstreaming guidelines for priority sectors with a view to help give input to the review process of County Integrated Development Plans (CIDPs) 2018-2022. This objective was achieved through a programmatic approach and in partnership between Green Africa Foundation and the county governments of Garissa, Marsabit and Wajir, as well as other stakeholders including national government agencies, the private sector and Civil Society Organizations.

These guidelines are intended to assist the County Government of Marsabit to attain climate change mainstreaming in the water and sanitation sector by providing a framework for integrating climate change responses for the sector into county planning processes, especially the 2018- 2022 CIDP, as well as other processes such as performance contracting and budget making.

ISAAC P. KALUA PhD, CBS | CHAIRPERSON
GREEN AFRICA FOUNDATION

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Hon. CEC Water and Irrigation Wajir County Government

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Further gratitude to the County Government of Wajir where this project was implemented through the County departments of: Environment & Natural Resources, Agriculture & Livestock, Water, Energy, Disaster Response Unit, Health, Office of the County Secretary, County Assembly relevant committees and all other departments involved.

To the Kenya Forest Service, Kenya Wildlife Service, Kenya Forest Research Institute, WARMA, local Community Based Organizations, Non-governmental Organizations and Private Sectors who sent representatives who contributed immensely to this process, we highly and sincerely appreciate your valuable contribution. Mr. Jimale Mohamed & Adan Mohamed of ALDEF Wajir branch, may God bless you and reward your efforts and commitments towards ensuring this process was a success.

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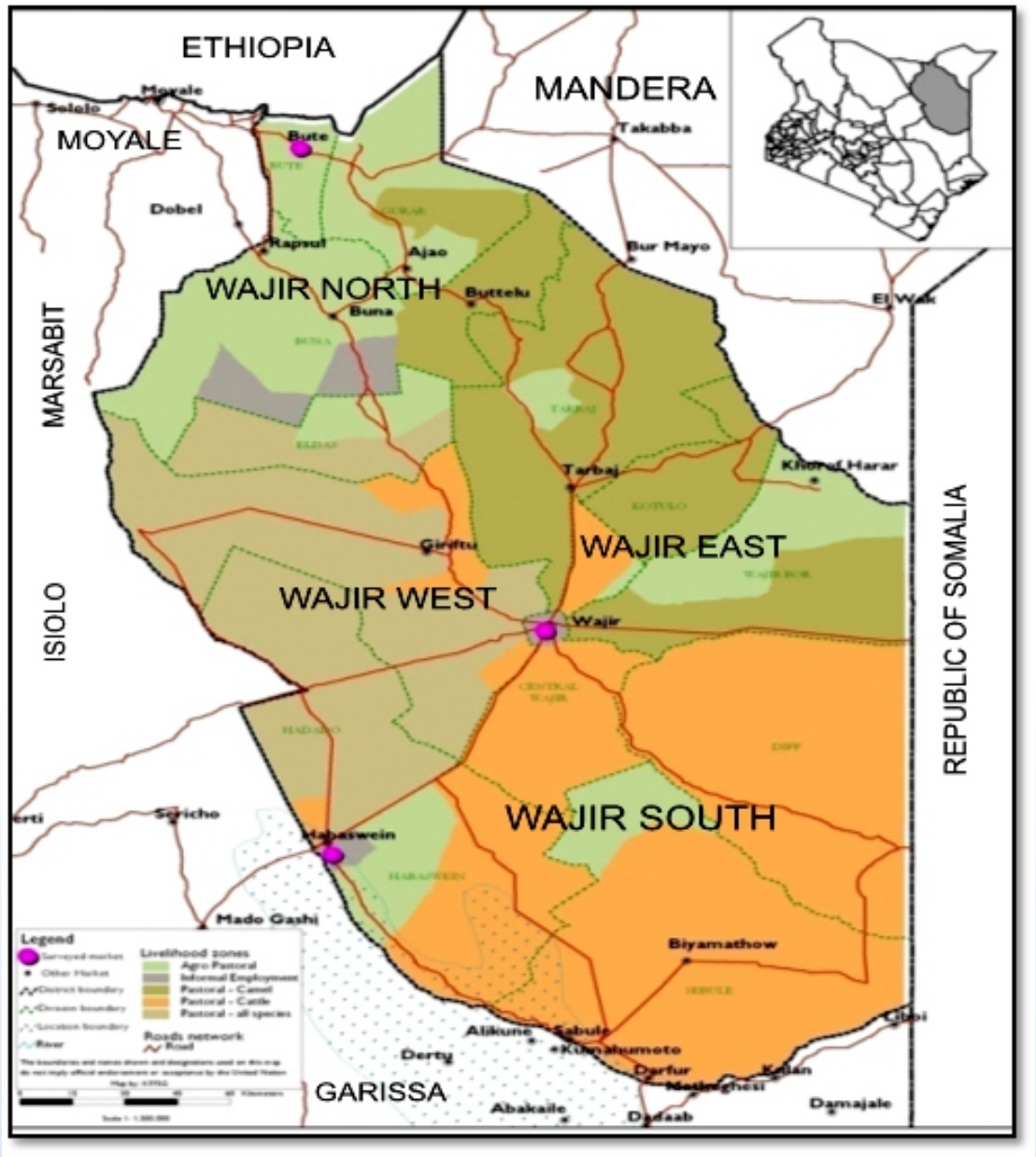
1.0 WAJIR COUNTY BACKGROUND INFORMATION

1.1 Location and Administrative Units

Wajir County is located in the North Eastern region of the Republic of Kenya between latitudes 1° N 60'N and 0° 20'N and longitudes 39° E and 41° E and covers an area of 56,685.9 Km^2. It borders Somalia to the East, Ethiopia to the North, Mandera County to the North East, Isiolo County to the South West, Marsabit County to the West and Garissa County to the South. The county comprises of six sub-counties namely: Wajir East, Wajir West, Wajir North, Wajir South, Eldas and Tarbaj. It is further sub-divided divided into 8 districts, 29 divisions, 30 wards, 142 locations and 172 sub-locations.



Map of Wajir County

1.2 Climate and Topography

Wajir County has an annual average relative humidity of 61.8 % ranging from 56 % in February to 68 % in June. The average annual precipitation received in the county is 240 mm. The annual average temperature is 27.9 °C with maximum temperatures ranging between 31°C in July and 36°C in March while minimum temperatures range between 21 °C in July and 24°C in April.

Wajir County is predominantly plain and lies between 150 metres and 460 metres above sea level and rises gently from the south and east towards the north rising to 200 metres at Buna and 460 metres at Bute and Gurar at the foothills of the Ethiopian highlands.

1.3 Hydrology and Drainage

Wajir County has one seasonal river and lake namely Ewaso Nyiro River and Lake Yahud respectively. The county is prone to seasonal flooding during the rainy season. The county's seasonal swamps and drainage lines serve as grazing zones during the dry season as well as for cultivation during the rainy seasons. The swamps are in Lagboghol area and in the western and southern part of Habaswein area. The county is generally covered with young sedimentary rocks with loamy soils in the north bordering the Ethiopian highlands.

1.4 Population

According to the Kenya 2009 Population and Housing Census, Wajir County was projected to have a total population of 852,963 in 2017. The males comprise 55 per cent of the population whereas female population account for 45 per cent. 84.2 per cent of the population is below 29 years. The county has an inter-censual growth rate of 3.22 per cent with an average population density of 13 persons per square kilometre. The county's population is mainly rural with only 13.8 per cent of the total population living in urban areas.

The Wajir County population is dominantly comprised of the Somali people who identify themselves through the clans. The main clans include: Degodia, Ajuran, and Ogaden. Most of the urban settlements are found in the county, sub-county and ward headquarters which also serve as market centers. On the other hand, the rural population of whom majority are pastoralists are found in the grazing reserves and watering points which may sometimes double as administrative locations and sub-locations. The settlements are modeled around clans, water and pastoral resources.

1.5 Economic Activities/Livelihood

Majority of the population in Wajir County depend on livestock for their livelihood. The main form of land use is nomadic pastoralism which is seen as the most efficient method of exploiting the range lands. Other economic activities practiced

in the county include small scale crop farming, mining and trading. Farming is practiced in depressions and along drainage lines where there is more moisture due to seasonal flooding, as well as around shallow wells, water pans and boreholes. Due to the aridity of the county, crop production is limited and contributes little to food security. Most inhabitants of the county rely on livestock products like milk and meat as their staple food. The main crops produced include sorghum, drought resistant maize, beans, melons, cowpeas, green grams and horticultural crops like kales, spinach, tomatoes, sweet and hot peppers. These activities are mostly undertaken in small scale for subsistence but commercial farming is beginning to take root in the county.

1.6 Forest Cover and Wildlife

Wajir County has no gazetted forest but has 1.99 per cent woodland cover of Kenya's 6.99 forest cover. However, most of the forest cover is comprised of woody trees and shrubs used for grazing by domestic animals and wildlife. The dominant species is acacia commiphora woodlands/trees which produces gums and resins that are only second to livestock in terms of supporting economic livelihoods in the county. The main forest products include gum and resin, charcoal, firewood, posts, barks, honey, wood carvings and wild fruits. Gums and resins are products that have high value in the international markets. It is used in many applications including cosmetics and pharmaceuticals, paints, confectionaries and soft drink industries, manufacture of acaricides and pesticides, among others.

In terms of wildlife, Wajir County is endowed with various game species like ostrich, hyenas, gazelles, lions, zebras, giraffes, warthogs, snakes and birds.

1.7 Water and Sanitation situation

The main sources of water in the county include underground water from boreholes and shallow wells, pans and dams as well as the seasonal Ewaso Nyiro River. Lake Yahud, which is an underground and permanent lake, situated on the periphery of Wajir town provides water for wildlife and quarry activities although the water is saline and not safe for human consumption. Only about 2 per cent of the county's households have access to piped water with many residents depending on water from water kiosks.

With regards to sanitation, more than 60 per cent of the population in Wajir County relieve themselves in the bush or open field. In the urban centres such as Wajir Town, only a few homesteads and institutions in the county are connected to septic tanks for sewer disposal. the bucket system is used for collection of human waste that is then collected by 'night soil men' for disposal by way of underground burying. This predisposes the population to disease outbreaks and the contamination of water sources with faecal coliforms. According to the Kenya Ministry of Health, Wajir County loses KES. 854 million each year due to poor

sanitation. This includes losses due to medical access time, premature death, health care costs and productivity.

1.8 Waste Management

Only 1.2 per cent of garbage generated is collected by the local authority while 0.6 per cent is disposed in a garbage pit, 8.3 per cent in public garbage heap and 89.9 per cent is burned. At least 13.6 per cent of the households have no place for human waste disposal with latrine accounting for 46 per cent.

1.9 Energy situation

Trees provide the major fuel for households, in terms of firewood and charcoal, which accounts for 96.5 per cent for domestic use as well as for use in institutions and hotels. For lighting, majority of the households depend on solar lanterns and solar torches.

2.0 MAINTREAMING CLIMATE CHANGE IN THE WATER AND SANITATION SECTOR IN WAJIR COUNTY

2.1 Introduction

Like other counties in Kenya, Wajir County's economy is highly dependent on the natural resource base, and thus is highly vulnerable to climate variability and change. Rising temperatures and changing rainfall patterns, resulting in increased frequency and intensity of extreme weather events such as droughts and flooding, threaten the sustainability of the county's development.

Key economic sectors in Wajir County are particularly susceptible to climate change impacts and this threatens to undermine the county's recent and impressive development gains. It is therefore important that the county builds and enhances its climate resilience and adaptive capacity. Building climate resilience requires that Wajir County's systems of governance, ecosystems and society have capability to maintain competent function in the face of climate change. Adaptive capacity is key to improving socio-economic characteristics of communities and households as it includes adjustments in behaviour, resources and technologies, and is a necessary condition for design and implementation of effective adaptation strategies.

Climate change mainstreaming in the various sectors is necessary to equip various coordinating departments in the county government with the tools to effectively respond to the complex challenges of climate change. In this context, mainstreaming implies the integration of climate change policy responses and actions into county sectoral planning and management processes. This integration

operates by providing an overarching guidance system that requires all sectors of the government to implement climate change responses in their core functions. Mainstreaming is a process that encourages cooperation across government departments in planning for a longer-term period rather than fragmented, short-term and reactive planning. County governments are required by the County Governments Act, 2012 to prepare and implement County Integrated Development Plans (CIDPs). The CIDP provides an appropriate channel through which climate change actions can be mainstreamed into county sectoral development plans.

These guidelines are intended to assist the County Government of Wajir to attain climate change mainstreaming in the water and sanitation sector by providing a framework for integrating climate change responses for the water and sanitation sector into county planning processes, especially the CIDP, as well as other processes such as performance contracting, and the budget making process.

2.2 Rationale for Climate Change Mainstreaming in the Water and Sanitation Sector

Kenya is a water scarce country. The natural endowment of renewable freshwater is low, and water resources are unevenly distributed in both time and space. Climate change will worsen this already precarious situation as it affects the main hydrological components, i.e., precipitation and runoff. This will alter the spatial and temporal availability of water resources.

In recent years the Kenya Meteorological Department has attributed the phenomena of floods, increased frequency and severity of droughts, and increased food and water insecurity to climatic changes already being experienced in many parts of the country, especially in the arid and semi-arid lands (ASALs). The meteorology department has noted that the current climate is characterized by large variability in rainfall with occurrence of extreme events in terms of droughts and floods. Freshwater resources are already highly influenced by inter- and intra-annual rainfall variability, including the extremes of flooding and drought. Climate change may further reduce the availability of this resource through altered rainfall patterns, higher evaporation, lower lake levels, accelerated loss of glaciers and rising sea level.

The availability of water resources in Kenya has been decreasing over time as a result of persistent droughts and land-use patterns. The climate scenarios show that rainfall variability and increased evaporation due to higher temperatures will lead to further decreases in the available water. Already there are dramatic reductions in the snow and glaciers of Mount Kenya, believed to be associated with global warming. The disappearance of the glaciers will affect agricultural activities,

the availability of water for both rural and urban populations, hydroelectric production and tourist activities. Rising temperatures and changing patterns of rain have also exacerbated the problem of disappearing wetlands and have increased food insecurity as a result of reduced crop yield.

Wajir County being an already water stressed county due to its location in the ASAL zone will experience the impacts of climate change on its water and sanitation sector with greater severity and intensity, hence the need to mainstream climate change considerations into development planning for the water and sanitation sector.

3.0 RISKS AND IMPACTS OF CLIMATE CHANGE IN THE WATER AND SANITATION SECTOR

3.1 Flooding

For millennia, humans have settled in floodplains in order to till fertile soils, use the flat terrain for settlements, gain easy and safe access to water and use rivers for transport. Whereas riverine floods are natural phenomena that have always occurred, in recent times, humans have become more exposed to flood risk as encroachment into flood plains and lack of flood response plans increase the damage potential. Much of Kenya is vulnerable to flooding including the lower riparian counties such as Wajir. Increased incidences of flooding will adversely affect potable water sources and may also compromise sanitation situation and infrastructure.

3.2 Drought

The term drought may refer to a meteorological drought (precipitation well below average), hydrological drought (low river flows and low water levels in rivers, lakes and groundwater), agricultural drought (low soil moisture), and environmental drought (a combination of the above). The socioeconomic impacts of droughts arise from the interaction between natural conditions and human-induced climate change factors such as changes in land use, land cover, and the demand for and use of water. In some cases the frequency of occurrence of droughts is exacerbated by human induced changes in land cover. Excessive water withdrawals can increase the likelihood and impact of drought. Droughts have both direct and indirect consequences for human livelihoods. A direct consequence is crop and pasture loss, which can cause starvation if alternative food sources are not available. Indirectly, water shortages contribute to the spread of disease, because people lack water for basic hygiene.

3.3 Water Quality

Climate-related warming of lakes and rivers has implications for freshwater ecosystems, such as changes in water salinity, water nutrient content, concentration of pesticides and other pollutants, salinization of groundwater, water chemistry and pH balance. Climate change, particularly if it is reflected in reduced rainfall, would further compound the Wajir County's already strained water resources and lead to inability of the county to meet people's demand for potable water.

3.4 Socio-Economic Impacts

In addition to its effects on the natural hydrological cycle, climate change is associated with changes in both ground and surface water supply for domestic, agricultural and industrial uses, including irrigation, hydropower generation, navigation and fishing. Hydro-meteorological disasters such as floods and droughts have major effects on food supplies, health, economic and environmental losses, and social upheaval. Empirical evidence shows that there will be changes in the supply and demand of food commodities as a result of low yields resulting mainly from drought and flooding events. The changes will also affect the profitability of agricultural activities including livestock production and the availability of food. The poor are among those who suffer particularly from the effects of water stress due to their vulnerability and inability to adapt.

3.5 Water resource conflicts

A water crisis as a result of climate change will increase the probability of competition between water use sectors and, in the absence of systems regulating such competition, the likelihood of water conflict. Climate change is anticipated to increase conflicts as a result of struggles for water use if increasing supply to meet growing demand for water resources cannot be assured, in addition to other pressures on natural and human systems, e.g. from population growth. In Kenya's ASAL areas such as Wajir County where pastoralism is a major economic activity, with pastoral communities migrating in search of water and new seasonal grazing, conflicts over water and grazing fields is likely to rise.

4.0 STRATEGIES AND GUIDELINES FOR MAINSTREAMING CLIMATE CHANGE IN THE WATER AND SANITATION SECTOR IN WAJIR COUNTY

STRATEGIC ISSUE 1: VULNERABILITIES DUE TO CHANGES IN TEMPERATURE REGIMES AND PRECIPITATION PATTERNS.			
Strategic Goal: Enhanced adaptive capacity and resilience of communities and water r esource users to the adverse impacts of climate change			
Strategic Objective: Institute measures to reduce the vulnerabilities of communities and water resource users to changing temperature regimes and precipitation patterns			
Mainstreaming Strategies and Guidelines		**Timeline**	**Responsible**
I	The County Government will invest in systems for provision of accurate, timely and reliable climate/weather and watershed information to inform decisions of water resource users. This will involve collaboration with national government agencies such as the Kenya Meteorological Department, National Drought Management Authority and Water Resources Management Authority to establish, improve, modernize and maintain climate/weather and watershed assessment infrastructure; integration of scientific and indigenous knowledge and skills, and capacity building on weather and watershed data analysis, packaging, dissemination through community radio stations, mosques and public forums.	By 2020	Departments of Environment, Water, Sanitation
II	The County Government will establish and maintain inventories for all surface and groundwater resources in terms of quality and quantity. This will entail the identification of the available water from different sources (water supply), the water needs of different users (water demand), and the tools (facilities) to store and/or carry water to the users, as well as water quality, creation of water data bank, establishment of a system to monitor and control boreholes, and strengthening of Wajir Water and Sanitation Company (WAJWASCO) to effectively undertake its water and sanitation management function.	By 2019	Departments of Environment, Water, Sanitation

STRATEGIC ISSUE 2: VULNERABILITIES DUE TO EXTREME WEATHER EVENTS			
Strategic Goal: Reduced vulnerabilities of communities to extreme weather events			
Strategic Objective: Institute measures to reduce the vulnerabilities of communities Other water resource users to extreme weather events			
Mainstreaming Strategies and Guidelines		**Timeline**	**Responsible**
I	The County Government will develop and implement systems for early warning and response, and ensure preparedness for extreme weather events. This will involve collaboration with relevant national government agencies such as the Kenya Meteorology Department and National Drought Management Authority in developing effective early warning systems, producing and disseminating of downscaled weather information on extreme weather events, and the preparation of contingency plans to end flooding and drought emergencies, and use of early warning weather and watershed information, including hydrologic cycle predictions, assessment of watersheds and water resource vulnerability due to hydrological cycle changes; and assessment of the potential impacts of climate change on water, waste-water and storm-water infrastructure.	Continuous	Departments of Environment, Energy, Agriculture, Livestock, Disaster Risk Reduction
II	The County Government will invest in climate-proofed infrastructure for water harvesting and storage (including mega dams, pans and roof catchment at household and institutional level), waste water, storm water and sanitation. This will involve developing infrastructure designs and implementing building technologies that can withstand such weather extremes by developing water harvesting, water supply, storm water, waste water and sanitation infrastructure that are adaptable and able to withstand extreme weather events such as excessive precipitation and floods, and use of clean energy such as solar and wind for pumping water for various uses.	Continuous	Departments of Environment, Water, Sanitation, Public Works, Agriculture, Livestock

STRATEGIC ISSUE 3: VULNERABILITIES DUE TO UNSUSTAINABLE NATURAL RESOURCE MANAGEMENT			
Strategic Goal: Enhanced resilience of water resource systems to climate change impacts through sustainable water resource management			
Strategic Objective: Mainstream sustainable water resource management into production systems to enhance resilience of communities and other water users			
Mainstreaming Strategies and Guidelines		**Timeline**	**Responsible**
I	The County Government will promote sustainable management and utilization of water resources for increased access to safe, adequate and affordable water for all. This will involve the development of policy/legal frameworks for responsible water use including control and regulation of new setllments. This includes passing legislation for integrated water resources management entailing water conservation, water harvesting and storage; use of clean energy such as solar and wind for pumping water for various uses, protection of catchment areas and riparian reserves, controlling construction of dams and boreholes at new settlements to reduce pressure on water resources, mapping of water catchment areas and developing legal frameworks for protecting these areas.	By 2019	Departments of Environment, Water, Sanitation
II	The County Government will invest in research, technology development and dissemination for sustainable water resource management. This will entail participatory and collaborative research towards development of suitable sustainable water resource management technologies and innovations for water harvesting, storage and supply, including roof catchment technologies, solar and wind energy for borehole pumping, and smart card systems for water kiosks.	Continuous	Departments of Environment, Water, Sanitation
III	The County Government will establish and implement mechanisms for resolving water resource use conflicts. This will entail the development of mechanisms for identification and profiling of potential water resource conflict hotspots, and the development of mechanisms for conflict resolution, including capacity building and empowerment of Water Resource Users Associations, taking into account traditional conflict resolution mechanisms.	Continuous	Departments of Environment, Water, Sanitation

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